

Public Finance, Trade, and Development: The Chilean Experience

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This paper analyzes the role of public finance and trade policies in the adjustment experience of Chile over the past fifteen years. The case of Chile is usually cited today as an example of successful adjustment. Indeed, in the early 1970s Chile faced large macroeconomic disequilibria and major and widespread microeconomic distortions. Macroeconomic disequilibria were manifested in the form of a large and unsustainable current account deficit, a public sector deficit of over 30 percent of GDP, and an inflation rate of over 490 percent a year in spite of widespread price controls.

Microeconomic distortions were present in the form of a high level and a high dispersion of trade tariffs, interest rate controls, controlled prices of commodities being set without relation to economic costs, credit allocation, wages disassociated from marginal product conditions, and restrictions on factor mobility.

The final objective of an adjustment program for a situation, such as the one Chile faced in the early 1970s, is to reduce inflation, achieve a sustainable current account deficit, improve resource allocation, move actual output close to potential output, and achieve a sustainable and acceptable rate of growth of output and consumption per capita. The issue of sequence is clear. A change in relative prices provides the incentive for adjustment to take place, but the information given by relative prices is less useful when inflation is high and unpredictable. The sustainable control of inflation is therefore a pre-

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condition to successful adjustment and should take precedence in the sequencing of macroeconomic adjustment policies (Corbo and de Melo (1987); Fischer (1986); Sachs (1986)).

Both theory and practice suggest that a successful stabilization of inflation, in a situation in which monetization is directly linked to the financing of the public sector deficit, requires a credible reduction in the public sector deficit. The level of the deficit must be such that the need for monetary extension is compatible with the growth in the demand for money resulting from the projected output growth and a projected low inflation. Once the public sector deficit has been reduced and inflation has declined, it is possible to concentrate on the other components of the adjustment program. Therefore, the credible reduction of the public sector deficit that Chile undertook beginning in 1974 was an integral component of its adjustment program. Moreover, owing to high inertia, despite the drastic reduction in the public sector deficit, the reduction of inflation was a very slow process (Corbo (1985a)). Once the fiscal situation was under control and inflation became more predictable, the Chilean authorities started to make progress in the reduction of microeconomic distortions, including the integration of Chile into the world economy.

This paper first reviews the Chilean public sector and trade reforms and then examines their role in the economic development of Chile. The paper is divided into five sections. The following section presents a brief summary of the conditions in 1973 on the eve of the shift in Chilean policy. The next section focuses on the policy reforms introduced by the military government over 1973–82. Then public finance and trade reforms are looked at in some detail. The effect of the reforms on aggregate incentives and on the macroeconomic adjustment is the subject of the penultimate section. The final section presents the main conclusions.

Pre-Reform Period

Beginning in the 1930s, Chile pursued the classic strategy of import substitution for its industrialization. The government followed a set of policies designed to shift the domestic terms of trade in favor of the manufacturing sector at the expense of the agricultural and mining sectors. The greatest emphasis was given to trade policies—quotas, tariffs, and an overvalued currency—all of which discriminated against exports. From 1950 to 1970, for example, the effective exchange rate for manufacturing was approximately 1.5 times the rate for agriculture and almost twice that for mining. The bias against exportables within these sectors was even larger (Behrman (1976), Corbo and Meller (1981)).

Until 1955, trade policies, which were mainly ad hoc reactions to balance of payments problems, were highly restrictive. After 1955, these policies moved cyclically, switching back and forth from restrictive to more liberal, but still with tariff-induced import substitution at their core. By 1970, at the end of the Frei government, the economy was at the stage of mild trade liberalization. (For a review of trade policies up to the late 1960s, see Corbo and Meller (1981).)

The structure of the effective rates of protection under the different trade regimes over this period, in addition to discriminating against exports, was characterized by considerable variation across industries. The rates ranged from 1,140 percent for coal and petroleum products (an import-competing sector), to -20 percent for exports in the leather and leather products sector. Such a range could hardly be justified by economic arguments.

The composition of imports during the 1960s showed the effect of this system of protection: only 15 percent of imports were consumer goods, about 30 percent were investment goods, and 55 percent were intermediate products. As the structure of imports moved away from consumption goods toward raw materials, parts, and equipment essential to the industrial sector and without close domestic substitutes, the Chilean economy became more vulnerable to fluctuations in the world economy. Furthermore, the import-substituting strategy, by protecting capital-intensive activities, gave rise to only a low level of labor absorption. (For details on Chile, see Corbo and Meller (1981); for a comparative study, see Krueger and others (1981).)

There were no major restrictions on capital inflows during this period, although outflows were quite controlled. In retrospect, the inflows in 1968 are judged to have been too high in relation to the country's needs and to have contributed to an unwanted growth in the money base (French-Davis (1973), p. 107).

By the end of the 1960s, GDP was stagnant, while inflation was running around 30 percent a year and unemployment around 6 percent. During the 1960s as a whole, GDP grew at an average rate of only 4.2 percent a year, a low level when compared with the 6.4 percent annual growth of other upper middle-income developing countries in the same time frame (World Bank (1983)).

The Frei government was succeeded by the Allende government in 1970. During the three years it was in power, from November 1970 to September 1973, the Allende administration tried to implement a radical economic transformation. Because large increases in expenditures were not matched by increases in government revenues, the result was a large public sector deficit that resulted in monetary expansion and a balance of payments crisis. To suppress the inflation and address the severe balance of payments crisis, the government intensified price controls and trade restrictions across the economy.

Control of foreign trade and credit, along with commodity rationing, became an important part of the macroeconomic policy of the time. The banking sector was also nationalized, a radical land reform program disrupted the agricultural sector, and the most important firms in manufacturing were taken over by workers or the government.

By the end of 1973, the Chilean economy was experiencing substantial macroeconomic imbalances. Internal and external imbalances resulted from a public sector deficit that increased from 6.7 percent of GDP in 1970 to 30.5 percent of GDP in 1973 (Table 1). The internal imbalance led to accelerating inflation even under widespread controls and rationing. The external disequilibrium was temporarily contained by widespread restrictions on foreign trade—differentiated tariffs, multiple exchange rates, and extensive quantitative restrictions on imports and exports. With controlled interest rates that were negative in real terms, organized capital markets were almost nonexistent. When price controls were lifted in late 1973, the rate of inflation was roughly 1,000 percent a year.

The restrictions on commodity trade were varied and considerable by the end of 1973 (Torres (1982)). *Ad valorem* tariff rates ranged from 0 percent to 750 percent, with a mean value of 105 percent, a mode of 90 percent, and a median of 80 percent. Among 4,952 tariff positions, 187 contained import prohibitions. For the 2,872 tariff positions, a 90-day non-interest-bearing deposit equal to 10,000 percent of the c.i.f. value was required, and for 2,278 tariff positions a previous approval was required before presenting an import request.

Exchange rate policies were also drastically changed. During the Allende regime there was a shift from the three exchange rates of the late 1960s toward one with multiple rates for commodity trade. The successful crawling peg policy that had stabilized the real exchange rate in the second half of the 1960s was abandoned in favor of a fixed nominal exchange rate. With domestic inflation substantially above international levels and with a growing public sector deficit, this policy could only be sustained first through an increasingly restrictive trade regime and finally through a series of major devaluations. The culmination of these trends came in March 1973, with a crawling peg system for one of the six explicit exchange rates. Toward the end of the Allende administration, the ratio between the highest and lowest official exchange rate was 52 to 1. Not surprisingly, distortions and rent-seeking activities were widespread.

The domestic commodity markets were also highly regulated by the end of the Allende regime, with more than 3,000 prices being set by a government regulatory body, the Dirección de Industria y Comercio (DIRINCO). The labor market in the organized sector was characterized by low mobility, the result of large severance payments. The government was, directly or indirectly, a major employer.

