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AN ANALYSIS OF THE FINANCIAL AND INVESTMENT ACTIVITIES
OF THE CHILEAN DEVELOPMENT CORPORATION: 1939-1964

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Note: Center Discussion Papers are preliminary materials circulated to stimulate discussion and critical comment. References in publications to Discussion Papers should be cleared with the author to protect the tentative character of these papers.

INTRODUCTION*

The night of October 25, 1938, the Popular Front came to power in Chile under the aegis of Pedro Aguirre Cerda. Twenty-six years later, the Christian Democrats won the Presidency as the nation united behind Eduardo Frei against the far left represented by Salvador Allende. The year 1964 witnessed also the 25th anniversary of the Chilean Development Corporation, CORFO,¹ the powerful semi-fiscal organization created in 1939 by the Popular Front to pursue its Development Program.

Since the 25th anniversary of CORFO in 1964, the air has been filled again with the same commercial and economic philosophy that so strongly swept over the country a quarter of a century ago. After the years of the policies of Finance Minister Vergara and President Alessandri at the end of the decade of the fifties, when the private sector was envisaged as the primum mobile and the state restrained itself to providing the stimuli necessary for growth, there has been a visible return to the Popular Front's philosophy that injections of public investment and extensive government intervention in the resource allocation process are a sine qua non for accelerated economic growth.

While the first wave of pro-government philosophy brought along CORFO, in the new setting of 1964-65, CORFO's major finance and investment roles were to be both renewed and expanded.² As the country has embarked

*The author acknowledges the cooperation of the officials of CORFO and in particular by those working in the Financial Section and the Oil, Sugar Beet and Electricity subsidiaries. Most of the statistical information included in this paper has not been published before either in English or in Spanish, but made available by these various officials.

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¹This organization (Corporación de Fomento de la Producción CORFO) will be henceforth referred to either as CORFO or the Corporation.

²In spite of its renewed significance, government has transferred the planning, national accounts and related research activities, which were traditional functions of CORFO, to the Oficina de Planificación de la Presidencia de la República (ODEPLAN) (Planning Office of the Presidency of the Republic).

on a new development effort with the same enthusiasm, but undoubtedly with more caution, experience and balance than in the year of CORFO's birth, a review and evaluation of CORFO's major activities is justified by a desire to unravel the mechanisms by which government has attempted to affect the allocation of resources and evaluate their effectiveness in an underdeveloped country and derive lessons for future policies both in Chile and elsewhere. Instead of covering all aspects of the Corporation's activities, we will, after a short historical review, concentrate on its major finance and investment activities, which appear to be of central significance.

PART I

Genesis and Growth of CORFO

Although the strong earthquake of January 1939 provided the excuse for the establishment of the Chilean Development Corporation, the roots of CORFO are found in the prolonged and powerful depression that shook economy and economic policy alike in the early thirties. In the tradition of independence common both to Chileans and the Araucanian Indians, CORFO was a nationalist, Chile-focused institution. In spite of the fact that the Great Depression acted as a powerful shock upon the Chilean economy, it left intact the social and economic structure of agriculture, and also did not affect the foreign control over the mining sector. CORFO, which was created after production and employment had exceeded appreciably the levels of the depression, established as its goals the increase and diversification of output. However, it lacked both the intent and power to transform mining and agriculture in a way that would make them compatible with the new economic and social organization of the other sectors.

The rather enthusiastic support given to CORFO at its inception (even the right wing conservatives that tried to boycott it found many aspects worth praising) reflected the culmination of numerous concurring

forces.¹ The conservative right advocated nationalistic policies; the socialists welcomed government intervention; and the newly created class of engineers, technicians, and specialists favored industrialization schemes because they enabled professionals to gain power by entering into up-to-now closed terrains of the decision making process. In an era and country where the demands for change had become progressively stronger, it reflected the aspirations and hopes of the majority of the Chilean population.

The philosophy that inspired its creation placed emphasis on two tenets:² the first advocated the need of an inward-oriented and nationally controlled self-propelling development effort. Its major facets were self-sufficiency and development of an economic system complete with "all" sectors; the importance of the export sector was deemphasized. The second tenet related to the role and relative quantitative importance of the public sector. It stated that, in order to achieve the desired level and pattern of growth, the public sector would have to assume primary responsibility for action. Smallness of domestic capital markets, lack of

¹The literature concerning CORFO is very scant and even then most of it unpublished. It includes The Chilean Development Corporation by Herman Finer (Montreal: The International Labour Office) 1947, 84 p.; Kalman H. Silvert, "The Chilean Development Corporation" 1952, unpublished Ph.D. Thesis, Tulane University, 173 p. which is a political science oriented research work that also provides useful economic insights. The Chilean Development Corporation (New York: Corporación de Fomento de la Producción) 1962, 13 p.; Corporación de Fomento de la Producción, Disposiciones Legales (Santiago de Chile: Departamento de Fiscalía, CORFO) 1959, 161 p. which contains all major laws concerning CORFO; "CORFO, Labor realizada entre los años 1952-1956" mimeographed, 1957; "La Corporación de Fomento de la Producción" Chile, 1962, mimeographed, 30 p. which is a useful summary of the various aspects of CORFO; "Cuestionario sobre Planificación Económica preparado por el Nederlandsch Economisch Institute de Rotherdam, Holanda, bajo la dirección de Jan Tinbergen". This document contains, in a mimeographed form, the questions submitted by the Tinbergen group and the answers given by CORFO; it also provides insights concerning the state of economic planning by CORFO. The Panorama Económico, a bi-weekly semi-popular journal has occasionally published highly informative essays concerning CORFO and its subsidiaries. Panorama Económico which carries the subtitle Review of Information and Polemics (Revista de Información y Polémica) carried on June 4, 1954 a Sonderschrift on CORFO: Labor de 15 años y Perspectivas (CORFO: 15 years of Work and Perspectives) No. 101.

²It also placed emphasis on a third concept: the need to prepare a plan that would permit rational intervention and would introduce to the decision-making process a long-run dimension.

private Chilean entrepreneurship, and the high social desirability of major investments with low private rates of return (especially those involving the industrial infrastructure such as energy, power, steel and so forth) were advanced as the primary causes for the need of enlarged government intervention. Government was imagined as the all-powerful agent which would cure all existing deficiencies. The first notion led to long-run trade-aversion, the second to an apotheosis of the public sector.

In accordance with clause (a), of article 25, Law No. 6640, CORFO was created to:

Formulate a General Plan for the Development of Production, destined to elevate the standard of living of the population by taking advantage of the natural resources of the country and the lowering of the costs of production, and to improve the situation of the balance of international payments, bearing in mind, in establishing the plan, the necessary equilibrium in the development of mining, agricultural, industrial and trade activities, and at the same time aiming to satisfy the needs of the various regions of the country.

As the principal agent in the government's development efforts, it has acted as a financier, entrepreneur, investor, innovator and researcher, and frontiersman. Through these roles, it has dominated economic life in Chile since 1939. It controlled the lion's share of the country's investment in machinery and equipment (more than 30 per cent in ten years, during 1939-1954), more than a fourth of public investment, and as high as 18 per cent (in 1954) of gross domestic investment.¹ Never before had the country witnessed the presence and intervention of such a powerful multifaceted government organization.

The birth of CORFO and its activities provide an example of contradictions. Launched by the leftist Popular Front it was approved by a conservative Congress. In a country that has a typical agricultural aristocracy, which up to recently controlled political life, it represented a type of government intervention that would be regarded as excessive even in socialist England.

¹For a detailed information concerning the relative importance of these investments see table 1.

TABLE 1

Percentage of Investments Financed by the Public Sector and CORFO

	% of Public Sector in Gross Domestic Investment.	% of CORFO in Gross Domestic Investment.	% of CORFO in Total Public Investment.	% of CORFO in Machinery and Equipment In- vestment.
1940	54.4	16.4	30.2	38.1
1941	62.6	17.1	27.4	38.5
1942	64.2	17.0	26.5	44.5
1943	44.2	13.1	29.8	40.9
1944	32.5	7.3	22.4	34.6
1945	36.4	6.3	17.3	28.5
1946	22.9	4.0	17.5	20.0
1947	63.9	11.3	17.6	14.0
1948	32.7	10.9	33.3	32.7
1949	40.9	14.6	35.8	33.5
1950	41.2	17.2	41.9	45.0
1951	44.1	12.5	28.5	26.1
1952	49.6	16.2	32.7	32.0
1953	43.1	11.6	27.0	40.3
1954	71.5	18.4	25.8	43.7
1955	n.a.	n.a.	n.a.	n.a.
1956	n.a.	n.a.	n.a.	n.a.
1957	n.a.	n.a.	n.a.	n.a.
1958	n.a.	n.a.	n.a.	n.a.
1959	n.a.	n.a.	n.a.	n.a.
1960	n.a.	n.a.	n.a.	n.a.
1961	n.a.	6.7	n.a.	n.a.
1962	n.a.	11.0	n.a.	n.a.
1963	n.a.	7.1	n.a.	n.a.

n.a. = not available.

SOURCE: Calculated from information in Cuentas Nacionales de Chile, 1940-1954 (Santiago de Chile: Editorial del Pacífico, S.A. 1957), Table 54. The figures for 1961, 62, 63 have been calculated on the basis of unpublished information by CORFO. The last column was calculated on the basis of information given in tables VI and 54 of the Cuentas Nacionales.

In the following table are presented the objectives of CORFO as regards economic policy; these coincide with the objectives of government in the late thirties and fall into three categories.

Principal Objectives of CORFO

Explicit	Implicit	Actual
Raising the standard of living.	Augment Capital Formation.	Industrialization.
Establishing Balance of Payments Equilibrium.	Raise Productivity. Promote Autarky and Self-sufficiency.	Maximum Import-Substitution in the Industrial Sector (Excluding Producer Durables Production). Establishment of an Infrastructure that would Permit future Industrial Expansion Including the Development of the Sources of Energy.

The explicit objectives which are defined as goals contemplated in the organic law, include a higher standard of living and balance of payments equilibrium. Implicit objectives are defined as those the legislator would have expressed had he been an economist, or had the law been written today by an economist and include higher capital formation, especially in infrastructure, increased productivity, and self-sufficiency. Finally, actual objectives are defined as those that, as observed ex post, CORFO has pursued. In a broad sense, the single most important actual objective has been industrialization, and in a more narrow one, the substitution of industrial imports, excluding production of producer durables.

In order to achieve these goals, CORFO resorted to "transitory socialism", which involved initial public ownership as an indispensable condition for removing specific bottlenecks, and was superceded by mixed or private ownership as the particular economic enterprises were emancipated, and reached maturity. Public ownership was not the sole instrument used, but definitely the single most powerful one. CORFO has thus reflected short-run socialism, even though socialism was a

condition for long-run nationalistic capitalism and private enterprise.

The "explicit" instruments employed by CORFO included receiving credit in developed nations, thereby acting as an intermediary so that such credit could reach domestic enterprises; engaging into basic research; and extending low-cost credit. Some of the instruments which it effectively used, although they do not figure explicitly, were inflationary credit received by the Central Bank through Government; large subsidies; and use of taxes originating from the Chilean North and mining sector to finance the investments of the industrial sector of the Center.

The life cycle of CORFO can be divided into three periods. The first one, which can be called the formative, started in 1939 and terminated in 1950.