Table 1. Chile: Macroeconomic Indicators, 1960-87

	Tradables ¹	Gross Domestic Product Nontradables ²	Total	Absorption ³	GDP Deflator ⁴	CPI	Unemployment Rate ⁵	Price of Copper	Public Deficit ⁶	Public Capital Formation ⁷	Total Gross Investment ⁸	Terms of Trade ⁹
			(Percentage changes)				(In percent)	(In cents per pound)		(In percent of GDP)		(Index)
1960	-	-	-	-	-	11.6	7.4	30.8	-	-	13.9	139.9
1961	5.5	2.6	4.8	6.1	6.5	7.7	6.7	28.7	-	-	15.3	125.3
1962	5.7	4.7	2.5	2.5	13.4	13.9	5.3	29.3	-	-	12.4	134.1
1963	3.9	8.3	6.3	5.8	43.6	44.3	5.1	29.3	-	-	14.8	131.4
1964	4.5	0.1	2.2	2.9	47.3	46.0	5.3	44.1	-	-	14.2	133.9
1965	1.1	1.1	0.8	0.4	39.3	28.8	5.4	58.7	-	-	15.0	152.9
1966	12.9	8.0	11.2	16.5	28.5	22.9	5.4	69.5	-	-	16.3	185.2
1967	2.8	4.3	3.2	0.6	25.6	18.1	6.1	51.1	-	-	16.1	176.4
1968	3.9	3.8	3.6	4.8	33.9	26.6	6.1	56.1	-	-	16.3	188.6
1969	-0.8	6.6	3.7	5.8	39.9	30.7	6.2	66.6	-	-	15.1	222.8
1970	1.4	2.9	2.1	1.8	40.5	32.5	7.1	64.2	6.7	10.4	16.4	226.1
1971	9.2	8.8	9.0	9.7	18.4	22.1	5.5	49.3	15.3	10.5	14.5	172.3
1972	-0.8	-1.1	-1.2	1.0	86.9	117.9	3.8	48.6	24.5	9.6	12.2	166.2
1973	-7.3	-3.7	-5.6	-6.2	418.1	487.5	4.6	80.8	30.5	8.4	7.9	187.2
1974	6.6	-0.4	1.0	2.4	694.2	497.8	9.7	93.3	5.4	12.5	21.2	197.8
1975	16.6	-8.4	-12.9	-20.8	342.4	379.2	16.2	55.9	2.0	9.2	13.1	118.5

1976	5.3	1.6	3.5	0.2	250.7	234.5	16.8	63.6	-3.9	6.1	12.8	127.8
1977	7.8	9.4	9.9	14.2	103.5	113.8	13.2	59.3	-0.4	6.9	14.4	114.4
1978	4.5	9.6	8.2	9.7	56.6	49.8	14.0	61.9	-1.5	6.7	17.8	111.0
1979	7.0	10.0	8.3	10.5	46.3	36.6	13.6	89.8	-4.8	5.1	17.8	118.5
1980	5.5	10.0	7.8	9.3	29.2	35.1	11.8	99.2	-6.1	5.2	21.0	100.0
1981	3.8	5.4	5.5	11.6	12.2	19.7	11.1	78.9	-0.8	5.1	22.7	84.3
1982	-11.2	-10.8	-14.1	-24.1	13.3	9.9	22.1	67.1	3.4	4.7	11.3	80.4
1983	0.5	-6.1	-0.7	-4.6	26.6	27.3	22.2	72.2	3.0	4.8	9.8	87.5
1984	7.9	5.3	6.3	8.5	14.3	19.9	19.2	62.4	4.3	6.0	13.6	83.2
1985	2.5	2.4	2.4	-1.9	32.9	30.7	16.4	64.3	2.6	7.1	13.7	78.5
1986	6.7	5.0	5.7	5.4	19.2	19.5	13.5	62.3	1.7	7.5	14.7	82.0
1987	3.5	6.6	5.4	7.3	20.1	19.9	12.3	81.1	1.6	7.4	16.6	77.0

Sources: Banco Central de Chile, *Indicadores económicos y sociales, 1960-85*; from 1971-79, CPI correspondent to that revised by Corraza and Marshall (1980).

¹Includes agriculture, fishing, mining, and manufacturing. Until 1983 national accounts; from 1984 onward, estimations based on sectoral information.

²Includes construction and services. The same methodology is applied here as in the case of GDP of tradables.

³The GDP deflator was obtained from the ratio between the nominal and the real GDP.

⁴Includes private consumption, public consumption, and total investment.

⁵Greater Santiago, Universidad de Chile. The data for 1987 correspond to the average of the last four quarters with available information.

⁶Considers general government and public enterprises; extracted from Larraín (1988) upto 1985; 1986 and 1987 were obtained from Fontaine (1987).

⁷Extracted from Larraín (1988) upto 1985, and thereafter from Fontaine (1987).

⁸Constructed from fixed gross investment, change in stocks and GDP at current prices. From *Indicadores económicos y sociales, 1960-85*, and Barandiarán (1988).

⁹From *Cuadernos estadísticos de la Cepal, Indicadores económicos y sociales, 1960-85*, and Barandiarán (1988).

Main Policy Reforms: 1973–82¹

The military government that took power in 1973 had to contend with an economy suffering from widespread distortions and the worst inflation in Chile's history (Table 1). The public deficit was close to 30 percent of GDP and net foreign reserves were negative. Only by virtue of widespread price controls was inflation kept even moderately in check. Indeed, when the new government lifted the price controls in late 1973, inflation skyrocketed to 1,000 percent on an annual basis.

Given this situation, the military government spent its first two years trying to stabilize the economy. To eliminate the monetization of the public sector deficit, it introduced a major tax reform in 1974 and implemented large reductions in government expenditures in both 1974 and 1975. It also sold government assets inherited from the Allende years, a step that further reduced the need for monetization of the public sector deficit. Good prices for copper in 1974 and a rollover of 30 percent of the outstanding debt service in 1973 and 1974, in addition to the above measures, eased the adjustment to the first oil shock.

The government also lowered the nominal tariffs which had ranged, as noted, from 0 percent to 750 percent in the Allende years, to a maximum rate first of 140 percent and then 120 percent. It also lifted all commodity price controls and removed the constraints on domestic interest rates by June 1975. Following a large devaluation in late 1973, the relative incentives for the production of exportable goods improved substantially, while those for home goods (highly protected and nontradable) and import-competing goods were reduced.

Still, by late 1974 and early 1975 an emerging external crisis had become increasingly apparent—copper prices dropped almost 50 percent with respect to their 1974 value, while the price of oil stayed at four times its 1973 value. These exogenous factors forced the government to undertake a severe austerity program and a major devaluation. Moreover, during 1975–79, Chile implemented one of the most sweeping programs of reform in its economic history. The government lifted all remaining quantitative restrictions on trade and started a trade reform that reduced the tariffs even more to a uniform 10 percent by July 1979. In addition, in 1976 the military government unified the multiple exchange rate system and instituted a

¹Much has been written on the Chilean economic experiment. See, in particular, Corbo (1983, 1985a, 1985b, and 1986), Edwards and Edwards (1987), Harberger (1982 and 1985), and Zahler (1983). This section draws on material from Corbo (1985b). For a chronology of these reforms, see the Appendix to Corbo (1985b).

crawling peg targeted to achieve a fairly stable real exchange rate (with, however, two revaluations of 10 percent, the first in early June 1976, the second in March 1977).

In two areas liberalization was much slower, however. One was labor policy. Although labor markets were deregulated *de facto* by the loss of trade union power in the year following the military coup, most of the restrictive labor legislation inherited from previous governments was modified only slowly. There was, nevertheless, one major reform which was contrary to the thrust of the whole reform program—a compulsory 100 percent backward wage indexation was introduced in October 1974.² (The prices of many nontradables, such as housing rent, school fees, mortgage payments, public utility tariffs and the like, had already been fully indexed backward for some time.) As is discussed below, this was an undesirable development that finally resulted in an unsustainable appreciation of the real exchange rate and a macroeconomic crisis. The second area in which the reform effort was slow was the liberalization of capital inflows. After much fine tuning, important liberalization was introduced only in June 1979.³

In the initial years of its rule, the military government had attacked inflation by controlling the growth of money. However, in early 1977, when Chile's economy had been significantly opened to trade, a debate developed within the government on the causes of inflation and the most appropriate way to deal with it. That debate led to the two 10 percent revaluations, which were seen as a way of lowering inflation and sterilizing part of the accumulation of reserves.

Toward the end of 1977, the government announced that it was going to target the rate of devaluation to exceed the rate of inflation to compensate the import-competing sector for the announced tariff reductions (this pre-announced devaluation schedule was called the *tablita*). In February 1978, Chile established an active crawling peg system with an explicit stabilization objective. For this purpose, the rate of crawl was established well below the difference between domestic and foreign inflation.

In June 1979, the exchange rate was fixed at 39 pesos per dollar, at the time the monthly rate of inflation was about 2.5 percent, substantially above the international level. Finally, in late 1979 the government introduced a new labor code that re-established collective bargaining, albeit for just a fraction of the labor force. It mandated that the lowest offer employers could make had to be equal to the previous wage adjusted by inflation as measured by the CPI. This

²For a review of the indexation, see A. Edwards (1984).

³See Corbo (1985h) for details.

measure went well beyond the less extensive indexation that had been instituted in late 1974.

From 1979 to 1982, most of the policy reforms concentrated on improving the functions of domestic commodity markets and further deregulation of capital flows. One of the most important institutional reforms was also the introduction of a private pension system.

Public Finance and Trade Policies in Chile

Public Finance Policies

Prior to 1975, Chile had a long tradition of a very powerful public sector. Not only was the public sector an important generator of employment in the general government, but public enterprises were well entrenched in the productive structure of the economy. The structure of the tax system in this period was characterized by multiple exceptional regimes with numerous groups receiving special treatment. Also, the presence of an indirect cascading tax system gave important incentives to the vertical integration of private enterprises. Such a system proved difficult to administer and encouraged evasion.