It is the period of large-scale government ownership, during which, and especially until 1945, the activities are principally of exploratory nature and concentrate on research, project studies, and establishment of national accounts. Lack of trained personnel and statistical information prevented any serious work on planning. The activities of CORFO came to an actual standstill in the middle of the decade of the forties when one of its major sources of funds, namely mining taxes, dried up. During this period, but especially during the second half, were launched the steel, oil, and electricity industries. The economy prospered in spite of war shortages and the recessions of 1942 and 1947. The substitution of imports became a firmly established policy and inflation became a permanent characteristic of the economy.

The second period, which covers the years 1950-1960, was one of transition. By 1950, CORFO felt that its research concerning national accounts had reached a quality level that permitted a more direct and active interest in production plans. The Planning Department was created and, by 1959, both aggregate and sectoral development plans had been prepared. On the other hand, at the beginning of the decade mentioned, CORFO started transferring some of the enterprises it controlled to the private sector.¹ Once the steel industry had successfully proven its

¹ Although CORFO acquired funds in exchange for the shares it sold to the public, it lost through this exchange the most profitable enterprises and a major long-run source of income.

viability, it was turned over to private capital. In this epoch occurred, also, the important transition from the doctrines of unbalanced to the philosophy of balanced sectoral growth. The change came out of necessity. In effect, in the first years of this decade were exposed the previous "planning" errors. Mining had stagnated, agriculture grew slowly, and inflation reached alarming dimensions. Industry itself, which had been an important source of employment creation during the previous decade, started displaying excess capacity and, due to substantial productivity gains, added a negligible amount to employment. After all, steel, oil, and electricity, which absorbed a major share of investment, were very capital intensive industries. Severe balance of payments problems and stagnation of some sectors led to the "New Deal" Law which restored large-scale copper mining from a status of a "suppressed" sector to that of a sector receiving equal treatment. And, as part of the copper taxes were for the first time earmarked for the "mining" regions, an end was put to their up to then highly discriminatory treatment. Overall economic stagnation towards the end of this period created an ambiance propitious to major changes in CORFO, the country, and the constellation of political power during the next period.

The year 1960, when the third part of CORFO's life cycle started, marked the beginning of the "balanced growth" era. After more than twenty years of operation CORFO finally created the Gerencia Agrícola in view of the special importance that CORFO is attaching to said economic activity".¹ The country and CORFO also started receiving large economic assistance from the United States. Today, there exists hope that the Christian Democrats will finally lift the economy to a level of accelerated growth. How this would be achieved is, nevertheless, not clear yet.

¹Mimeographed review of CORFO's activities, 1964.

PART II

Financing Economic Development

CORFO has played a leading role as an institution financing economic development. The timing and rationale of its establishment led to immediate emphasis of its financial activities. In 1939, there existed a vacuum in the financial mechanism due to a shortage of institutions capable of financing long term investments. The urgent need to cure this deficiency led to the immediate transformation of CORFO, which had been endowed with capital and had as a function to promote long-term investment directly, into an institution responsible of financing economic development.¹

The financial activities of CORFO have included extension of credit both for working and investment capital; guaranteeing foreign loans to domestic enterprises; equity participation in both public and private enterprises; establishment of artificially low interest rates and favorable amortization, and so forth. In 1953, the Chilean Development Corporation absorbed the Tarapacá and Antofagasta Institutes,² thereby explicitly extending its financial activities to short-term and intermediate credits.³

As a financial institution, CORFO can be best described as a sui generis investment bank: it is an investment bank because it is

¹Even before CORFO specialized institutions provided generous and flexible short-term and intermediate credit facilities to the agricultural, mining, and manufacturing sectors. These institutions nevertheless, which included the Agricultural Credit Institute, the Industrial Credit Institute, the Mining and Industrial Development Institute of Tarapacá, the Mining and Industrial Credit Institute of Antofagasta, and the Agricultural Colonization Institute lacked the investment capital as well as the power to directly influence long-run growth.

²The Mining and Industrial Development Institute of Tarapacá and the Mining and Industrial Credit Institute of Antofagasta specialized in short and intermediate term credits to mining and industry.

³CORFO plays a vital role in the financial mechanism of the economy. This mechanism is composed of development institutions (such as CORFO), banking institutions, social security institutions, insurance companies, and security exchanges and institutions.

TABLE 2

Investment Funds, by Type of Source, of the
Chilean Development Corporation
 (Thousands of Escudos of Each Year)

<u>Year</u>	<u>State</u> <u>Contri-</u> <u>butions</u>	<u>External</u> <u>Credits</u>	<u>Income from</u> <u>own sources</u>	<u>Other</u> <u>Sources</u>	<u>Total</u> <u>Investments</u>
1939	105	---	---	---	73
1940	176	43	---	194	413
1941	239	101	---	147	487
1942	157	117	---	253	527
1943	148	215	---	144	507
1944	162	162	---	95	419
1945	199	70	3	179	383
1946	107	175	3	277	451
1947	466	127	7	---	562
1948	710	674	33	28	1,445
1949	726	1,299	84	46	2,155
1950	847	772	169	43	1,831
1951	1,232	511	509	163	2,415
1952	1,845	1,136	839	---	3,490
1953	2,362	1,404	1,282	---	4,799
1954	3,180	1,938	2,004	879	8,001
1955	5,842	4,299	5,293	166	15,600
1956	14,158	5,363	13,873	---	25,592
1957	10,275	7,838	20,696	4,619	43,428
1958	14,643	13,655	32,738	8,516	69,562
1959	33,123	6,731	40,536	---	80,290
1960	42,930	6,766	21,616(-)	---	71,312
1961	56,910	n.a.	n.a.	n.a.	n.a.
1962	68,296	n.a.	n.a.	n.a.	n.a.
1963	87,327	n.a.	n.a.	n.a.	n.a.

(-) Provisional figure.

n.a. Not available

Notes: The majority of the tables included in the present paper were originally expressed in millions of pesos, the currency that was replaced in 1959 by the escudo on a 1000:1 basis.

Source: Department of Finance, CORFO.

the institution specializing in financing and undertaking long-term investment; and it is sui generis for two major reasons: because it is run as a non-profit organization and because it dispenses its vast resources without applying the rules of traditional, profit motivated investment banks. Furthermore, for its financial activities it has been receiving from government yearly capital contributions, has been borrowing from foreign institutions and individuals, and has also utilized the income it derived from its own financial, investment, and other economic activities; but it has not floated its own liabilities, created species or accepted deposits. These various types of funds are presented in Table 2.

To understand CORFO as a financial institution it is necessary to examine two basic facets of this organization. The first involves a description of the sources of funds at its disposition, which constitutes the theme of the present section. The second includes a description of its investment activities and forms part of the third section.

1. State Contributions

Since it was a governmental instrument in industrializing the economy, CORFO received a generous share of the funds available to the public sector each year. State funds were contributed in national currency and dollars. Normally, the first were destined for domestic expenditures; the second served to facilitate amortization of liabilities in dollars and the purchase of imported capital goods. The level of the latter depended on the dollar taxes paid by the Gran Minería which were explicitly earmarked for CORFO, on the non-earmarked dollar tax proceeds of the general government, and on the dollar needs of CORFO, as compared to those of other government agencies.

Until 1946, state funds were regularly earmarked for Development, Investment, and Housing, and sporadically again in 1956 and 1958. The table that follows contains information concerning the use of these contributions. Development funds are reserved for administrative expenses, costs of research, scholarship grants and, most important, the

TABLE 3

Distribution of Government Contributions by Objectives
(In Thousands of Escudos of Each Year)

<u>Year</u>	<u>Development</u>	<u>Investment</u>	<u>Housing</u>	<u>Total</u>
	<u>A</u>	<u>B</u>	<u>C</u>	<u>A+B+C = D</u>
1939	1.6	78.4	25.0	105.0
1940	2.7	133.0	40.0	175.7
1941	3.4	184.6	52.7	240.7
1942	2.9	148.8	3.5	155.2
1943	4.3	123.9	20.0	149.3
1944	21.3	151.6	---	172.9
1945	4.0	195.0	5.0	204.1
1946	0.6	91.8	2.0	94.4
1947	3.0	465.9	---	462.8
1948	1.6	707.0	---	705.4
1949	3.3	721.3	---	724.6
1950	---	860.3	---	860.3
1951	---	1,390.0	---	1,390.3
1952	---	1,622.9	---	1,622.9
1953	60.8	2,492.5	---	2,553.3
1954	75.0	4,523.3	---	4,598.3
1955	74.0	4,350.8	---	4,424.9
1956	119.1	5,232.2	16.0	5,367.3
1957	752.7	14,969.5	---	15,722.2
1958	78.5	16,743.9	23.5	16,845.9
1959	---	33,009.0	14.0	33,023.0
1960	---	42,878.8	51.2	42,930.0
1961	8,730.0	48,180.0	---	56,910.0
1962	13,260.0	55,036.0	---	68,296.0
1963	15,432.0	71,895.0	---	87,327.0

Source: Department of Finance of CORFO.

servicing of the foreign debt. Investment funds¹ comprise the actual investment expenditures and include direct investments, as reflected in stock holdings, and loans. As revealed by Table 3, investment funds absorbed the major share of the appropriations. The investment activities in housing have been only incidental and occurred in the early years - 1939-1943 - in connection with the earthquake-induced housing program, and in the 1956-1960 period, when the price stabilization policy reduced severely construction activities. In both instances, it reflected a temporary, emergency activity.

A far more important classification of the government's contributions, from the point of view of the relation between the activities of CORFO and income growth, is obtained if we use as a criterion their primary source. Then, three major categories are distinguished. First, contributions originating from taxes levied specifically to finance CORFO's activities; second, general contributions from tax receipts not earmarked for CORFO; and, finally, contributions made possible by credits of the Central Bank of Chile extended to government and transferred to CORFO.

The taxes assigned specifically to finance the activities of CORFO have been imposed almost exclusively on the Gran Minería. They are classified into two groups: the taxes of the first group accrue to the general budget of CORFO and may be used as it chooses without any "strings attached". The 15 per cent tax on the normal profits of the large-scale copper mines is an example of this class of contributions. It was imposed in 1942 on the difference between an assumed cost of production (which included a fair rate of return) and the actual cost of production; this tax was allocated to CORFO. The proceeds from this tax diminished rapidly from 167 million pesos in 1942 to 34 million in 1947, as the actual cost of production approached the legally fixed assumed cost.² These copper taxes contributed to a transfer of resources

¹The Spanish term for "Investment" expenditures has been "Realización", which has been translated into English by CORFO and others to the equally vague term "Fulfillment".

²For details see K. H. Silvert, "The Chilean Development Corporation". Unpublished Ph.D. Thesis, Tulane University, pp. 86-91.

TABLE 4

Classification of Government Contributions to CORFO

(in thousands of escudos of each year)

<u>Year</u>	<u>Total Contributions as per Budgets</u>	<u>Debit Entries to State Contributions</u>	<u>Copper Law Funds (Laws 10255 and 11828)</u>	<u>Actual Contributions including Copper Funds</u>	<u>Total Annual Cumulative State Contributions</u>
1939	105.0	----	----	105.0	575.9
1940	175.7	----	----	175.7	280.7
1941	240.7	----	----	240.7	521.4
1942	155.2	----	----	152.2	676.6
1943	149.3	----	----	149.3	825.9
1944	172.9	----	----	172.9	998.9
1945	204.0	----	----	204.1	1,202.9
1946	94.3	----	----	94.3	1,297.3
1947	462.8	----	----	462.8	1,760.1
1948	705.4	----	----	705.4	2,465.6
1949	724.6	----	----	724.6	3,190.2
1950	860.3	----	----	860.3	4,050.5
1951	1,390.3	26.5	----	1,363.8	5,440.9
1952	1,622.9	----	70.5	1,693.5	7,063.8
1953	2,553.2	----	267.2	2,820.4	9,617.1
1954	4,598.3	87.9	300.6	4,811.1	14,215.4
1955	4,424.9	781.3	1,624.3	5,267.8	18,640.4
1956	5,367.3	3,040.6	2,720.8	5,047.5	24,007.7
1957	15,722.2	2,606.0	2,396.3	15,512.6	39,729.9
1958	16,845.9	4,117.7	1,367.2	14,095.5	56,575.9
1959	n.a.	n.a.	n.a.	n.a.	n.a.
1960	n.a.	n.a.	n.a.	n.a.	n.a.
1961	n.a.	n.a.	6,408.2	n.a.	n.a.
1962	n.a.	n.a.	5,406.2	n.a.	n.a.
1963	n.a.	n.a.	8,482.0	n.a.	n.a.
1964	n.a.	n.a.	n.a.	n.a.	n.a.

n.a. = Not available

Note: The various figures do not necessarily add up exactly to the total because of rounding of the figures.

Source: Department of Finance of CORFO.

from the highly productive mining sector to industry in particular. They also led to a resource transfer from the mining North and O'Higgins province to the Center of Chile.

The "copper funds" transferred to CORFO were used predominantly for investment but, unfortunately, reflected only a small fraction of taxes paid by the large American-owned copper mining concerns to the Chilean government. The other part of the resources which were transferred to the Center through the taxation mechanism were used mainly to cover current expenditures, and thus for consumption.

A second group of taxes destined for CORFO had "strings attached". Well known, in this respect, is the tax that has led to the so-called Copper Law Funds (Laws 10255 and 11828), shown on table 4. These formed an integral part of the "New Deal" Legislation enacted in 1955 to give a "fair" treatment to the stagnant, foreign-owned mining.

The legislators believed that mining was subject to highly discriminatory treatment, to which its stagnation was being attributed, and also that the unbalanced preoccupation of government with industry, at the expense of mining, was matched by an inequitable participation of the Center in the fiscal revenues to the detriment of the North and the O'Higgins province. It was thus prescribed that, starting in 1952, a fraction of copper proceeds would have to be spent in the major copper producing provinces of Tarapacá, Antofagasta and O'Higgins. The more equitable treatment of copper was thus accompanied by a balanced geographical allocation of tax revenues.

As already mentioned, the fiscal contributions reflected tax revenues only partially. A significant portion corresponded to the use of credit received by the Government from the Central Bank. It has been impossible to obtain a quantitative measurement of this inflationary credit. The reallocation of resources achieved by means of "inflation" can be viewed, however, both within the public versus private expenditures framework, as well as within the framework of investment versus consumption. The impact of such credit and of CORFO's activities on the relation between public and private use of resources is clear. The former received a substantial stimulus and increased. The picture is less clear with respect to the influence of the use of the Central Bank credit by CORFO on the relative importance of investment and consumption. The share of public investment in total investment rose, but there is no

evidence that this was accompanied by an increase in the share of investment in national product. Government intervention may have possibly contributed to higher consumption in the short run. The bidding away of skilled labor, usually in short supply, from the private sector, raised its price to extraordinarily high levels for Chile. Within the public sector, high real salaries, especially in semi-autonomous institutions, diminished the share that government, in a broad sense, could allocate on capital expenditures. Furthermore, a high level of current consumption expenditures of the public sector became feasible over time only as long as the inflationary credit supported the real income of government employees.

The social revolution that has elevated Chilean white collar workers to the special status they enjoy now had preceded the creation of CORFO but has been also reinforced by it. In the majority of countries, inflationary finance has signalled a sudden and unexpected misery of the middle classes, and, especially, the public servants. In Chile, to the contrary, inflation has markedly improved their economic status in absolute terms as well as relative to other income groups.

2. Foreign Credits

The most complete information available concerning the financial activities of CORFO relates to foreign credits received, which form its second source of funds. The statistics of the year-to-year volume of foreign credits received and utilized over the last twenty-five years appear in the table that follows.

Foreign credits have been substantial and have contributed towards the economic development of the country. They have been applied to the financing of producing steel, electricity, cellulose, coal, sugar and so forth; to road building and irrigation projects; to improvement of agriculture, and to transportation of materials for railways and public transport.

In order to obtain these funds, CORFO has acted predominantly on a State-to-State and State-to-International Agencies level. Thus, the majority of these credits have been subscribed with the Export and Import Bank (Eximbank); the International Bank for Reconstruction and

TABLE 5

Foreign Credits Received and Utilized by CORFO, 1940-1963

(In U.S. dollars)

Year	Credits Received	Part of these Credits Utilized	Amortization
1939	US\$ ----	----	
1940	12,500,000	1,559,300	n.a.
1941	300,000	3,099,500	n.a.
1942	5,300,000	4,100,100	----
1943	5,350,000	7,344,800	n.a.
1944	6,454,000	5,350,000	n.a.
1945	33,354,000	2,300,800	n.a.
1946	6,649,800	5,549,700	n.a.
1947	6,684,500	4,074,000	n.a.
1948	17,465,300	18,615,200	n.a.
1949	23,915,600	35,115,100	n.a.
1950	28,829,800	39,342,200	n.a.
1951	19,527,700	8,460,600	n.a.
1952	7,309,300	16,973,000	n.a.
1953	31,286,000	18,005,700	n.a.
1954	27,536,100	19,244,400	n.a.
1955	13,415,700	28,096,600	n.a.
1956	20,090,500	15,278,400	n.a.
1957	31,388,500	12,058,600	n.a.
1958	1,329,756	17,031,207	n.a.
1959	32,961,300	7,034,100	10,525,000
1960	883,000	6,848,500	5,602,700
1961	7,460,500	9,635,200	6,254,400
1962	70,459,600	37,385,400	7,611,700
1963	31,719,500	44,305,600	13,691,500
	435,920,466	366,818,007	202,722,300

n.a. = Not available.

Note: The balance to be amortized was \$232 million on December 31, 1963.

Source: Finance Department of CORFO.

Development (I.B.R.D.); the Interamerican Bank (B.I.D.) and the Italian Emigration Institute (ICLE); and the Agency for International Development (AID).

Furthermore, it has received credit from private suppliers it had contracted. Surprisingly, their majority has been Europeans and only a few from the United States.

The marked dependence of CORFO on foreign credit was something natural for Chile. Since government was reluctant to impose onerous taxes on other sectors than foreign-owned mining, and since it explicitly desired to control inflation, foreign credit was converted into an instrument of last resort. Furthermore, the false argument that inadequate national saving was responsible for Chile's poverty has provided a permanent excuse for asking credit from the rich nations.

The activities of CORFO as an intermediary between foreign creditors and domestic borrowers provide some fascinating insights into the process of international financial intermediation and the relationship between international and domestic financing.

The most striking aspect of the financial activities with foreign creditors is that they introduced a radical change into the normally "accepted" procedures of investment financing, and in the policy which CORFO was originally, legally or otherwise, expected to pursue.

Implicitly, but unmistakably, CORFO converted the "hard" foreign currency loans to enterprises or agencies, into domestic "soft" loans. This "policy" was the consequence of two events. With rampant inflation and with CORFO lending without a dollar or other escalator clause, only a fraction of the real value of these loans has ever been repayed by the recipient enterprises.¹

In theory, and also legally, it was supposed that CORFO would act as an intermediary between the foreign international financial

¹ But even when a dollar clause was introduced, as it did in many cases after 1960, repayments were highly irregular and rarely, if ever, insisted upon by the Corporation. Thus, even though price stability might have reduced many problems, there exists no proof that it would have prevented CORFO from turning hard loans into soft ones.

Distribution of Foreign Credits Received by CORFO, According to Source.
(June 30, 1964, Provisional Figures in US\$)

Origin	Amount of Credits US\$	Utilization	Unutilized Balance	Amortization US\$	Balance to be Amortized
Eximbank	128,767,000	128,767,000	----	83,288,991	45,478,008 ⁽¹⁾
International Bank	130,154,456	81,296,238	48,858,217	22,426,000	107,728,456
Interamerican Bank	28,790,000	12,515,843	16,274,156	494,098	28,295,901
ICLE	1,201,510	1,201,510	----	772,386	429,123
AID	40,000,000	40,000,000	----	----	40,000,000
Suppliers	103,287,700	98,328,200	4,959,500	89,135,100	14,152,600
US\$	432,200,666 ⁽²⁾	362,108,791	70,091,874	196,116,575	236,048,090 ⁽³⁾

Interamerican Bank E ^o	3,337,241	2,267,209	1,070,032	142,780	3,194,460
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Notes: To obtain the balance of credits to be repayed on the 1^o.7.64, the column "Unutilized Balance" should be deducted from the column "Balance to be Amortized".

(1) Does not include ESANI (N^o 809).

(2) A detailed breakdown of credits received, utilized, and amortized by CORFO exists for 1962 and 1963. In 1962, CORFO received a credit of \$40 million from A.I.D. which was channelled to the following institutions: The Society for the Construction of Hospital Establishments, the National Electricity Company, State Railways, the Society for the Construction of Educational Establishments, the Housing Corporation, Office of Irrigation (Ministry of Public Works), the Office of Architecture, Office of Sanitary Works (Ministry of Public Works), the National Mining Company (ENAMI) and CORFO. The Corporation was thus acting as an intermediary between the United States Government and a wide range of public and semi-public institutions.

(3) The minor discrepancy between the figures of the sum totals of this table and of table 5 is the result of the slightly more limited coverage of foreign credits of the present table.

Source: Finance Section of CORFO.

institutions and national enterprises in a way that the terms introduced in the transaction would be binding to both sides. In practice, CORFO was converted into an institution coordinating two separate actions of Government. The first of these consisted in obtaining repayable credits in hard currency from foreign creditors and, the second, in using hard currency income of the Government to service and repay its own debts to foreigners.

A double standard was introduced: one set of rules applied to the international aspect of a financial transaction, and another applied to the domestic aspect of the same transaction. The first was valid de jure, while the second set of rules was established de facto.

The first set of rules, which is evident in the international transactions of CORFO, made the recipient enterprise directly and the Corporation indirectly liable for the loan. It was stipulated that the loan was both to be made and be repaid in hard currency. Many of these loans have been already repayed, but the recipient enterprise has never contributed more than a fraction to the repayments, with government taking charge of the rest. In view of the fact that payments have been made it can be said that CORFO has complied with the first set of rules; however, these same rules were violated by the fact that a third party, namely government, rather than the recipients made these payments. As an example, credits authorized by Eximbank to landowners for the purchase of agricultural machinery, and to ENDESA (National Electricity Company) to import electrical machinery constituted legally an obligation of CORFO or ENDESA but in reality were converted into a Government liability, as they were paid by Government and only on rare occasions constituted a direct and real liability of the actual beneficiaries.