This section will first examine the behavior of the public sector budget, using information available for the 1960s.⁴ During 1960–69, current receipts showed an increasing trend with the exception of only two years, 1963 and 1964. While revenues represented 29.2 percent of GDP in 1960, they reached 35.8 percent in 1969. As a result of changes in current revenues and expenditures, the government current account surplus was continuously increasing over time. In 1960, the surplus was 4.3 percent of GDP and reached 9 percent by 1969.⁵ With respect to public investment behavior, there was a declining tendency from 1965 onwards; in 1966 public investment represented 8.5 percent of GDP, while in 1969 it dropped to 7 percent. In terms of the overall surplus, the budget showed a persistent deficit over the entire period, oscillating in size, but reaching

⁴The data obtained for this period cover only general government. There is a predominant view that public enterprises were a significant burden for the national budget, as massive subsidies were given through government pricing policies. Transfers were allocated by the general government for the financial support of state-owned firms. For this reason, the figures presented for this period may underestimate the overall imbalance of the broad aggregates of the public sector. Information is extracted from Chilean central government accounts.

⁵This was due to rising copper prices, the creation of indexation for tax liabilities to avoid erosion from inflation, and a shorter lag in tax collection. In addition, some tax rates were increased and new levels were introduced.

significant magnitudes during the second half of the 1960s. Estimations for that period show that the deficit fluctuated between 5.5 percent and 7.5 percent of GDP. The difference between the current account surplus and public investment is accounted for mainly by financial investment.

Tax receipts represented an increasing proportion of GDP during this period, with the proportion increasing from 16.8 percent to 18.2 percent. This evolution is explained basically by an upward trend in the indirect taxation ratio that grew from 9.2 percent in 1965 to 10.9 percent in 1969.

During the Unidad Popular government (1970–73), profound structural reforms were implemented. Expropriation and nationalization affected an important part of the productive private sector, and expansionary aggregate demand policies (higher government expenditures and significant monetary growth) were used to achieve the administration's proposed objectives. The public sector deficit rapidly reached 24.5 percent of GDP in 1972 and 30.5 percent in 1973; the annual inflation rate ballooned to 118 percent in 1972 and 488 percent in 1973 (Table 1). Over this period the government also took over many private enterprises, usually following labor unrest. These *de facto* expropriations created a heavy burden on the economy in terms of GDP losses resulting from the expropriated enterprises. Severe imbalances were widespread. Price controls were responsible for repressed inflation, and major distortions in relative prices prevailed.

When the military took power in September 1973, it inherited an untenable public finance situation that prompted several policy measures dealing with both the revenue and expenditure side of the budget. On the tax side, the first measures involved an upward adjustment of property values and the simultaneous creation of a one-time net wealth tax. Personal income tax was made more progressive, while the sales tax, the most important source of indirect taxes, was also raised. Through these measures the government obtained additional revenues of 1.7 percent of GDP from direct taxes, and 2.9 percent from indirect taxes (Table 2). By the end of 1974 direct taxation accounted for 35 percent of tax revenues.

In the case of indirect taxes, the contribution of international trade duties increased substantially, even though the average tariff applied fell from 94 percent by the end of 1973 to 80 percent at the end of 1974. Trade taxes as a share of GDP increased a full percentage point over 1973–74 (Table 3). This increase in receipts was the consequence of the elimination of the black market, the large real devaluation in late 1973, the abolishment of tariff exemptions for public agencies, and improvement in tax administration.

Table 2. Chile: Operations of the Consolidated Nonfinancial Public Sector, 1970-85
(In percent of GDP)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Current revenue	38.14	37.65	34.48	21.26	37.26	39.20	43.36	42.41	46.65	35.51	46.92	34.19	33.89	33.50	34.27	36.70
Taxes	25.50	26.35	23.60	20.37	24.50	27.60	36.94	26.52	25.50	25.73	26.31	25.22	22.76	22.44	23.76	23.17
Direct taxes	7.73	6.19	4.28	5.68	7.39	9.59	9.55	7.97	8.09	7.16	7.33	5.75	5.73	4.99	4.65	3.68
Indirect taxes	10.82	11.66	11.13	10.12	13.02	14.60	14.03	14.90	13.72	13.30	13.43	14.75	13.77	14.64	16.30	17.06
Social security contribution	6.96	8.51	8.19	4.58	3.09	3.41	3.36	3.66	3.69	5.27	5.55	4.72	3.26	2.81	2.89	2.42
Non-tax revenues	12.63	11.50	10.88	0.88	13.75	11.60	16.42	15.89	11.15	9.78	10.61	8.97	11.13	11.06	10.51	13.53
Net sales of goods and services	6.43	4.87	5.82	-2.22	6.30	3.97	7.73	6.34	6.09	3.91	5.52	3.30	5.60	6.77	6.23	7.54
Profit transfers and other revenues	6.51	6.43	5.06	3.10	7.46	7.63	8.68	9.55	5.05	5.87	5.09	5.67	5.53	4.29	4.28	6.00
Current expenditures	30.86	39.45	46.41	41.05	30.63	31.29	31.73	33.84	27.89	26.55	26.35	29.03	35.17	33.55	33.66	32.85
Wages and salaries	15.83	19.54	20.50	15.76	15.55	14.80	12.10	15.78	14.51	13.18	13.01	11.77	12.25	10.66	10.58	9.72
Social security payments	8.60	11.87	11.86	6.03	4.45	7.20	6.92	7.02	6.86	6.99	7.07	8.20	10.77	9.65	10.12	9.01
Transfers and subsidies to private sector	3.43	1.82	2.26	1.73	1.96	3.08	5.5	5.20	2.89	3.83	4.14	6.91	9.05	8.87	8.17	7.99
Interest on public debt	1.13	1.75	1.55	2.67	2.95	4.25	3.14	2.37	2.60	1.81	1.49	1.45	2.29	3.85	4.66	5.74
Other	1.86	4.47	5.63	5.36	5.72	1.96	4.21	3.47	1.04	0.73	0.64	0.69	0.82	0.52	0.52	0.40
Subsidies to social area	—	—	4.60	9.49	—	—	—	—	—	—	—	—	—	—	—	—
Savings	7.28	-1.79	-11.93	-19.79	6.62	7.91	11.63	8.57	8.76	8.96	10.57	5.16	-1.28	-0.04	0.61	3.85
Net capital revenue	-3.57	-3.00	-2.96	-2.35	0.48	-0.58	0.19	-1.25	-0.37	0.10	0.36	2.11	1.78	1.05	0.64	0.64
Capital formation	10.41	10.48	9.64	8.35	12.54	9.15	6.09	6.90	6.68	5.10	5.24	5.08	-4.67	-4.76	6.00	7.07
Tax expenditure	41.27	49.93	56.05	49.39	43.17	40.44	37.82	40.74	34.57	31.65	31.58	34.11	39.84	38.31	39.66	39.92
Overall surplus	-6.69	-15.28	-24.53	-30.48	-5.43	-2.02	-3.94	0.42	1.54	4.75	6.14	0.84	-3.37	-3.03	-4.34	-2.60
Financing	6.68	15.27	24.53	30.48	5.54	2.02	-3.94	-0.41	-1.54	-4.77	-6.15	-0.84	3.37	3.03	4.34	2.60
External (Net)	0.09	1.66	1.82	0.08	0.30	-2.87	-3.09	-0.27	2.70	-0.04	-0.12	2.75	2.24	1.08	2.68	4.01
Internal (Net)	6.60	13.61	22.71	30.40	5.25	4.89	0.51	-0.15	-4.24	-4.71	-5.41	-3.57	1.13	-3.12	1.65	-1.41

Source: Larrain (1988).