A second set of rules was developed by CORFO. It covered the domestic aspect of CORFO's financial transactions and both contradicted and violated the original set of rules. The recipient enterprise was not required to repay at all the international loan in dollars or in dollar-equivalent funds. Furthermore, the domestic "softness" of the external "hard" loan had a second angle. The recipient enterprise was not required to repay the loan even in local currency, in part or in toto, and such lack of payment never brought along bankruptcy or any similar punishment. It was also true that CORFO had no obligation to

repay such foreign debts by drawing on its own resources. Payment of CORFO's foreign debts has had little or no connection with the solvency, profitability, or success of the debtor enterprise and has been related strictly to the government's ability to acquire directly (through copper taxation) or indirectly (through the Central Bank and international borrowing) sufficient foreign exchange to service its debts.

Two successive transformations were performed by means of CORFO's financial intermediation. According to the first, a hard loan to an enterprise, where hardness reflected both the repayment requirement and the dollar nature of the loan, was transformed into a soft loan to an enterprise without the two requirements of "hardness". The second transformation, which was "parallel in reverse" and at least as fascinating as the first, reconverted the soft loan into a hard one by turning it into a dollar liability of the country.

This dual transformation process was carried on by CORFO up to the point where these "artificially created" dollar liabilities of the government and the country could not be serviced any more either through dollar tax revenues or current dollar earnings delivered to the Central Bank. Chile reached a period of crisis during 1960-1962 and only the timely arrival of American aid prevented an external financial catastrophe.

The implications of the mechanism that emerged have been pervasive. The individual investments sponsored by CORFO have been consistently judged financially sound by the foreign financial circles involved; officially, because their approval followed careful scrutiny and analysis of the individual plans submitted; in reality, because government had guaranteed and, as experience revealed, paid for these liabilities through the Corporation.

This anomaly, by means of which the burden of a firm was converted into a burden of the whole economy, existed irrespectively of the nature of the investment of CORFO as one in debt or in equity, as long as the resources used by CORFO to repay these dollar liabilities originated from sources other than the individual enterprises concerned. It is certain that CORFO incurred an immediate loss only in those instances where investments were made in debt liabilities of enterprises, vulnerable to inflation. Lack of a dollar clause implied a subsidy to

the debtor equal to the difference between the dollar value of the investment plus the cost of servicing and the real burden of the debt to the individual, as determined by the rate of price increase and the money rate of interest. But even when equity investment was involved, the protection may have been a spurious one, since the profitability of the enterprise in relation to the capital market conditions did not permit CORFO to recover its investment by means of sale of the equity.

In this financial framework it is impossible to measure the success of foreign credits. The claim of CORFO that its own success can be measured by its excellent repayment record is unfounded, as it actually has had no relation with the success of the recipient enterprises. To the contrary, the poor financial record of the recipients, as witnessed by their own limited repayments, suggests that a misallocation of resources is likely to have occurred. Foreign creditors contributed to the establishment of these new rules of game, which ultimately could lead to a reduced ability of the economy to repay individual debts, by showing no interest in who paid, as long as debts were paid.

Still, CORFO contributed to Chilean growth by means of additional, less spectacular financial and related activities. In negotiating foreign credits, CORFO adopted a sound policy of purchasing capital goods. Furthermore, it must be acknowledged that CORFO established a favorable climate for foreign credits and foreign investments, especially in the field of manufacturing. In this respect, its New York office has performed in a commendable manner in support of this policy.

Another apparent contribution of CORFO lies in its ability to obtain low cost foreign credits. All credits carried interest payments, with credits by the Eximbank having the lowest charges (3% - 4%) and those by the European suppliers the highest (6% - 7%). What or how much the net gain has been to the economy has been impossible to estimate.

Interest rates on foreign credits have been reduced as a result of the direct guarantees by CORFO and the indirect ones by Governments; this cost reduction may have been fictitious insofar as it emanated from a government induced resource allocation that has been inferior to the allocation that would have taken place without such government intervention and, which is most likely, at higher interest costs on foreign credits. To the extent that the loss of real income, as a result of the intervention by CORFO and an induced resource misallocation, exceeded

the economy's gain from lower interest rates, the contribution of CORFO may be exaggerated due to the association of low cost of borrowing with an inferior allocation of resources.

Even though this may appear surprising, by obtaining foreign credits, CORFO accentuated inflationary pressures through what may be called the complementarity effect of foreign credits. In most instances an investment project had a dollar (foreign credit), a peso (domestic credit) component. Once foreign credit was obtained, the complementary need for domestic resources forced CORFO to resort to the Central Bank for the domestic expenditures component of the investment. This complementary credit was given by the Central Bank to CORFO throughout this period, but especially during the first fifteen years. This credit directly contributed to inflation, especially if it is considered that these projects reached fruition after some years.

As already mentioned, once in the possession of funds, CORFO administered a credit-cum-subsidy program that had a highly unequal impact upon sectors and enterprises. Subsidies were highest in the case of loans in national currency and lowest when CORFO controlled the equity. Whenever the debtor was an enterprise owned by CORFO the gain from the subsidy accrued, ex ante, to all factors of production employed by the public sector. However, most frequently, those who gained most were labor and, in particular, white collar workers. This view is supported by the zero profit margins and negligible reinvestment levels by ENDESA¹ and most other government owned enterprises. In such instances the subsidy program resulted in real wages and salaries in the public enterprises exceeding productivity levels.² These subsidies became evident in later

¹This picture has partially changed in recent years. As it is shown later in the discussion of ENDESA (electricity company) profit rates have been positive in recent years.

²Real wages and salaries exceeding productivity levels, a phenomenon quite prevalent in CORFO-financed enterprises, had an inflationary impact also through the cost-push mechanism. These artificially high wages exerted a pull on wages in the rest of the industry or other sectors: the CORFO enterprise acted as a "wage leader". The induced demand for higher wages and salaries by the employees of the non-CORFO industries led to a higher demand for credit, in order to cover increased costs, and to higher prices in order to absorb increasing costs (cost-push).

years, when the real value of the effective payments to CORFO fell short of what it would have been without inflation.

This subsidy program had two effects, one being strongly inflationary. By reducing the real value of outstanding credits of CORFO, it impoverished it by the amount of the subsidy; it diminished the relative significance of "recuperations" as a source of future investment funds and increased the direct dependence of CORFO on government for financial support and its indirect dependence on the Central Bank. Whenever it involved foreign credits, it made necessary to burden either the mining sector or the economy as a whole with additional taxes destined for the amortization of the dollar debt by the magnitude of the subsidy. This additional taxation was necessary even whenever CORFO controlled the equity. Repayments of foreign debts were also made by obtaining additional credits abroad.

The Development Corporation was established, in part, to increase the domestic availability of commodities. More specifically, it aimed at raising the feasibility of investment by augmenting the availability of producers durables. This goal was only partially achieved because net foreign credits by CORFO have not been very large. Instances have been recorded when CORFO had started making amortization payments before having made use of the credit at all. Net foreign credits were ample during the first ten years, declined during the middle of the decade of the fifties, and rose in the early sixties.

The presence of foreign credits to CORFO did, nevertheless, establish an investment priority system. The industries, whether private or public, that were receiving CORFO-guaranteed foreign credits were able to proceed with their investment plans. Furthermore, during later years, these same industries were able to use scarce foreign exchange resources to service, maintain and expand these investments.

Foreign credits permitted the recipients to obtain the scarce dollars of the country through the back door. First, without using export earned dollars, they imported capital goods, but subsequently obtained "hard" export-earned dollars through the simple means of presenting to the authorities the bills for interest and amortization. Since the "maintenance" of any new industry depended on continuous future imports of capital goods, its establishment reduced the dollar reserves

available for other sectors both because of its dollar amortization payments as well as a result of payments for the replacement of capital goods. The dollar funds that were left over after these operations were then distributed (rationed) among public and private investors. CORFO gave a preferential treatment to the enterprises it patronized, but diminished the investment feasibility for those left at the margin of the favored group, to which normally belonged the small private enterprises and small investors.

In all its functions, the Development Corporation was a favored autonomous organization that aimed at, but rarely applied, the rules of private enterprise. A spectacular case of violation of these rules, and of inefficiency as well, is found by examining its treatment of interest costs. In effect, such costs on foreign credits have never been known even to the Corporation (no time series are available), they were up to recently not included in calculating Chile's foreign debt for any future year, and were of little interest to the Development Corporation's Finance Department.¹ The contributions by government, which are not repaid and do not earn interest, and foreign credits have been treated as if they were of the same nature. In both, the cost of servicing is completely ignored (and, in most instances, CORFO does not repay either one). Government contributions are treated as "free goods" even though their social opportunity cost has been positive. During this period it can be said that major segments of the private sector have literally "starved" from lack of credit and capital goods.

3. Revenues Originating from Own Sources

The third source of funds can be denominated "recuperations".² It includes moneys received from commissions, interest on and amortization of loans, sales of stocks, dividends on equity investment, sales of machinery, and so forth. As indicated by the last column of the following table, recuperations became an important source of funds in

¹They argue that "what is important is the total debt not the cost of servicing it".

²K. H. Silvert, op. cit., p. 91.

TABLE 7
Income From Own Sources
(In Thousands of Escudos of Each Year)

Year	Commissions	Dividends	Interest	Commission for Inspection of Loans	Sundry Receipts Housing Funds	Subtotals	Sale of Agricultural of Other Machinery
1939	----	----	0.3	----	----	0.3	----
1940	1.0	----	5.8	----	0.8	7.6	----
1941	0.2	0.4	8.4	----	14.9	24.1	9.9
1942	0.2	5.3	23.3	----	3.6	32.3	5.5
1943	1.3	5.9	26.9	----	4.1	38.2	2.7
1944	1.2	8.1	25.8	----	16.7	51.9	2.5
1945	0.6	13.5	21.1	----	19.1	54.4	1.7
1946	----	11.2	28.9	----	11.4	51.6	4.3
1947	0.6	13.7	42.3	----	5.0	61.8	4.2
1948	1.3	15.5	56.3	----	5.9	79.1	8.6
1949	1.3	20.1	18.9	----	25.2	65.5	25.5
1950	1.7	29.6	25.0	----	100.7	156.2	31.5
1951	1.1	88.2	82.5	0.1	30.7	202.7	15.5
1952	1.4	63.6	73.9	0.5	12.1	151.6	37.7
1953	2.4	112.6	79.6	0.5	16.5	211.7	25.3
1954	4.9	159.4	161.5	0.8	10.9	337.6	80.9
1955	10.7	227.6	353.9	0.8	24.1	617.2	265.9
1956	11.9	252.3	429.8	3.7	9.6	707.4	317.5
1957*	2.9	454.8	449.4	4.6	99.8	1,011.6	94.9
1958**	17.7	659.4	542.4	2.6	124.4	1,346.5	150.1
1959	----	2,423.6	694.4	----	21.9	----	----
1960	----	2,832.0	1,612.5	----	30.8	----	----
1961	----	354.4	814.7	----	----	----	----
1962	----	4,340.1	2,141.4	----	----	----	----
1963	----	4,036.9	4,783.1	----	----	----	----

* Figures shown for 1957 correspond to receipts of the first semester only.