Table 3. Chile: Operations of the General Government, 1970-85
(In percent of GDP)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Current revenues	31.58	32.81	29.14	23.55	30.26	34.92	37.28	38.61	33.24	32.49	32.90	32.13	29.94	27.69	28.74	28.61
Taxes	25.50	26.35	23.60	20.37	23.50	27.60	26.94	26.52	25.50	25.73	26.31	25.22	22.76	22.44	23.76	23.17
Direct taxes	7.73	6.19	4.28	5.68	7.59	9.59	9.55	7.79	8.09	7.16	7.33	5.75	5.73	4.99	4.65	3.68
Personal and business income	3.82	4.80	3.52	4.76	4.75	5.68	4.98	4.33	4.25	4.48	5.25	5.40	4.59	2.96	3.44	2.98
Copper companies	3.10	0.38	0.05	0.55	1.73	1.26	2.63	2.55	2.81	1.94	1.93	0.24	0.98	1.89	1.25	0.54
Property	0.81	1.01	0.71	0.37	0.91	2.65	2.03	1.09	1.03	0.74	0.15	0.12	0.15	0.14	0.16	0.16
Indirect taxes	10.82	11.66	11.13	10.12	13.02	14.60	14.03	14.90	13.72	13.30	13.43	14.75	13.77	14.64	16.30	17.06
Goods and services	9.11	9.82	9.52	9.69	9.37	11.65	12.16	12.39	12.49	11.50	12.29	13.19	13.52	13.55	14.30	15.08
International trade	1.71	1.84	1.61	0.44	1.97	2.95	1.87	2.36	1.98	2.02	1.96	2.27	1.44	2.34	3.29	3.64
Other, net of VAT rebates	—	—	—	—	1.68	—	—	0.14	-0.75	-0.22	-0.82	-0.71	-1.19	-1.24	-1.28	-1.66
Social security contributions	6.96	8.51	8.19	4.58	3.09	3.41	3.36	3.66	3.69	5.27	5.55	4.72	3.27	2.81	2.80	2.42
Non-tax revenues	6.07	6.46	5.53	3.17	6.76	7.31	10.34	12.08	7.74	6.75	6.58	6.90	7.18	5.25	4.98	5.44
Sales of goods and services	1.76	1.57	1.09	1.21	0.68	1.04	2.19	3.12	3.26	2.43	2.45	2.20	2.44	2.23	2.49	2.65
Profit transfers and other revenues	4.31	4.89	4.45	1.96	6.07	6.28	8.15	8.96	4.47	4.31	4.13	4.70	4.73	3.02	2.48	2.80
Current expenditures	25.27	32.21	33.01	26.02	26.33	27.57	31.03	33.00	26.68	24.77	24.49	26.62	31.89	20.33	30.74	29.75
Wages and salaries	9.81	11.82	12.92	9.41	10.03	9.26	8.89	10.99	9.97	9.13	8.78	7.78	7.80	6.66	6.44	5.84
Purchase of goods and services	2.58	3.23	2.77	4.17	4.29	4.35	3.67	4.91	4.70	3.04	3.12	2.93	3.32	3.23	3.40	3.21
Social security payments	8.60	11.87	11.86	6.03	4.45	7.20	6.92	7.02	6.86	6.99	7.07	8.20	10.77	9.65	10.12	9.01
Transfers and subsidies to private sector	4.31	4.89	4.45	1.96	6.07	6.28	8.15	8.95	4.47	4.31	4.13	4.70	4.73	3.02	2.48	2.80
Interest on public debt	0.75	0.72	0.62	0.68	1.37	2.56	2.24	1.72	1.58	1.23	0.84	0.42	0.55	1.78	2.48	3.22
Internal	0.20	0.16	0.40	0.04	0.44	0.50	0.21	0.79	0.86	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
External	0.55	0.56	0.22	0.64	0.93	2.06	2.03	0.93	0.73	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Other	0.13	2.75	2.58	3.99	4.22	1.12	3.95	3.17	0.68	0.53	0.53	0.37	0.40	0.15	0.23	0.27

Table 3 (concluded). Chile: Operations of the General Government, 1970-85
(In percent of GDP)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Savings	6.51	11.60	-5.87	-2.47	5.95	7.56	6.25	5.60	6.55	7.71	8.42	-5.51	-1.95	-2.84	-2.11	-1.94
Net capital revenue	-5.56	-2.99	-2.86	-2.21	-1.86	-1.64	-0.07	-0.50	-0.81	0.65	-0.52	-0.07	1.78	1.91	-0.74	0.59
Revenue	1.06	5.15	0.01	2.16	1.92	1.95	2.51	1.47	1.10	2.21	1.71	2.78	7.46	-4.00	5.21	5.00
Less: financial investment and other transfers	-5.25	-6.14	-5.80	-1.58	-5.78	-5.58	-2.58	-1.96	-1.92	-1.57	-2.05	-2.85	-5.69	-2.09	-2.40	-2.61
Capital formation	6.36	7.58	7.58	5.75	8.68	5.69	5.15	4.18	5.51	5.21	2.60	2.52	2.11	2.12	2.27	5.10
Total expenditures	81.55	59.58	40.59	9.86	55.01	55.25	54.16	57.18	50.20	27.98	27.09	29.14	34.90	52.65	55.01	52.65
Overall surplus	-5.51	-9.75	-4.12	-10.52	-6.61	0.02	3.04	0.95	2.22	5.15	5.50	2.92	-2.28	-5.04	-5.53	-5.66
Financing	3.50	0.76	1.12	12.27	6.72	-0.02	-5.04	-0.95	-2.22	-5.17	-5.49	-2.91	2.28	5.04	5.52	5.66
External (net)	-0.67	-0.59	-0.09	0.95	4.00	-5.50	-2.49	-0.92	-0.55	-1.00	-0.75	-0.55	-0.54	-0.12	0.75	5.06
Drawings	1.12	0.71	0.25	2.11	4.08	2.55	1.10	1.25	1.99	0.28	0.19	0.14	0.52	0.06	0.14	0.14
Amortization	-1.19	-1.29	-0.54	-1.16	-4.41	-5.85	-9.94	-2.17	-1.82	-1.28	-0.95	-0.67	-0.86	-0.78	0.4	0.14
Internal (net)	5.58	10.35	14.20	11.52	7.05	5.47	0.89	-0.01	-1.70	-4.17	-4.75	-2.59	2.62	5.16	2.77	0.60
Banking system	5.14	12.45	14.42	10.25	5.93	2.80	1.28	-0.67	-1.16	-4.70	-5.49	-2.12	2.78	2.90	0.14	0.14
Other discrepancies and statistics	0.45	-2.10	-0.22	-0.65	0.96	0.67	-0.18	0.66	-0.54	0.55	-1.25	-0.27	-0.15	-0.26	0.14	0.14

Source: Budget Office, Ministry of Finance of Chile.

On the revenue side, generalized adjustments in the tariffs of public enterprises resulted in almost a 9 percent of GDP increase in revenues from net sales of goods and services during 1973–74 (Table 2). Several state-owned companies, such as ENAP, ENDESA, and CHILECTRA, multiplied their prices in real terms by more than 900 percent, while the state telephone company adjusted its real prices by over 100 percent of their 1973 level. These efforts resulted in the elimination of massive deficits in public enterprises and the establishment of relative prices closer to opportunity costs. Other sources of reduction in fiscal pressures were the privatization of an important number of firms, as well as the elimination of the subsidies to the area of social ownership (a large number of firms in the manufacturing sector that had been taken over by the government during the Allende years), which represented savings in expenditures of 9.5 percent of GDP in 1974.

As regards the evolution of the main accounts of the general government (Table 3), current expenditures, which had reached 33 percent of GDP in 1972, were rapidly adjusted downwards by almost 7 percent of GDP by the end of 1973. Wages and social security contributions were the central variables involved in the adjustment. Together they were reduced by more than 9 percentage points. There is some evidence from real wages and employment indicators that the reduction, at least in the initial stages, basically came from a contraction in earnings. Revenues fell in the same year by almost 6 percent of GDP.⁶ This was the consequence of the operation of the Olivera-Tanzi effect in the Chilean economy. Although the acceleration of open inflation with the lifting of the price controls significantly contributed to the erosion of public receipts, the net result of these policies was a reduction in the public sector deficit from 30.5 percent of GDP in 1973 to 5.4 percent in 1974 (Table 2).

In contrast to declining current government expenditures and the necessity of cutting government expenditures for stabilization purposes, public capital formation expenditure increased from 8.4 percent to 12.5 percent of GDP as shown in Table 1 for 1973–74. Accompanying the fiscal contraction was a reduction in the flow of internal financing to the public sector from 30.4 percent of GDP in 1973 to only 5.5 percent of GDP in 1974. Since nonmonetary financing was very small most of this reduction was in the form of Central Bank credit to the public sector. As a result, the ratio of issuance of high-powered money to GDP fell from 9.3 percent in 1973 to 5.2 percent in 1974. In terms of the expansion of the credit given to the public sector, there were major reductions in nominal growth, although the monetary base continued to grow at nominal rates of more than 300 percent annually (Corbo (1985b)).

⁶For more details about general government accounts, see Larrain (1988).

As part of the domestic adjustment to severe external shocks, a further fiscal adjustment was initiated in 1975. It included severe reductions in current government outlays and a 10 percent temporary jump in income and property taxes and excise taxes on luxury goods.

At the same time, a major fiscal reform was implemented with the purpose of generating additional resources for the budget and reducing the relative price distortions created by the tax system. The reform incorporated the replacement of the old cascading sales tax by a uniform value-added tax of 20 percent; the introduction of full indexation of the tax system; the incorporation in the tax base of the undistributed corporate earnings; the elimination of preferential treatments, exemptions, and taxes on capital gains; the increase in road tolls and petroleum excises; the integration of the personal and business income tax; the increase of 10 percentage points in the income and property tax rates; and a reassessment of rural and urban real estate values.

In addition to raising resources and reducing distortions, these reforms were intended to reduce the incentives to evade taxes through better enforcement and the elimination of loopholes. Furthermore, the public enterprises continued their adjustment with the final objective of becoming at least self-financing and eventually profitable through the improvements in operational efficiency and price corrections. In 1975 the consolidated public budget reached an overall deficit of 2 percent of GDP (Table 2), in spite of a serious recession in which GDP fell by more than 12 percent (Table 1). Government expenditure items increased as a proportion of GDP, such as social security contributions, transfers to the private sector, and interest on public debt. These increasing expenditures made the required adjustment even more difficult, as they represented an additional disbursement of 5.3 percentage points of GDP. This phenomenon can be explained, first, by rigidities in the absolute level of social security payments and the generalization of unemployment benefits as the unemployment rate sharply increased during the recession, and, second, by the deregulation of financial markets that resulted in a large increase in the observed interest rate.

The burden of the adjustment on the expenditure side was carried mainly by the government wage bill, as it decreased by 0.8 percent of GDP. In fact, the government continued its policy of personnel reduction. Between 1973 and mid-1977 nearly 100,000 public employees were fired. Public investment fell more than 3.4 percentage points of GDP in 1975, returning to the historical levels of below 10 percent of GDP (Table 2). This was the consequence of not only the stabilization program but also of a deliberate decision taken by the government authorities that the private sector should take the leadership with respect to the expansion of the economy.

On the revenue side, the government collected further funds, measured as a proportion of GDP, as a direct result of its new tax policy. A profound deterioration in the terms of trade negatively affected the resources transferred to the consolidated budget by the copper enterprises. The replacement for this loss of revenue came from the increased tax burden on the private sector which resulted from the tax reform. In 1974, the current revenues of the general government represented 30 percent of GDP, whereas in 1975 this ratio grew to 34.9 percent of GDP (Table 3). This movement is explained by higher revenues relative to GDP obtained from property and income taxes, additional resources which accounted for 2.2 percent of GDP. At the same time further resources were also collected from indirect taxation. In total, tax collection increased more than 4 percentage points of GDP, with most of this increase explained by the introduction of the VAT and the changes in direct taxation implemented as part of the stabilization package and the tax reform. Further achievements in the normalization of public finance were made in 1976 as the chronic deficit of the nonfinancial public sector turned into a surplus of almost 4 percent of GDP for the first time in decades. This time the contribution to current revenues came mainly from higher non-tax revenues of almost 5 percentage points of GDP (Table 2).

On the expenditure side, there was overall stability, but change in composition across different items. Thus, an additional adjustment took place in personnel outlays, which fell from 14.8 percent of GDP in 1975 to 12.1 percent of GDP in 1976. At the same time, associated with the sharp increase in unemployment, the increase in the payments of unemployment benefits was reflected in the expansion of the transfers and subsidies to the private sector observed between 1975 and 1976 that accounted for almost 2.3 percentage points of GDP. Although there was also a downward movement in the interest payments of the public debt, investment behavior was the key for explaining the overall surplus reached. The government decided to reduce investment spending by more than 3 percentage points, to approximately 6 percent of GDP.

For the economy, 1977 was a recovery year. Current revenues of the consolidated budget were similar to those of the previous year. There were some changes in the composition of taxation as direct tax revenues diminished from 9.6 percent of GDP in 1976 to 8 percent of GDP in 1977, and indirect taxation increased from 14 percent to 14.9 percent of GDP. The downward movement in direct taxation is explained by decreasing property tax collection, while the evolution of indirect taxation was mainly influenced by the increase in international trade taxes by more than 1 percentage point. Although the government had undertaken a generalized tariff reduction, the movement in trade tax revenues reflected an increase in the import-to-GDP ratio, as the economy was becoming more open to

foreign trade. On the expenditure side, the wage bill increased from 12.1 percent of GDP in 1976 to 15.8 percent of GDP in 1977, and public investment showed a recovery to levels near 7 percent of GDP.

Table 3 indicates that from 1977 until 1980 general government spending showed a decreasing trend from 33 percent to 24.5 percent of GDP, reflecting a wide-ranging expenditure-cutting policy. On the revenue side, indirect taxation became increasingly important. Property taxes declined over 1977–80. The improvement in its administration explained the increasing significance of VAT in public revenues. The public sector surplus was largely attributable to improved public savings plus curtailed public investments. The first was the result of the policy of reducing the size of personnel outlays and other expenditures, whereas the second was the consequence of a deliberate policy of retrenchment. In fact, Table 2 shows that wage expenditures declined from 15.8 percent in 1977 to 13 percent of GDP in 1980.

The surplus of public companies continued, growing with further improvements in efficiency and higher tariffs, set in many cases according to the marginal-cost criterion. The priority given to social spending in conjunction with the costs of the social security reform accentuated austerity. In particular, special emphasis was given to restricting the level of public investment. In fact, public investment fell from close to 7 percent in 1977 to 5 percent of GDP in 1981 (Table 2). The intensity of the austerity effort of the public sector can be better understood when one considers that during the social security reform the public sector transferred a large portion of its social security contributions to the private sector, as many workers chose to switch to the new capitalization system. There was a simultaneous increase in the payment by the public sector through the recognition of past contributions of those who changed from the old system to the new one. Thus, part of the deterioration in the public sector surplus was just an accounting convention. The government stopped collecting social security taxes, but at the same time transferred resources to private institutions administering pension funds to cover the contributions of the people who changed systems and also stopped acquiring future pension liabilities.

As a consequence of the overvaluation of the peso and of the low international price of copper, in 1981 a reduction in revenues from the tax on copper represented 2 percent of GDP (Table 3). The social security reform enacted in 1981 accounted for lower contributions to the public sector of 0.8 percent of GDP. In terms of expenditures, however, even though wage expenses continued to decrease in 1981, social security payments went up from 7.1 percent to 8.2 percent, as a result of the social security reform. At the same time,

the subsidies given to the private sector increased from 4.1 percent to 6.9 percent. Overall, the surplus of the public sector fell to 0.8 percent of GDP (Table 2).

During the recession of 1982, public sector revenues severely contracted in real terms. Current revenues as proportion of GDP decreased from 34.2 percent of GDP in 1981 to 33.9 percent of GDP in 1982. Although the ratio for direct taxes remained constant, significant fiscal revenues were lost from income taxation. This was offset by a lower absolute deterioration in revenues from copper taxes than in GDP, thanks to a real devaluation. As a result, the absolute loss of direct tax revenues was of the same magnitude as the fall in GDP.

The revenues from indirect taxation were also affected sharply by the crisis. The ratio of indirect taxes levied on goods and services to GDP remained more or less the same, but the evidence for import levies revealed a contraction higher than the one for GDP, declining from 2.3 percent to 1.4 percent of GDP (Table 3). The severe recession of 1982 had a tremendous negative effect on government revenues. At the same time, the share of current public sector expenditures increased almost 6 percentage points of GDP, reflecting to some extent the presence of downward rigidity.

Interest payments in 1982 increased because of a predetermined level of debt, the higher interest rates, and a decline in GDP (Table 2). Subsidies increased as a proportion of GDP as they were used to compensate several sectors negatively affected by the crisis. The wage bill decreased in absolute terms by less than the decline in GDP. Relative to GDP it increased from 11.8 percent in 1981 to 12.2 percent in 1982 (Table 2). As expected, the pension payments went up and contributions went down after the social security reform. Adding the surplus generated by the new pension system to the overall deficit of the public sector resulted in an overall deficit of 0.7 percent of GDP compared with a true public deficit of 3.4 percent.

Capital formation remained stable near 5 percent of GDP. In 1983 revenue generated from indirect taxation showed a significant recovery, especially in international trade, as the uniform tariff was raised in June from 10 to 20 percent. Meanwhile, income tax revenue decreased. Further adjustments were applied to the earnings of public employees, with the wage bill dropping from 12.2 to 10.7 percent of GDP. Overall, the budget showed a deficit of 3 percent of GDP. The surplus coming from public corporations recovered in this period, as a real devaluation generated higher benefits for companies selling tradable goods.

In 1984, the government initiated another fiscal reform effort, focusing this time on the direct tax system. In principle, the goal was to reduce the bias against savings that results from a direct tax based

on income. By applying an approach based on the taxation of expenditures, the government hoped to increase private investment and savings. The main elements of the tax reform were:⁷

- A gradual reduction was taken in the marginal rates of the personal income tax as well as an enlargement of the marginal income within a bracket. The maximum reduction was implemented in the highest bracket of income; the marginal rates for this income level were reduced from 58 to 50 percent. (Owing to a poorer fiscal performance than expected, restrictions, an important part of the marginal rates reductions, were not implemented.)
- The tax base for income was reduced by allowing a deduction of up to 20 percent for the purchase of stocks. This deduction could not be higher than 20 percent of the tax base.
- Measures were taken to eliminate some of the discrimination among different sources of incomes.
- Only distributed profits were considered in the income base.