** Figures shown for 1958 correspond to those of the second semester 1957 and the first 1958.

TABLE 7 (continued)

Year	Sales and Insurance Commercial Section	Profits of Companies and Sale of Securities	Profits of Refrigrating Plants Section	Exchanges	Income of New York Office	S U M M A R Y	
						In escudos of each Year	In escudos of the first Semester of 1957
1939	----	----	----	3.9	----	4.2	250.5
1940	----	----	----	5.3	----	12.9	683.2
1941	----	----	----	25.9	0.9	60.8	2,764.2
1942	4.8	----	----	32.9	1.1	76.7	2,474.4
1943	10.0	- 8.1	----	44.9	2.1	106.1	3,119.9
1944	23.4	3.5	----	43.1	2.6	127.0	3,629.4
1945	1.1	8.0	----	52.2	1.6	119.2	3,220.9
1946	2.2	1.9	----	47.2	1.8	180.9	2,534.4
1947	2.5	28.9	----	2.2	7.1	106.8	1,941.8
1948	1.3	35.1	----	-----	-----	123.9	1,966.5
1949	1.1	11.0	0.7	8.5	-----	112.4	1,561.0
1950	0.1	----	----	-----	-----	188.0	2,210.8
1951	0.5	----	----	0.2	-----	219.0	1,972.9
1952	0.5	1.3	5.9	4.9	-----	201.8	1,473.1
1953	1.2	186.8	0.3	-----	-----	425.4	2,517.2
1954	3.1	203.5	2.0	-----	-----	627.1	2,366.6
1955	8.2	158.8	0.3	47.5	-----	1,097.8	2,345.8
1956	9.8	1,480.7	-----	2,593.5	42.3	5,151.1	6,715.9
1957*	7.0	354.1	-----	924.4	- 13.4	2,378.6	2,421.7
1958**	1.8	4,573.5	-----	704.8	29.6	-----	-----
1959	-----	-----	-----	-----	-----	-----	-----
1960	-----	-----	-----	-----	-----	-----	-----
1961	-----	-----	-----	-----	-----	-----	-----
1962	-----	-----	-----	-----	-----	-----	-----
1963	-----	-----	-----	-----	-----	-----	-----

* Figures shown for 1957 correspond to receipts of the first semester only.

** Figures shown for 1958 correspond to those of the second semester 1957 and the first 1958.

Source: Finance Department of the Chilean Development Corporation (CORFO).

1941 and maintained their importance in later years. In 1951, recuperations amounted to 20 per cent of investment funds, and in 1959 their percentage contribution had increased to 40 per cent. The three major components were dividends, interest, and profits of companies and sale of securities.

Dividends constituted the single most important source of these "own" funds. CORFO has forfeited its right to dividends payable whenever the debtor enterprise was engaged in an investment program that was so large that it required, in addition to its internal funds, major contributions by CORFO itself. The National Electricity Company (ENDESA), for example, has not transferred dividends to CORFO even though it pays on its privately-owned shares.

Interest payments constituted the first source of funds, especially since CORFO in the first years provided assistance primarily in the form of loans. It has been also an important source of funds in spite of the low interest rates charged and inflation, and would have been far larger had the credit program of CORFO not been to a large extent a subsidy program.

Receipts from sales of stocks fluctuated in a will-o-the-wisp fashion as CORFO decided erratically to sell securities. Equity sales were prompted partly by conviction and partly by necessity. A latent desire to transfer control and ownership of successful enterprises to the private sector offered the philosophical justification for selling equity. The smallness of the capital market, however, presented an obstacle, especially when large equity sales were contemplated. The urgent need to obtain funds, which was created in the middle of the first and second decades, as a consequence of the diminution in copper taxes in 1945, and, subsequently in 1956, as a result of the anti-inflationary measures adopted because of the recommendations of the Klein-Sacks mission, obliged CORFO to obtain funds by means of sales of part of its equity holdings. In agreement with Silvert,¹ we believe that what CORFO calls "profits" can be described more precisely as a "surplus". Both CORFO, as well as the majority of its subsidiary enterprises lack the information

¹K. H. Silvert, op. cit., pp. 92-93.

needed to make an objective estimate of the real value of profits. Their complicated finances and inflation make such an attempt a herculean task.

The Development Corporation has been a financier only in the narrow sense of providing funds for investment projects; and not in the more general sense of financing the most (or more) profitable projects, of aiming at a normal or minimum rate of return on its "capital", or even of aiming to recover capital extended. It can be said that such a behavior pattern did not violate any of its principles, but rather formulated them. CORFO has attempted, without success, to use objective and rational criteria in its financial activities with private and public corporations. However, the pressures, either from inside the same corporation or from outside, in support of the use of objective criteria, have not been as yet strong enough, if they have existed at all.

PART III

Investment and Investment Criteria

The second tool employed by CORFO to promote growth and alleviate the balance of payments disequilibrium has been its investment policy. There exists no institution, either before or after the creation of CORFO, which has directly controlled or indirectly affected so high a percentage of the country's investment in producer durables as did CORFO. During ten years, of the period 1940-1954, this percentage exceeded thirty per cent, and in five years, it was larger than forty per cent of the investments in machinery and equipment.

The investment criteria adopted by CORFO can be divided into explicit, implicit, and actual. The table inserted in continuation presents the principal criteria in each category.

Explicit criteria are defined to be those stated in the legal documents concerning CORFO. Implicit criteria are defined to be those which, for an economist, underpin the explicit ones. Finally, **actual criteria are** those that have been in effect used by CORFO in choosing among alternative investments. Even though there exists a correspondence between the explicit and implicit, in that the latter attempt to make the

first ones more "explicit", there is no reason why the actual ones should be identified with either the explicit or the implicit ones. The first two sets describe the intentions of CORFO, while the last one refers to its actions. The real or actual criteria are revealed by the investment decisions.

Investment Criteria of CORFO

Explicit	Implicit	Actual
Standard of living criterion.	Social rate of return criterion.	Import substitution criterion.
Balance of payments criterion.	Foreign exchange criterion.	Import substitution in power, raw materials intermediate goods.
		Capital intensity.

The explicit criteria utilized in establishing CORFO and the criteria which CORFO was directed to use are those of a higher level of living and a balance of payments equilibrium. They appeared for the first time in the organic law, in which it was established that CORFO's objectives were ". . . to elevate the standard of living of the population and to improve the situation of the balance of international payments".¹

These legal criteria are vague, especially the first of them. It could be said that the social rate of return and the foreign exchange criteria are their underlying components. Since practically any investment raises the standard of living, the problem consisted in determining which was the investment that contributed most to the income increase. In trying to solve this problem, the decisions reached by CORFO developed a rule of thumb giving birth to a "new", and specific criterion: that of import-substitution.

The roots of the import-substitution criterion are found as part of the vague description of the additional objectives of CORFO, namely

¹Law 6440, Article 250, Letter a.

". . . .to aid the manufacturing industry within the country . . ."

"To propose and aid the adoption of means destined to augment the consumption of national products or to obtain a greater participation of Chilean interests in industrial and commercial activities."¹ Even so, in 1939, there existed little evidence that import substitution would be converted into the single most powerful instrument in the government's development policy for more than two decades and that it would control the investment process and resource allocation as well.

In practice, the standard-of-living and balance-of-payments criteria were considered as satisfied if an investment saved foreign exchange by reducing imports through competitive domestic production. The organic law passed over the possibility of promoting growth and gaining foreign exchange by means of an export-promotion policy. This alternative was wishfully mentioned at the end of the decade of the fifties, but has yet to be pursued. Neglect and omission of trade reflected a long tradition of trade aversion and the post-depression feeling that not only raw materials exports but also the export sector as a whole could not be trusted either to stimulate or supply the foreign exchange necessary for growth.

The projects approved on the basis of the import substitution criterion can be grouped into three major categories: first, those that contributed to import substitution in the final stages of the value adding process, such as consumer goods manufacturing. The respective investments shifted the import needs of the country from the final consumer goods to the intermediate, raw material, fuel, and capital goods categories and increased foreign exchange requirements for these groups; in the second category fell the projects leading to domestic production of fuels and raw materials, including steel, oil and electricity, which increased the demand for capital goods imports but saved foreign exchange by reducing the country's need for raw materials, fuel and intermediate products; finally, the third category of projects included production of capital goods, in particular producer durables, and normally constituted the ultimate step of an import substitution leading to complete vertical "integration" and incorporation of industries to the domestic economy. These usually saved foreign exchange by reducing demand for

¹Ibid., Article 25, d and e.

capital goods imports, especially if they produced machinery to be used to produce further machinery.

Indirectly, the organic law of CORFO had excluded an import substitution effort only insofar as it referred to production of capital goods.¹ By declaring explicitly and specifically that CORFO will aid ". . . .d: the importation of machines and other elements of production," it indirectly placed the effort of import substitution on the two preceding categories. Since neither the level of income nor the degree of industrialization provided a large enough market for the production of producer durables, and technical know-how for such ventures is domestically missing, the decision of CORFO was rational. Today, the producer durables sector is negligible, and in relative terms, not much larger than what it was in the terminal years of the decade of the thirties.

In the other two categories import substitution was advocated and extensively implemented. Its effectiveness and success are eloquently illustrated by the unquestionable establishment of domestic-oriented industry as the most important growth sector which, after a continuous and substantial dose of assistance has performed as desired and expected, namely, better than any other sector.

Final consumer goods are being produced today in a quantity and variety that compare very favorably with those of 1939. Expansion of this sector was achieved without substantial direct public investment. Import substitution was invited by such indirect stimuli as import quotas, tariffs, tax exemptions, easy credit and capital goods import licensing and so forth. With the exception of few occasions and for short periods, the need for direct government participation did not arise, since these were ventures where risk in expanding old or creating new enterprises was relatively low, capital requirements were within the reach of the private sector, and where private enterprise had already been successful. The actual response vindicates the view that the stimuli offered would be adequate. Even so, government investment has not been negligible and has entered more risky or complicated ventures as, for example, the sugar beet industry, milk processing, paper manufacturing and construction of hotels for tourism.

The investments of CORFO and government have been more extensive and direct in the sectors of electric energy, raw materials and

¹Capital goods are understood here to mean machinery and equipment and not construction.

TABLE 8

Investment in Contributions and Loans
(in thousands of escudos)

YEAR	ENDESA ¹	Government Railroads	IANSA ²	CAP ³	CITAL ⁴	Agricultural Machinery	Housing	Pedro Aquirre Foundation	Industrial Credit Institute
1939	----	----	----	----	----	29.7	41.9	----	0.6
1940	----	----	----	----	----	- 0.3	15.5	----	3.0
1941	----	----	----	----	----	22.7	39.5	----	6.9
1942	----	----	----	----	----	24.7	18.1	----	2.5
1943	----	----	----	----	----	- 7.7	21.4	----	- 3.5
1944	----	----	----	----	----	-22.1	- 3.5	----	- 2.2
1945	----	----	----	----	----	4.3	- 2.9	----	- 1.6
1946	----	----	----	----	----	12.0	5.0	----	- 0.7
1947	618.6	47.9	----	----	----	0.8	- 2.8	----	- 0.8
1948	237.4	35.5	----	----	----	17.4	3.4	----	----
1949	- 146.0	81.2	----	----	----	31.2	- 2.5	----	----
1950	397.9	----	----	----	----	1.8	3.5	0.1	----
1951	- 939.3	----	----	----	----	10.1	3.8	0.1	----
1952	973.0	- 22.0	----	----	----	48.8	23.9	- 0.1	----
1953	1,620.0	- 56.0	----	----	----	-26.2	4.8	----	----
1954	356.2	5.5	200.0	----	----	193.1	----	----	----
1955	1,467.2	- 47.5	1,059.2	- 23.8	----	1,245.8	8.9	----	----
1956	6,251.1	----	668.3	-156.9	581.8	453.9	1.5	1.2	----
1957	4,076.7	255.5	5,672.9	6.1	332.8	1,428.3	- 19.6	2.8	----
1958	4,742.6	----	4,370.7	----	----	----	49.8	17.4	----
1959	13,253.6	----	7,630.2	----	----	250.	47.0	19.4	----
1960	11,752.3	----	6,842.3	----	----	346.8	40.0	37.7	----
1961	16,869.4	----	5,273.3	----	----	5,711.7	----	49.4	----
1962	18,000.0	----	6,236.3	----	----	4,262.5	----	59.9	----
1963	18,879.6	----	2,711.0	----	----	5,438.4	----	105.9	----
1964	----	----	----	----	----	----	----	----	----

Notes: ¹ENDESA - Empresa Nacional de Electricidad S.A. (National Electricity Corporation)²IANSA - Empresa Azucarera Nacional S.A. (National Sugar Industry)³CAP - Compañía de Acero del Pacífico (Pacific Steel Company)⁴CITAL - Comité Inmigración de Trabajadores América Latina (Immigration Committee of Workers, Latin America)

TABLE 8 (continued)

YEAR	The Tarapacá Institute of Mining Development	CAP/ESVAL ¹ CORFO Contract	Mining Credit System	Antofagasta Institute of Industrial Development	Other Direct Loans	Sundry Alloca- tions	D I R E C T L O A N S					Commerce and Transport	Comb.
							Agricul- ture -	Mining	Industries				
1939	----	----	0.4	1.0	----	----	----	----	----	----	----	----	----
1940	1.3	----	----	0.4	----	----	----	----	----	----	----	----	----
1941	----	----	0.8	2.1	----	----	24.6	4.9	7.2	13.4	27.0	----	----
1942	0.7	----	-0.4	----	----	----	30.5	15.1	3.4	10.7	2.1	----	----
1943	0.6	----	0.7	-0.1	----	----	13.7	12.8	3.1	- 8.4	10.0	----	----
1944	-0.1	----	1.0	0.1	----	----	1.4	5.7	0.6	- 6.2	- 2.8	----	----
1945	-0.5	----	----	-1.6	----	----	9.8	- 1.4	- 0.9	- 5.9	- 3.4	----	----
1946	-1.0	----	-0.1	-0.9	----	----	15.4	- 3.5	-31.1	7.0	- 1.9	----	----
1947	-0.5	----	-0.6	----	----	----	13.8	-11.3	-58.9	2.3	0.9	----	----
1948	----	----	-1.1	0.3	----	----	10.0	- 3.3	22.8	2.1	- 6.9	----	----
1949	----	----	-0.6	0.5	----	----	3.8	-12.3	-261.8	2.2	- 4.9	----	----
1950	----	----	-0.4	----	219.3	53.4	----	----	----	----	----	----	----
1951	----	25.0	----	----	31.8	5.9	----	----	----	----	----	----	----
1952	----	25.0	----	----	9.4	5.1	----	----	----	----	----	----	----
1953	----	25.0	----	----	113.7	65.4	----	----	----	----	----	----	----
1954	----	12.0	----	----	51.5	87.6	----	----	----	----	----	----	----
1955	----	87.0	----	----	-17.0	19.1	----	----	----	----	----	----	----
1956	----	----	----	----	-96.9	499.9	----	----	----	----	----	----	----
1957	----	----	----	----	441.7	1,149.4	----	----	----	----	----	----	----
1958	----	----	----	----	----	----	----	----	----	----	----	----	----
1959	----	----	----	----	----	----	1,970.0	1,250.0	1,530.0	----	----	----	----
1960	----	----	----	----	----	----	4,115.7	1,355.0	2,807.2	----	----	----	----
1961	----	----	----	----	----	----	11,180.1	3,770.0	8,868.0	----	----	----	----
1962	----	----	----	----	----	----	6,618.6	3,700.0	5,884.5	(1)	(2)	----	----
1963	----	----	----	----	----	----	7,953.1	4,133.1	4,864.5	----	----	----	----
1964	----	----	----	----	----	----	----	----	----	----	----	----	----

Notes: ¹ESVAL - Empresa Siderúrgica de Valdivia (The Valdivia Iron Company)

Figures preceded by the sign - refer to sales or reduction in holdings. The figures on the direct loans preceded by a minus sign refer to sales of shares.

(1) Incl: in Industries

(2) Incl: in Mining

Source: Finance Section, CORFO, Unpublished Material.

intermediate products. The three projects that stand out in terms of investment outlays in this category are hydroelectric power, steel and oil. In the appendix, these projects, and that of sugar beet production, are briefly described and analyzed because they shed light into the investment policy of CORFO and also because they represent the bulk of CORFO's expenditures. Both the oil and steel industry were new ventures explicitly established to compete with imports. The hydroelectric plants and distribution facilities reflected an independent expansion of the existing network and indirectly reduced the country's fuel needs.

Other investments in the line of raw materials and intermediate products included construction materials, copper refining, the rayon industry, cement, refrigeration plants, textile fibers and so forth. Government policy promoted domestic vertical integration by adding to the existing consumer goods sector a wide range of intermediate and raw material industries. Government entry, through CORFO, in these lines of production was natural. Given that capital requirements were often extremely high and that there also existed a desire to prevent foreign control of these industries, government investment became the natural choice.

The investments of CORFO were divided into two principal categories: investments in contributions and loans, which are presented in table 8, and direct (equity) investments which are presented in table 9. The first category does not represent equity investment and repayment of the loan is normally expected. If, at a later date, instead of cash CORFO received shares in repayment of the debt, the original contributions or loans are reclassified as direct investments. As a consequence, table 9 occasionally duplicates information of the previous table. The value of these tables resides more in the fact that they give an idea of the relative importance of the various investments than in the absolute values, which appear partially distorted by the rampant inflation.

As already mentioned,¹ the principal criterion used by CORFO has been that of import substitution. In table 10 which follows, are given the "savings" in dollars generated by the four major industries supported

¹And as it will be further pointed out in the appendix.

TABLE 9

Direct Investments by CORFO
(in thousand of escudos)

Year	CONTRIBUTIONS		ENDESA	C A P	IANSA	SEAM
	Private Companies	Public Companies				
1939	-----	5.0	-----	-----	-----	-----
1940	2.3	3.7	-----	-----	-----	-----
1941	12.9	34.9	-----	-----	-----	-----
1942	23.1	71.9	-----	-----	-----	-----
1943	4.8	103.1	-----	-----	-----	-----
1944	13.4	552.4	-----	-----	-----	-----
1945	11.7	16.8	-----	-----	-----	-----
1946	5.9	138.1	-----	-----	-----	-----
1947	13.7	14.4	-----	-----	-----	-----
1948	3.6	164.3	-----	-----	-----	-----
1949	9.7	387.6	-----	-----	-----	107.7
1950	10.9	42.4	785.5	155.0	-----	15.2
1951	0.6	40.9	1,700.0	46.5	-----	39.3
1952	40.0	29.1	0.2	46.5	400.0	25.9
1953	45.2	165.8	778.5	396.0	10.0	211.2
1954	11.3	189.2	1,183.7	-----	-----	162.1
1955	76.8	189.6	706.8	949.0	-----	349.1
1956	129.4	291.7	2,037.0	2,193.6	2,015.0	1,173.9
1957	170.1	1,387.7	12,353.7	2,216.2	-----	392.9
1958	-----	-----	-----	-----	4,370.7	-----
1959	-----	-----	-----	-----	-----	-----
1960	-----	-----	-----	-----	-----	-----
1961	-----	-----	-----	-----	-----	-----
1962	-----	-----	-----	-----	-----	-----
1963	-----	-----	-----	-----	-----	653.2

Notes: ENDESA - National Electricity Corporation

C A P - Pacific Steel Company

IANSA - National Sugar Industry

SEAM - Servicio Equipo Agrícola Mecanizado (Service of Mechanized Agricultural Equipment.)

Table 9 (continued)

Year	ENAP	I N V E S T M E N T S A N D S T U D I E S				
		Investments and Studies	Soda Ash	Pupunahue Plant	Mechanization San Antonio	Mechanical Irrigation
1939	----	----	----	----	----	----
1940	----	----	----	----	----	----
1941	----	2.6	----	----	----	----
1942	----	2.2	----	----	----	----
1943	----	28.1	----	----	----	----
1944	----	- 1.2	----	----	----	----
1945	----	162.0	----	----	----	----
1946	----	41.9	----	----	----	----
1947	----	106.9	----	----	0.8	----
1948	----	147.4	----	----	0.1	----
1949	558.4	-387.6	----	----	0.1	----
1950	321.6	- 42.4	----	----	----	----
1951	370.0	19.3	----	----	----	----
1952	500.0	0.3	1.9	----	----	63.1
1953	485.2	64.9	0.9	----	----	----
1954	1,419.9	32.0	----	----	----	----
1955	293.7	326.2	----	194.0	----	----
1956	124.8	713.8	----	516.5	47.2	----
1957	4,164.8	1,880.5	----	1,268.0	197.3	----
1958	----	----	178.9	764.9	100.5	----
1959	----	----	310.1	32.9	231.6	----
1960	----	----	276.9	26.4	88.1	----
1961	----	----	----	26.3	19.4	----
1962	----	----	----	13.4	----	----
1963	----	----	----	27.8	----	----

Notes: ENAP - Empresa Nacional de Petroleo, S.A. (National Oil Enterprise).

Source: Department of Finance, CORFO.

by CORFO.

Since the terminology employed in the discussion of import substitution is rather vague, some clarifications are made here. An enterprise established on the basis of the import substitution criterion creates dollar "savings" if the sum of the value of its exports and production for the domestic market exceeds the sum of its current dollar expenditures and the servicing costs of long-term foreign debt. An industry "earns" dollars, or generates dollar "earnings", if the value of its exports exceeds its current dollar expenditures plus the cost of servicing its long-run dollar debt.

The notion of "saving" dollars is a rather dubious one, since every domestic industry "saves" dollars by producing goods which, as a consequence, do not need to be imported, and, therefore, be paid for in dollars. It is a notion referring to a conditional event and as such very vague. By the same token, it can be said that an industry "spends" dollars if, as a result of its lack of growth, the economy spends dollars to import commodities that this industry could have produced. Thus, while investment in the steel industry permits the economy to "save" around \$60 million, this and other similar investments, at the same time, force the economy to "spend" \$100 million to import agricultural products which could have been saved had investments taken place in agriculture rather than in steel production. Thus, unless such "savings" can be measured per unit of investment for different sectors and industries the "net or overall saving" of foreign exchange for the economy as a result of an investment cannot be calculated. Net saving would occur if the per unit of investment decline in imports is greater than the increase of imports as a result of omitting to invest a unit in another sector.