In 1984, for the first time since 1981 the nonfinancial public sector achieved positive savings in its current account. There were higher revenues from both income and indirect taxes. A new upward adjustment from 20 to 35 percent in the uniform tariff rate was adopted. As a result, revenues from international trade taxes increased from 2.3 to 3.3 percent of GDP (Table 3). Partly reflecting the effects of the tax reform, indirect taxation showed an expansionary trend, increasing from 14.6 percent of GDP in 1983 to 17.1 percent in 1985. Non-tax revenues were stable over the period.

On the expenditure side of the nonfinancial public sector, wages and salary expenses continued their contraction, as they declined from 10.7 percent to 9.7 percent of GDP over 1983–85. With the exception of interest payments, other major current expenditures remained more or less stable.

Gradually, the government began to increase its share of public investment in GDP, while the public deficit declined from 1984 onwards (Table 1). In 1984 the public deficit accounted for 4.4 percent of GDP; by 1987 this indicator dropped to 1.6 percent. This result was made possible by a tremendous savings effort by the public sector. Not only were general government expenditures adjusted in relation to the evolution of the revenues, but public enterprises continued to increase their operating surpluses. In part, this reflected the positive effect of the real depreciation on the net revenue of public enterprises in tradable sectors (especially mining).

As noted above, fiscal policy had been extremely austere consider-

⁷For a complete description of the reforms, see Marfan (1984).

ing the significant deficit of the public sector inherited by the social security reform. One of the most dramatic structural adjustment policies undertaken by the Chilean government has been the elimination of the public sector deficit.⁸ This was all the more impressive since it was accomplished at a time when the terms of trade losses were significantly affecting government revenues. Once the public sector deficit had been eliminated in 1976, the government was able to embark on other reforms. In particular, it began to ameliorate the severe anti-export bias of the trade regime by reducing the level and dispersion of tariffs and by lifting quantitative trade restrictions.

Different factors contributed to the dramatic turnaround in the public sector deficit. First, the introduction of a VAT system resulted in substantial revenue collection. Second, an important reduction occurred in the losses of public enterprises. Finally, a large reduction in the wage bill resulted from reduction in real wages and a decrease in public sector employment.

International Trade Policies During 1974–87

The nationalization of the trade regime started in 1973 and was completed by 1979. There was some backtracking in the early 1980s, but it was stabilized by 1986. Between September 1973 and July 1975, the maximum nominal tariff was reduced from 750 percent to 120 percent, while the weighted average dropped from 105 to 57 percent. By early 1974, the public sector was subject to the general regime of international trade. In August 1975, the economic authorities proposed a new tentative tariff structure with effective tariff rates ranging from 10 to 35 percent, and with effective protection being an increasing function of the degree of processing of each good. The trend toward trade liberalization continued so that by 1976 all quantitative restrictions were eliminated. In September of the same year, prior deposit requirements on imports, excluding cars and used merchandise, were removed. The list of permitted imports was replaced by a short list of prohibitions. The proposed structure of tariffs was reached in August 1977, ahead of the original schedule. During this period the mean weighted tariff decreased from 44 to 19.7 percent.

In December 1977, the government announced its intention to achieve a uniform tariff of 10 percent by June 1979. This downward adjustment was done gradually by means of small monthly adjust-

⁸One needs to qualify this statement by noting that in the period 1984–86 the Central Bank incurred large quasi-fiscal losses as a result of direct support to faltering financial institutions and from exchange rate losses. However, by 1987 most of these losses had disappeared.

ments that pushed the weighted average tariff down from 19.7 percent to 10.1 percent. By June 1979 all items, with the exception of automobiles, were subject to a nominal tariff of 10 percent. The last important trade liberalization measure of the pre-recession period was the elimination of the list of forbidden imports.

Since June 1979, the tariff policy has been modified by compensatory duties applied to countervail foreign dumping policies and by changes in the uniform tariff level. Surcharges plus the tariff could not exceed 35 percent. This policy, established in November 1982, affected 15 products in 1982, 15 additional ones in 1983, and 4 more in 1984. However, by the end of 1986 only 16 products were subject to compensatory duties.

From 1983 onward, several changes were introduced to the former uniform tariff of 10 percent. In June 1983 the tariff was increased to 20 percent in response to temporary public resource needs. Later, the government permanently set the tariff level at 20 percent.

In September 1984 a new change in commercial policy was defined, raising the uniform tariff from 20 percent to 35 percent. Authorities justified the policy as a way of avoiding a crisis in the external and public accounts.

In February 1985, the new minister of finance announced his intention to adjust the level of the uniform tariff downward. Under the program, it was proposed that the uniform tariff reach levels of 30 percent and 25 percent in the first semester of 1985 and 1986, respectively. By March of 1985 the tariff level reached 30 percent and in June of the same year a further reduction to 20 percent was taken, not only surpassing the targeted level but also ahead of schedule. Finally, in January 1988 the level of the uniform tariff was further reduced to 15 percent.

Effect of the Reforms

What was the effect of these macroeconomic (fiscal, monetary, and exchange rate policies) and trade policies on the evolution of the Chilean economy? We will start our analysis by examining the effects of the reforms on the evolution of inflation and the real exchange rate. The former is a key indicator of macroeconomic stability and the real exchange rate has important resource allocation effects.

As the public sector deficit began to be reduced, the need for monetary financing slowed down and so did inflation. The relation between monetization of a public sector deficit and inflation can be obtained by examining the equilibrium in the money market (for a recent reference, see Dornbusch and de Pablo (1988)). Assuming that

the public sector deficit is g percent of GDP and fully monetized the increase in the supply of money is

$$\dot{M} = g(\pi)Y \cdot P \quad (1)$$

where Y is real GDP, π is inflation, P is the price level. Here we assume $g'(\pi) > 0$ owing to the Olivera-Tanzi effect (Olivera (1967), Tanzi (1977)).

Assuming that the demand for money is given by the following velocity equation $V = \alpha + \beta\pi$ $\alpha, \beta > 0$ and assuming monetary equilibrium, we obtain

$$\frac{PY}{M} = \alpha + \beta\pi. \quad (2)$$

Substituting (2) into (1) and using the steady state relation $\pi = \theta - y$, where θ is the rate of growth of money and y , the rate of growth of real GDP, we finally obtain

$$\pi = \alpha g(\pi) - y \text{ stability for } g(\pi) = g \text{ requires } 1 - \beta g > 0.$$

For $g(\pi) = g$ we get $\pi = \alpha g - y / 1 - \beta g$ with inflation an increasing function at an increasing rate of the budget deficit to GDP ratio (g).

By using this model we infer that as g decreased, the long-run steady state rate of inflation decreased. However, the slowdown of actual inflation was much slower than the trajectory for the steady state rate of inflation. Indeed, by 1976, while the public sector deficit as a share of GDP had been reduced from a deficit of 30.5 percent in 1973 to a surplus of 3.9 percent, inflation was reduced from 418.1 percent a year in 1973 to 250.79 percent a year in 1976 (Table 1).

The slow reduction of inflation can be attributed to strong inertia in an economy with widespread backward indexation of financial, labor and commodity contracts. Strong evidence on inertial inflation for part of this period is presented in Corbo (1985a). There is much discussion about the role of monetary policy during this period.

Harberger (1982) concludes that there was no monetary crunch to force a sharp cut in money supply as a result of monetary expansion for foreign exchange accumulation. While Edwards and Edwards (1987) conclude that there was a policy of tight money (pp. 31–33). However, the sharp increase in real interest rates and the decrease in $M1/PY$ and $M2/PY$ while inflation was being reduced provide strong evidence that monetary policy was tight (Table 4).

Table 4. Chile: Financial Indicators, 1969-87

Capital Account (1)	Current Account (2)	Change in Reserve (3) (In percent of GDP)	Errors and Omissions (4)	Change in M1 (5)	Change in M2 (6)	Real Interest (7)	Adjustable Interest (8) (In percent)	Real LIBOR (9)	M1/GDP (10)	M2/GDP (11)
1969	2.7	-0.1	2.1	-0.6	40.2	3.7	—	8.0	14.2	14.5
1970	3.2	-1.0	1.3	-0.9	51.8	—	—	9.2	15.0	15.2
1971	0.4	-1.8	-2.2	-0.8	98.6	—	—	-12.5	23.1	23.0
1972	3.8	-3.1	-0.7	-1.4	96.0	—	—	-23.0	24.5	23.8
1973	4.3	-2.8	0.9	-0.6	272.5	—	—	8.7	18.7	18.7
1974	1.8	-1.9	-0.7	-0.6	259.8	—	—	39.3	8.4	9.5
1975	5.0	-6.8	-3.1	-1.3	249.1	16.0	—	32.6	7.6	9.8
1976	0.2	1.5	2.4	0.7	195.3	64.3	—	-15.7	6.2	10.1
1977	4.7	-4.1	1.2	0.7	116.9	56.8	—	-17.8	6.0	11.9
1978	13.1	-7.1	5.1	-0.9	73.4	42.2	—	7.5	6.1	15.3
1979	11.8	-5.7	6.1	-0.1	59.5	16.6	22.9	-3.4	6.2	16.8
1980	13.4	-7.1	6.4	0.2	59.4	11.9	15.3	-11.5	7.1	18.6
1981	13.3	-14.5	-0.9	0.3	8.7	38.7	14.5	-2.5	6.5	24.2
1982	4.9	-9.5	-0.9	0.3	-9.0	35.1	16.9	34.7	6.1	25.9
1983	2.5	-5.6	-2.8	0.3	26.8	16.5	10.0	33.6	6.1	25.9
1984	10.4	-10.7	0.2	0.5	7.6	11.7	9.0	15.9	5.4	20.1
1985	7.9	-8.3	-1.2	-0.7	28.3	11.5	9.4	35.7	5.1	20.4
1986	6.3	-6.5	-0.5	-0.3	44.1	6.4	7.6	7.1	5.8	20.2
1987	6.5	-4.8	0.5	-1.2	7.6	9.6	7.3	1.8	5.0	23.0

Source: Banco Central de Chile, *Indicadores económicos y sociales, 1969-87, Síntesis monetaria, Informe económico y financiero*.

Notes:

(1) = (5) - (2) - (4)

(4) corresponds to the change in the stock of reserves of the Central Bank defined as assets less uses of IMF credit.

(5) and (6) were constructed based on an average holdings variations between end-of-year months.

Until 1979, the source is Morán, *Estadísticas trimestrales de producción y dinero para la economía chilena* (Santiago: University of Chile, 1983).From 1980, Banco de Chile, *Síntesis monetaria and Informe económico y financiero* (Santiago: Banco Central de Chile).

(7) corresponds to the ex-post real interest rate for one month loans; from 1975 until 1982, bank rates; from 1983, average of the financial system indexed interest rates charged for three-months to one-year operations.

(9) corresponds to the LIBOR for six-month operations expressed in real terms.

On the real side, following the large public sector adjustment that resulted in a reduction in the public sector deficit equal to 25 percentage points of GDP, real GDP growth achieved 1.0 percent following a drop of 5.6 percent in 1973 (Table 1).

In late 1974 and early 1975, when international capital markets were practically closed for Chile, copper prices were cut almost in half and the price of oil quadrupled. The terms-of-trade loss was substantial, and as neither financing nor foreign reserves were available, there was no other option but to undertake a radical adjustment program. The real exchange rate was devalued a further 22.9 percent in 1975 and the public sector achieved a surplus equal to 3.9 percent of GDP.

Because of the fiscal and monetary crunch, the price stabilization effort, and severe external shocks, Chile's GDP dropped 12.9 percent in 1975. The successful fiscal adjustment was even more dramatic if one considers this drop in GDP. Beginning from that low level in 1975, Chile achieved substantial success, as GDP growth reached 3.5 percent in 1976 and then surpassed 8 percent for three consecutive years. Moreover, inflation was reduced and the balance of payments crisis had been left behind. Non-copper exports grew at 31.7 percent a year between 1975 and 1979.⁹ Furthermore, while trade was being liberalized manufacturing output was growing at 7.6 percent per year over the 1975–79 period. The average annual rate of growth of GDP reached 7.5 percent. This performance was largely attributed to a "realistic" real exchange rate (Figure 1), the opening up of the economy to foreign trade, and by the dismantling of numerous government controls across all markets.

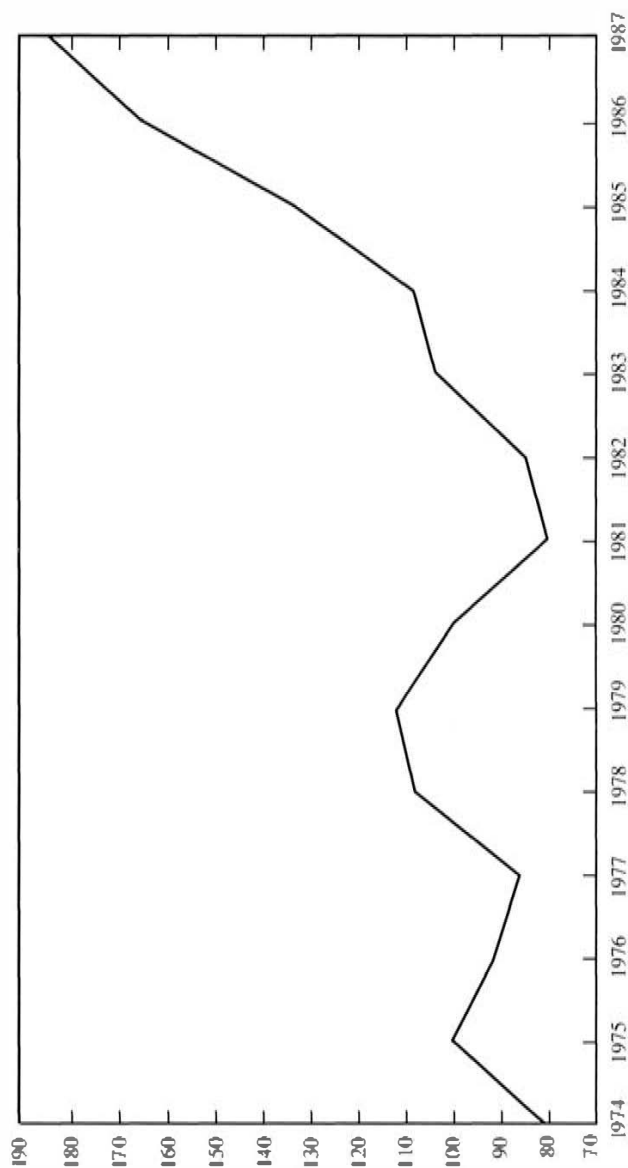
An active crawling peg policy, with a decreasing rate of growth, was introduced in February 1978. It was later replaced in June 1979 by a fixed rate, which led to the beginning of the appreciation of the real exchange rate.

The active crawling peg policy was the *main* stabilization device and induced a major portfolio adjustment which resulted in major capital inflows. In effect, the active crawling peg amounted to a devaluation (at a decreasing rate) substantially below the previous month's inflation. Thus, the gap between domestic interest rates (determined mainly in a highly distorted domestic financial market with large reserve requirements) and the expected devaluation-augmented foreign interest rates was considerably increased. The negative international real interest rates contributed to even a wider spread.

The large spread between domestic and foreign interest rates trig-

⁹Using the U.S. wholesale price index as deflator for the value of exports, the volume of non-copper exports grew 19 percent yearly.

Figure 1. Real Exchange Rates, 1974-87
(Index: 1975 = 100)



gered large capital inflows.¹⁰ Capital inflows went from \$572 million in 1977 to \$1,946 million in 1978, \$2,248 million in 1979, \$3,165 million in 1980, and \$4,769 million in 1981. As a share of GDP net capital inflows grew from 4.3 percent of GDP in 1977 to 14.6 percent of GDP in 1981 (Corbo (1985b), p. 896).

The increase in capital inflows and a drastic reduction in reserve requirements to reduce the taxation of financial intermediaries resulted in a large monetary expansion. Consequently, this pushed the domestic interest rates down and supported a large expansion in absorption that reached an average annual growth rate of 10.5 percent a year for 1979–81. During 1979 and 1980 monetary policy was very expansionary, also as a result of drastic reduction in reserve requirements. The combination of tight fiscal and expansionary monetary policy and large capital inflows encouraged a large boom in private expenditures, especially investment. The final consequences of the unsustainable increase in expenditures were a large erosion in competitiveness, a very weak commercial account in the balance of payments, and heavy external borrowing. Indeed, the peso appreciation was a second and more intensive trade liberalization.

By the end of 1981, Chile was facing an unsustainable macroeconomic threat. The current account deficit was close to 15 percent of GDP and a large real appreciation was jeopardizing the entire liberalization experiment, especially the trade liberalization strategy.

The new external shock of 1982 in the form of a drastic reduction in external financing, a large increase in international interest rates, and a further drop in the terms of trade forced a drastic and long-overdue macroeconomic adjustment.

This change in macroeconomic fundamentals required a reduction in expenditures, which, in turn, had to be accompanied by a much depreciated real exchange rate to avoid an increasing unemployment. At first, the government tried to achieve both objectives by allowing the supply of money to contract following the drop in foreign reserves. In an economy with still widespread indexation, the monetary contraction did not help much in accomplishing a real devaluation and instead resulted in a drastic contraction in production. Not surprisingly, the unemployment rate increased sharply from 11 percent in March 1981 to 25 percent in June 1982, in spite of massive public employment programs that were “employing” another 6 per-

¹⁰Some observers (Edwards and Edwards (1987) and Harberger (1985)) attribute most of the increase in capital inflows to the lifting of restrictions to these inflows. However, as indicated in the Appendix to Corbo (1985b), significant restrictions to capital inflows remained until 1982. Furthermore, the large spread between domestic and foreign interest rates created large incentives for capital inflows and pressures on the Central Bank authorities for a lifting of the controls.

cent of the labor force. By the middle of 1982 the orthodox adjustment program was abandoned, wage indexation was eliminated, and a series of nominal devaluations were introduced to produce a large real devaluation. The drastic recession of 1982 and the large devaluation initiated in the second half of that year unveiled a major financial crisis that resulted in the government's intervention of the main private financial institutions. The renegotiation of the external debt followed suit.