The notion of dollar "earnings" per unit of investment is relatively more clear and has a higher operational value than that referring to dollar "saving". If an industry contributes more per unit of investment to dollar revenue earnings than to dollar expenditures it has "dollar earnings". As far as the balance of payments is concerned, an industry makes a clearly "positive" contribution only if its dollar (export) revenues exceed its dollar expenditures (direct and indirect). An economy runs into trouble, as in the case of Chile, if practically all investments lead to dollar "savings" but none or very few lead to "earnings" of dollars. Obviously, it is possible that more investment

TABLE 10

Savings of Dollars Generated by Selected Enterprises

(Millions of Dollars)

Accounting Period	Savings Generated by Steel Industry (CAP) (1)	Accounting Period	Savings Generated by Oil Industry (ENAP) (2)	Accounting Period	Savings Generated by Sugar Beet Industry (IANSA) (3)	Accounting Period	Savings Generated by the Electric Power Industry (ENDESA) (4)
1953	12.5	1953	5.8				
1954	18.8	1954	1.3	1954	0.4		
1955	18.6	1955	7.2	1955	0.6		
1956-57	26.0	1956 1st sem.	7.3	1956	1.1		
1957-58	24.7	1956-57	8.1	1957	3.3		
1958-59	31.0	1957-58	9.4	1958	3.0		
1959-60	23.5	1958-59	8.9	1959	4.0	1959	16.8
1960-61	28.0	1959-60	14.4	1960	5.6	1960	15.0
1961-62	43.1	1960-61	14.0	1961	2.7	1961	20.0
1962-63	56.8	1961-62	23.5	1962	5.3	1962	20.0
1963-64	68.5	1962-63	32.4	1963	19.4		
		1963 2nd sem.	25.4				
Total saving since CAP's establishment	389.6	Total saving since ENAP's establishment	121.8	Total saving since IANSA's establishment	45.2		

Sources and Notes:

(1) CAP stands for Compañía de Acero del Pacífico S.A. The information on dollar savings has been obtained from the company's yearbooks. Total saving was calculated by the company itself and is not the sum of the figures presented in the table since some years are missing.

(2) ENAP stands for Empresa Nacional del Petróleo S.A. Dollar saving figures throughout the table have been rounded off. Savings of this column have been calculated by taking the difference between the dollar-equivalent of ENAP's total sales and its actual dollar expenditures, which include all international payments. Expenditures for the establishment of the oil industry started as early as 1942. Sales of output began in 1950 and by 1955 the dollar value of output exceeded

TABLE 10 (continued)

Sources and Notes:

(2) (continued)

the international dollar payments. Remarkable as this performance may be, it conceals the fact that crude petroleum imports to Chile, which started in 1955, did not decline but rather increased in absolute value, even though they have declined dramatically to 20 per cent of total consumption. The negative values for 1953 and 1954 indicate that international dollar payments for ENAP's operations exceeded its sales income.

(3) IANSA stands for Industria Azucarera Nacional S.A. Calculation of dollar savings is not completely correct since it does not take account the cost of servicing foreign credits as a component of dollar expenditures. The resulting error, nevertheless is minor, since the total value of these credits has been small. The information required to correct this error has not been available.

(4) ENDESA stands for Empresa Nacional de Electricidad S.A. Savings have been crudely calculated as the difference between the dollar value of its sales and ENDESA's current dollar expenditures.

is directed toward industries creating dollar "savings" than toward industries creating dollar earnings; then, both revenues and expenditures of dollars would decline either in absolute value or as a percentage of total income, but the former more rapidly than the latter. In the case of Chile it is doubtful that investments over time have led to an overall import substitution, which would be evidenced by a decline of imports as a per cent of gross national product¹, let alone to dollar earnings.

While the import substitution policy of CORFO was successful as far as industrial products and fuels are concerned, it was a failure of omission as far as agricultural exports or imports are concerned. Net agricultural imports have thus increased from \$7.6 million, in 1942, to \$83 million, in 1962, as a result of a narrow interpretation of the import substitution criterion both with respect to time as well as sectors affected. The time horizon rarely exceeded the present, and normally, interest was confined to the industrial sector and electric power. Before closing this section it is worth giving an overall evaluation of CORFO's investment policies.

We have already seen that within a general framework, the objectives of CORFO were, first, to obtain a higher level of living and, second, to achieve equilibrium in the balance of payments.

The second objective was never attained, since from the beginning the means for achieving it were insufficient. Equilibrium could be attained by (a) raising exports or (b) decreasing imports. The de facto chosen alternative was the second and the policy was only partially successful.

Insofar as it aimed at domestic production of previously imported commodities, the policy of achieving balance of payments equilibrium was successful. Chile produces now a variety of commodities that has radically changed the composition of the industrial sector, and fares well in comparison to some other less developed nations. However, the policy was only partial and ignored or neglected two elements

¹An important aim of Chile's import substitution policy was to reduce the share of domestic resources used to import commodities.

fundamental to any trade policy.¹ Indirectly, traditional exports were put at a disadvantage either because of discriminatory taxation and foreign exchange policies, as in the case of the copper industry, or because of inflation and administrative inertia, as in the case of agriculture, forestry and tourism. Some exports declined, and in extreme instances,² commodities normally exported were now heavily imported.

Most of the new products are not export-oriented and place a strain on foreign exchange reserves by requiring capital goods and raw material imports, and frequently, servicing of capital imports. In 1965, the country found itself in an even more serious balance of payments disequilibrium than in 1940 and a matching desire to eliminate it.³

With respect to its first objective, CORFO has been more successful. It appears that per capita income has grown at an average rate of one per cent per year since 1940, largely because of substantial productivity gains in practically all sectors. CORFO did not nevertheless succeed in raising the level of investment. In spite of its efforts, Chile has had the lowest value of the investment coefficient in Latin America.

The very important social objective of a more equal income distribution was bypassed in letter as well as in practice during the first twenty-five years of operation of the Development Corporation.

¹In determining the "foreign exchange saving" component of alternative investment options, the potential constellation of future consumer goods imports as a result of present investment policies was not taken into account. Even today, with heavy agricultural imports, the import substitution criterion has not been supplied in favor of agriculture.

²This is true with various agricultural products.

³The balance of payments problem is equally acute in 1967 as it was in 1965.

CONCLUSION

At the end of the twenty-five years of life of the Development Corporation, the Chilean economy can claim substantial progress. Per capita income growth returned, after the depression years, to its historical rate of increase of one per cent per year, a figure that is not spectacular but also not insignificant. Any conjecture about the contribution of CORFO to this performance or about a potentially better one had CORFO not existed would take us out of the realm of reality. The country possesses now a steel, oil and sugar beet industry, a publicly owned electricity network and numerous other medium or minor enterprises in the area of industrial raw materials, intermediate and final products, all as a result of the efforts of CORFO. Import substitution and industrialization have not included the crucial producer durables sector, which is still locally missing, and the domestic presence of which would have made Chile a "complete" economic system, capable of entering a path of self-sustained growth with the assistance of its own capital goods sector, and without dependence on imports of machinery and equipment.

However, even though since 1939 the dependence on industrial consumer goods, intermediate products, fuel and some imports of raw materials from other nations has been reduced, the lopsided development pattern of the country has contributed to an increased dependence on agricultural consumer goods and producer durables imports.

The balance of payments disequilibrium in 1965, and even in 1967, shows a marked deterioration over that of 1939, leaving completely unfulfilled the second principal objective of CORFO. The type of dependence of Chile in relation to the outside world has changed, shifting towards food and machinery, and its efforts towards greater economic "independence" have not succeeded; actually dependence has increased. Since the possibility of obtaining a domestic producer durables sector is remote, the future of the country lies in its efforts to augment its exports in general and to import less food products. It still remains to be seen whether the economy and CORFO alike can overcome a traditional aversion to trade. Necessity may provide the necessary impetus. Nevía rexvas uarepjáferai?

APPENDIX

ELECTRIFICATION

No industrialization was conceivable without electrification and this was the reason why government simultaneously formulated plans for both in 1939. In 1945, the Empresa Nacional de Electricidad S.A. (ENDESA) was formally established, a subsidiary of CORFO, to pursue the fulfillment of this program as the single entity controlling public power in Chile. Investment in hydroelectric power, in terms of funds allocated, has been the most important one undertaken by CORFO. Up to 1958, it had absorbed more than \$78 million of foreign credits, which is approximately equivalent to 27 per cent of such credits received by CORFO, and approximately 30 per cent of its total resources invested.

In 1939, the climate was highly favorable for a government-sponsored and controlled electrification program. Supply had increased very slowly since 1930 and shortages were highly conspicuous. Electrification of the country on the basis of an interconnected system was a necessity since the geographic and economic characteristics had created a shortage in the Center and excess capacity in the South. Furthermore, electrification was not only a precondition for industrial development, but also for the cultural, social and even political advance of the rural areas. Heavy capital requirements and prolonged periods of low profitability made it a natural target for government ownership. The import substitution criterion was not forgotten when this investment was chosen; it was pointed out that needs for fuel imports would be reduced (the petroleum industry had not yet been developed), and also, that the import component per unit of investment in hydroelectric power was far below this component in investment in thermic power.

The capital-output ratio of ENDESA during 1959-62 fluctuated around 7.0. It is likely that this ratio had been even higher during earlier years when more projects had not reached gestation. The impact of ENDESA's activities is measured by the following facts. The relative share of hydroelectric energy, in total energy consumed, increased from 11.6 per cent in 1940, to 24.7 per cent in 1950. Per capita consumption almost doubled. ENDESA supplied 34.4 per cent of total electric energy generated in 1960. Furthermore, it employed 6008 persons in 1959, and 5886 persons in 1962 at a cost of \$27,200

and \$32,400 per employee investment respectively. During the period

TABLE

Capital Stock and Income Statistics for ENDESA. Selected Years
(In Thousand of U.S. Dollars)

	<u>Capital Stock</u>	<u>Income (output)</u>	<u>Capital/Output</u>
1959	163,643	23,068	7.09
1960	155,104	21,179	7.32
1961	166,909	25,236	6.61
1962	202,926	25,697	7.90

Source: Calculated by the author from information contained in Memoria de Actividades. Año 1962, ENDESA (Santiago, Chile: ENDESA), 1963.

1959-62 ENDESA did not finance more than 25 per cent of its yearly investments with its own funds, even though its rate of return over capital was 4.39 per cent in 1959, 2.99 per cent in 1960, 4.63 per cent in 1961, and 4.08 per cent in 1962. CORFO still contributes annually more than \$10 million. The company hopes that, with more favorable pricing policies of electric power self-financing could rise rapidly. During 1959 and 1962, the import component of the investments undertaken by ENDESA has ranged between 13.1 and 15.8 per cent. The company mentions the inadequate government pricing policies and the extremely low budgetary appropriations as factors limiting its growth.

THE IRON AND STEEL INDUSTRY

The Pacific Steel Company (Compañía de Acero del Pacífico (C.A.P.), S.A.), operator of the El Algarrobo iron ore mine and the Huachipato steel plant, had established itself, on its fifteenth anniversary, in 1964, as a highly successful vertically integrated industry.

Imports of steel products which it fabricates have been totally replaced by national ones and its productivity has been very high. In addition, the firm enjoys high profits, has successfully entered export markets and within the given constraints, has grown at a maximum rate.

The Chilean steel industry was established to "save" dollars, i.e., to replace imports, not to earn them, i.e., to export. As an internally-oriented industry, it constitutes a highly successful case of import-substitution. It has "saved" the country more than \$350 million dollars since its inception, and, in addition, it has "earned" more than \$50 million dollars through exports. Chile, with its rich reserves of iron ore, and limestone and fair deposits of coal is a natural steel producer. Before CAP was organized and established under the auspices of CORFO, the internal activities were limited to a few small rolling mills producing limited tonnages of reinforcing bars and merchant products.

The capital-output ratio has declined over the years as the Huachipato plant reached record output levels.