Between 1982 and 1987 the real devaluation reached 117.3 percent. After the large recession of 1982 and a small drop in GDP in 1983, real GDP growth averaged 5.0 percent a year. The average unemployment rate that had reached 22.1 percent in 1982 had been reduced to 12.3 percent by 1987. After some increase in inflation following the large nominal devaluation of the previous years, the rate of inflation slowed down to 19.9 percent in 1987. The public sector deficit was reduced to 1.6 percent of GDP in 1987.

After the initial stages of crisis management, which involved some reform reversals such as an increase in tariffs (Figure 2), Chile resumed with full vigor its previous policy of export-oriented growth. After the traumatic experience of 1982–84, the macroeconomic policy mix aimed at achieving a real exchange rate compatible with the main underlying fundamentals (terms of trade, interest rates, and resource transfers). To accomplish this, since the end of 1982 monetary and fiscal policies have been moderate and the peso has been devalued daily in order to achieve a much depreciated real exchange compatible with the changes in fundamentals (Fontaine (1987)).

As a response to the resulting real devaluation, there has been a drastic increase in private and public savings and in private and public investment, non-copper exports reached an average yearly growth of 10 percent in real terms over the period 1984–87, GDP had grown at a rate of 5.0 percent, and the unemployment rate has dropped to 12.3 percent (Table 1). Finally, the net resource transfer was reduced from a net inflow of 12.9 percent of GDP in 1981, to a net outflow of 4.9 percent of GDP in 1987 (Table 5). Thus, the turn around in net resource transfers was an astonishing 17.8 percentage points of GDP.

Conclusions

Four main conclusions can be drawn from Chile's experience. First, the liberalization and stabilization reforms implemented during the early years of the military government, in spite of the unfavorable external shocks of 1975, succeeded, until late 1978, in slowing down inflation, reducing sharply net transfers and recovering

Figure 2. Average Tariff, 1974-87
(In percent)

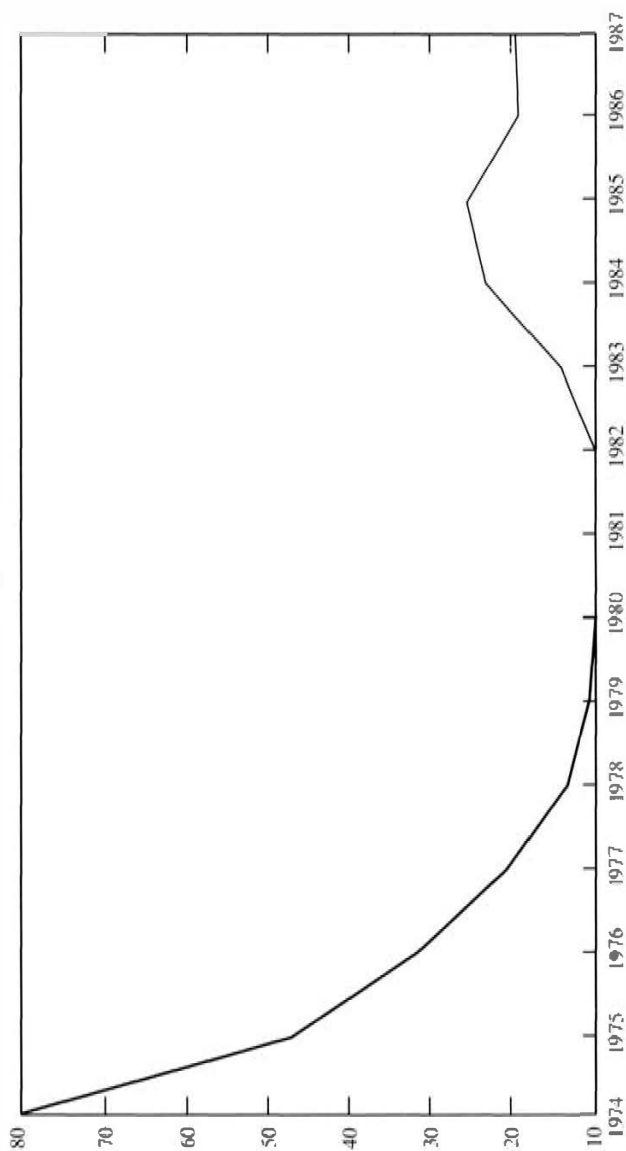


Table 5. Chile: Selected External Indicators, 1960–87

	Non-Copper Exports	Private Debt ²	Public Debt ²	Debt Ratio ³	Resource Balance ⁴
	(In millions of 1987 U.S. dollars) ¹	(In millions of U. S. dollars)			(In percent of GDP)
1960	480.1	222	400	14.5	-8.2
1961	518.8	330	465	16.6	-9.6
1962	550.0	426	563	17.4	-7.2
1963	533.1	448	700	26.4	-6.6
1964	747.0	484	815	19.8	-7.4
1965	813.4	499	970	24.0	-7.0
1966	823.7	539	1,058	24.3	-12.2
1967	686.2	536	1,236	26.0	-9.3
1968	678.7	634	1,456	30.9	-10.6
1969	714.3	770	1,777	33.4	-12.8
1970	758.0	549	2,218	33.7	-12.5
1971	803.1	441	2,305	25.9	-13.3
1972	596.4	413	2,589	24.3	-15.9
1973	594.2	399	2,862	31.6	-15.1
1974	1,011.7	443	3,583	36.4	-11.3
1975	1,267.1	670	3,597	59.1	-1.2
1976	1,481.9	799	3,475	43.3	2.1
1977	1,619.7	990	3,520	33.8	-1.8
1978	1,822.4	1,570	4,353	38.5	-3.2
1979	2,539.8	2,736	4,771	36.2	-5.2
1980	2,951.2	4,693	4,720	34.1	-6.7
1981	2,200.6	8,138	4,415	38.5	-12.9
1982	2,076.0	8,658	5,157	56.8	0.2
1983	1,984.9	8,143	6,689	75.0	4.1
1984	2,026.5	6,362	10,601	88.2	2.2
1985	2,005.8	5,479	12,161	110.1	6.4
1986	2,505.3	4,826	12,942	105.6	6.6
1987	2,900.5	2,627	14,725	92.6	4.9

¹Deflated by the U.S. wholesale price index.²Includes only medium- and long-term external debt.³In order to express total external debt to current pesos, the average nominal exchange rate of the banking system was used.⁴Measured with national account information at constant prices.

growth.¹¹ Furthermore, as this adjustment was taking place, the debt to GDP ratio increased initially, but by 1979 was back to a value similar to the one of 1974 (Table 5, column 4).

Second, the reduction of a large public sector deficit required strong actions, both on the expenditure and revenue side. The introduction of a value added tax and the adjustment in the tariffs of public utilities to reflect opportunity costs made major contributions

¹¹Of course, part of the favorable growth is a result of the low base following the 1975 recession, but one also needs to take into account the sharp drop in terms of trade.

to the reduction of the deficit. Structural reforms in the entire tax system were important in reducing the distortionary effects of the tax regime.

Third, the elimination of a large public sector deficit is a necessary but not sufficient condition for the control of inflation. Indeed, as the recent literature has shown, inertial inflation can make inflation reduction without income policies a slow and costly process (Kiguel and Liviatan (1988)). The second stabilization attempt, undertaken when inflation was down to 35 percent a year—a level similar to the average for the 1960s—worked at cross-purposes with the export-led growth being generated by the liberalization of trade. Indeed, the use of the exchange rate to stabilize a widely indebted economy created not only a temporal short-term real appreciation of the peso, but also encouraged external borrowing at a time when the restrictions on capital inflows were being lifted and international capital markets were liquid. The large rise in expenditures that followed the decrease in the interest rate and the increase in capital inflow caused the peso to appreciate further. The result was an unsustainable current account deficit that ran close to 25 percent of GDP in the first half of 1981. The appreciation squeezed tradables just when exporters were making inroads into world markets and when firms in the import-competing sector had completed a major adjustment to the trade liberalization. Not surprisingly, firms in the tradable sectors suffered a large squeeze on profits (Corbo and Sanchez (1985), Galvez and Tybout (1985)).

Fourth, once the macroeconomic mistakes of the late-1970s and early-1980s were corrected, Chile recovered its growth and reduced inflation. This was achieved in spite of a drastic reduction in the net transfer of resources received from the rest of the world and unfavorable terms of trade.

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