TABLE

Capital Stock and Income Statistics for C.A.P. Selected Years
(In Millions of U.S. Dollars)

	<u>Capital</u>		<u>Output</u>	<u>Capital/Output</u>
June 1959	111.4	1958/59	31.0	3.6
June 1960	138.7	59/60	23.5	5.9
June 1962	168.2	61/62	43.1	3.9
June 1963	169.5	62/63	56.8	3.0
June 1964	173.1	63/64	68.5	2.5

Notes: Output is defined as the dollar sales value of CAP minus the dollar value of all current international payments such as raw material imports, and interest and amortization payments. This procedure was chosen because the information that would permit a more accurate calculation of value added was not available. In particular since I had no information about domestic intermediate payments, I assumed that the error of not incorporating them was compensated by the error of excluding interest payments abroad from value added. The trend in the capital-output ratio is depicted correctly in column three, as long as the percentage importance of payments to intermediate inputs in total expenditures has remained stable.

Source: Memoria Anual Compañía de Acero del Pacífico, Various issues.

As of June 1964, the industry offered employment to 6,404 persons, at an average investment of \$27,000, and enjoyed a rate of return on capital of 7.3 per cent. Among the four major industries originated by CORFO, CAP is the only one with substantial exports and an even greater potential. The export market absorbed 18 per cent of its output in 1951,

20 per cent in 1955, 42 per cent in 1956/57, and 54 per cent in 1957/58. Exports, directed to Argentina, Peru, other Latin American countries, and even the U.S.A. had a residual character: exported was whatever the domestic market would not buy at international prices (the price policy was not to charge more than what equivalent imports would have cost). The high level of exports reached in 1956 and 1957 was made possible by the severe domestic depression and the contraction in house building. Domestic demand at going prices is, thus, by no means unlimited but international markets can apparently absorb any quantity produced in the near future.

The industry has maintained its accounts and balances in dollars, thus avoiding the confusion generated in an inflationary environment, unfortunately without being imitated. The steel, like the petroleum industry, is constrained in its expansion by the foreign exchange bottleneck. It could become a major export industry and thus shift away the investment feasibility bottleneck, which blocks numerous enterprises, by "earning" rather than only saving dollars.

OIL¹

As soon as it started its activities, CORFO realized that if it were to successfully proceed with a plan of industrialization, it was indispensable to solve the problem of domestic fuel supply. Attention was focused on the oil industry for two fundamental reasons. The first, strictly of an economic nature, related to the economy of foreign exchange that a national oil industry would generate; the second, consisted in that the security of the country would benefit with self-sufficiency of liquid fuels in case of international conflict. Oil production was also a sign of development, a proof of success, an instrument of power and a source of riches that to most underdeveloped nations is even more attractive than the possession of a steel industry, and, besides, in many instances more profitable.

¹The present section is based on material found in Memoria Anual 1961, 1962, 1963, EMPRESA NACIONAL DEL PETROLEO (Santiago, Chile: Corporación de Fomento de la Producción); Boletín Estadística, 1963 ENAP; CORFO, Labor Realizada Entre los Años 1952-1956, mimeo, 1957, and unpublished material made available to the author through the courtesy of ENAP's officials.

The Chilean efforts to produce oil have been justified. In 1950, the National Petroleum Enterprise (Empresa Nacional del Petróleo, "ENAP") was created as a CORFO subsidiary after a long period of explorations. Between 1942 and 1963, dollar expenditures on this venture had reached \$242.2 million and, even though production started only in 1950, by 1963 the oil industry had contributed to net dollar savings of almost \$122 million. The import substitution process was carried through from the level of crude oil production (1950) to refining (1955).

The industry has been highly efficient, innovating, productive and profitable. As shown by the following information, its capital-output ratio is rather high but declined substantially between 1962 and 1963. Employment was 3,331 persons in 1962, and 3,273 in 1963, at an

TABLE

Capital Stock and Income Statistics for ENAP, 1962 and 1963
(In Millions of U.S. Dollars)

<u>Date</u>	<u>Capital</u>	<u>Output</u>	<u>Capital/Output</u>
June 1962	126.3	23.5	5.37
June 1963	130.3	32.4	4.02

Source: Calculated by the author from information provided by ENAP.

average per employee capital investment of \$38,100, and \$39,800 respectively. Gas production rose from 4.430 m³¹ in 1949, to 5,155,460 m³ in 1963. ENAP has exported propane and butane to Argentina, Brazil and Africa (a total of around \$5 million between 1954-63).

As an enterprise providing substitutes for imports ENAP has been very successful. In 1960 it supplied 61.84% of total consumption, and in 1963, 72.6 per cent. Although the share of imported oil products has fallen sharply, their absolute value has increased between 1940 and 1963, or 1950 and 1963. The share of crude oil imported in total oil refined has fallen from 55.7 per cent in 1955 to 18.7 per cent in 1963, while in absolute terms the quantity of crude oil imported increased from 407,720 m³ in 1955, to 465,630 m³ in 1963. The major reason for

¹Cubic meters.

continued oil product imports is that Chilean oil is "light" having a high gasoline content and it is therefore necessary to use "heavy" oil to satisfy the rising demand for kerosene, diesel oil and special fuels. Known oil reserves, expected to last only until 1970, are confined to the Isla de la Tierra del Fuego and a small strip of land adjoining Argentina.

ENAP has been recently handicapped by two major problems. The first arises from its "inability" to reinvest its profits. It has tried to purchase dollars from the Central Bank but to no avail. The funds which ENAP wanted to but "could" not reinvest because of dollar scarcity, were 16.7 per cent of its capital stock, and 104.2 per cent of its "income" in 1964. These percentages would have been higher had the real

TABLE

Infeasible Investment or Frustrated Savings of ENAP. Selected Years

	Unutilized Disposable Funds Thousands U.S. Dollars	Capital Thousands U.S. Dollars	Income (Value added by ENAP) Thousands U.S. Dollars	"Infeasible" Investment as % of Capital Stock. $D = \frac{A}{B}$	"Infeasible" Investment as % of Income. $E = \frac{A}{C}$
	A	B	C		
June 1962	7,824	126,280	1961/62 23,492	5.9%	33.3%
June 1963	21,870	130,341	1962/63 32,417	9.1%	67.5%
June 1964	52,827	134,032	1963/64 50,712	16.7%	104.2%

Note: Columns A and B are the dollar equivalents of these variables as given in the balance sheets of ENAP. Conversion was made at the official exchange rate. Column C has been obtained by deducting from the dollar value of the sales of ENAP its dollar international expenditures in the same year. Since ENAP is a vertically integrated industry, except for the imported crude oil, this procedure is rather accurate. Income for 1963/64 period was obtained by doubling the income figure of the second semester of 1963.

value of its bank deposits not declined each year as a result of inflation. The officials of ENAP lament this loss but appear unable to establish the circumstances that would facilitate the conversion of funds and savings into machinery and equipment. This microeconomic evidence supports the "feasibility" of investment doctrine which claims that countries with scarce foreign exchange resources, such as Chile, possess the savings but are unable to convert them into investment because the economy is either unable or unwilling to pay for capital goods imports. As far as

ENAP was concerned, the domestic market and the existing level of demand permitted almost unlimited expansion. Saving by the industry presented no problem either since profits were high and also own funds had been accumulated. The bottleneck they faced was related to the infeasibility of the investment, which arose from the lack of domestic supply of the necessary producer durables and the inelastic supply of foreign exchange and imported capital goods.

Exploitation of oil deposits was entrusted in Chile to a wholly government owned autonomous enterprise. In terms of efficiency, the record of this public enterprise is outstanding and by all means superior to the record of the government-owned enterprise in Argentina. Although the Chilean Oil Company relied on the technical assistance of United States experts, its long-run success has been predominantly the result of Chilean, public sector talents. It has thus demonstrated that even in the difficult field of oil exploration and exploitation national factors of production, and even the public sector are present and capable of undertaking the most difficult tasks. In a way, the very success of ENAP was the result of its national rather than foreign character which saved it from being stigmatized as an imperialist monopoly, and possibly discriminated against. Chile saved substantial foreign exchange reserves by not having to pay foreign factors of production for its ventures in the oil industry.

THE SUGAR BEET INDUSTRY¹

As early as 1854 a Frenchman, by the name of Ducaud, attempted to establish a joint stock company with the intention of exploiting sugar beet production, but his activities had no success. The subsequent recurrent attempts to establish sugar beet factories went beyond

¹The following sources were used for this section. Memoria y Balance Industria Azucarera Nacional. Various years (Santiago, Chile: Industria Azucarera Nacional S.A.). Boletín Remolachero (Santiago, Chile: Industria Azucarera Nacional) Various issues. "IANSAs y la Agricultura de Chile", Panorama Económico, December 23, 1955, No. 137, "IANSAs dio la Voz de Partida a su Tercera Planta de Azúcar de Betarraga", Ibid., April 18, 1958, No. 187.

this step. In some instances sugar was produced for some years, but at the end they failed.

CORFO started in 1939 contemplating the possibility of establishing a national sugar beet industry, concentrating its first efforts in preparing the necessary studies. In 1945 was initiated an experimental program with the cooperation of local functionaries and farmers. Once this was completed, there was formed the Industria Azucarera Nacional S.A. (IANSA) in 1953. The industrial cultivation of sugar beets started in 1954 in Los Angeles, where the first plant was constructed. In 1958 and 1959, two more were built in Llanquihue and Linares with which the combined domestic capacity to produce sugar rose to 110,000 tons annually.

The principal criterion employed by CORFO in establishing the National Sugar Industry was that of import substitution. In effect, sugar imports were claiming a high share of dollar resources in 1939, and unless checked, this dollar drain would be increasing as population and income increased. In addition, IANSA was established to promote and develop agriculture and livestock by means of sugar beet cultivation. In the pursuit of its objectives the industry has been relatively successful. In 1954, its production of sugar reflected 2.1 per cent of national consumption and, by 1964, this proportion had increased approximately to 40 per cent. It gained the third place in the world ranking of countries producing beet sugar with respect to productivity per hectare. Furthermore, it provided full-time yearly employment to 7,200 persons including farmers, blue- and white-collar workers, at an average capital investment per person employed of 3,400 dollars.

The capital-output ratio has fallen over the years and reached a low point of 1.24 in 1963. In the same year the industry approached full capacity production and the value of output, which is measured by international prices rather than domestic cost, benefited from exceptionally high prices. The cost of production of a kilogram of sugar by IANSA, in 1964, was 25 cents and obviously substantially higher than the international price.

IANSA has been an exception in the government's policy in the forties and fifties of neglecting agriculture. But even so, in 1961, it experiences a substantial decline in production and acreage cultivated,

TABLE

Capital Stock and Output Statistics for IANSA, 1962, 1963
(In Millions of U.S. Dollars)

	<u>Year</u>	<u>Capital Stock</u>	<u>Output</u>	<u>Capital-output Ratio</u>
	1962	23	5.3	4.34
Aug.	1963	24	19.4	1.24

Note: Calculated by the author on the basis of published information presented in earlier references.

when government fixed irrationally low prices to farmers. Furthermore, although its expansion is both profitable and dollar-saving, government has not provided dollar and domestic funds for the building of new plants.

The contribution of the industry to agriculture has been substantial. It was established in regions where small cultivators predominate, since sugar beet cultivation requires intensive farming, heavy labor inputs and continuous care. An agricultural extension system was established, farmers were trained, roads and transport were developed, and agricultural soil was improved. Dollars were saved because of reduced sugar imports and the increased domestic production of meat, milk and butter through the use of the "industry's" byproducts. Agricultural productivity in the areas involved reached high levels.