DISCUSSION PAPER


by

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THE ROLE OF THE REAL EXCHANGE RATE IN
MACROECONOMIC ADJUSTMENT: THE CASE OF CHILE, 1973-82

by

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Abstract

The purpose of this paper is to analyze the role of the real exchange rate in the recent macroeconomic adjustment in Chile. It is divided into five sections. Section II presents a brief summary of conditions in 1973 on the eve of the change in Chilean policy orientation, while Section III looks at the main policy reforms introduced by the military government from 1973-1982. The effect of the reforms on the real exchange rate and on the macroadjustment is the subject of Section IV, the subsequent adjustment to the drastic reduction of capital inflows in 1982 the topic of Section V. The last section presents the main conclusions.
I. INTRODUCTION

This paper analyzes the role of the real exchange rate in the recent macroeconomic adjustment in Chile. It is divided into five sections. Section II presents a brief summary of conditions in 1973 on the eve of the change in Chilean policy orientation, while Section III looks at the main policy reforms introduced by the military government from 1973-1982. The effect of the reforms on the real exchange rate and on the macroadjustment is the subject of Section IV, the subsequent adjustment to the drastic reduction of capital inflows in 1982 the topic of Section V. The last section presents the main conclusions. A chronology of the reforms is found in the appendix.

II. THE PRE-REFORM PERIOD

Beginning in the 1930s, Chile pursued the classic strategy of import substitution for its industrialization, with the government following a set of policies designed to shift the domestic terms of trade in favor of the manufacturing sector rather than the agricultural or 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 around 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).

Up until 1955 the trade policies, which were enacted mainly as ad hoc reactions to the 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. The period 1955-70 ended, in the later years of the Frei
government, at a point of mild trade liberalization. (For a review of these
policies, see Corbo and Meller, 1981.)

The structure of the effective rates of protection under the
different trade regimes in this period, in addition to discriminating against
exports, especially agricultural and mineral products, was characterized by
considerable variation across industries. The rates ranged from 1,140% for
coal and petroleum products (an import-competing sector) to -20% 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% were consumer goods, around 30% were
investment goods, and 55% were intermediate products. As the structure of
imports moved away from consumption goods and toward raw materials, parts and
equipment, which were essential for the functioning of the industrial sector
and for which there were no close domestic substitutes, the Chilean economy
became more vulnerable to fluctuations in the world economy. Furthermore, it
has been found that 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 et al., 1981.)

There were no major restrictions on capital inflows in this period,
although outflows were quite controlled. The inflows in 1968 are now 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 (Ffrench-Davis, 1973, p.
107).
By the end of the 1960s, GDP was stagnant while inflation was around 30% a year and unemployment around 6%. During the sixties as a whole, GDP grew at an average rate of only 4.2% a year, a low level when compared with the 6.4% annual growth of other upper middle-income developing countries in the same timeframe (World Bank, 1983).

The Frei government was succeeded by the Allende government in 1970. During the three years of its rule, from November 1970 to September 1973, the Allende administration tried to implement a radical transformation. Because of inadequate funding, the result was a large fiscal deficit and monetary expansion. 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 integral parts of the macroeconomic policies of the time. Furthermore, the banking sector was nationalized, a radical land reform program disrupted the agricultural sector, and the most important firms in manufacturing were taken over by workers and/or the government.

By the end of 1973, the Chilean economy was experiencing substantial macroeconomic imbalances. The external disequilibrium was contained by widespread restrictions on foreign trade -- differentiated tariffs, multiple exchange rates and extensive quantitative restrictions on imports and exports. Still the annual fiscal deficit ran more than 20% of GDP, while the rate of inflation was roughly 1,000% a year. With interest rates controlled and negative in real terms, organized capital markets were almost nonexistent.

The restrictions on commodity trade were varied and considerable by the end of 1973 (Torres, 1982). Ad valorem tariff rates ranged from 0% to
750%, with a mean value of 105%, a mode of 90% and a median of 80%. Among the tariff positions, 187 contained import prohibitions. For 2,872 tariff positions, a 90-day non-interest-bearing deposit equal to 10,000% of the CIF value was required.

As to the exchange rate system, during Allende's 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 late 1960s was abandoned in favor of a fixed nominal exchange rate. With domestic inflation substantially above international levels and with a growing fiscal deficit, this policy would 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 Allende's administration, the ratio between the highest and lowest official exchange rate was 52 to 1.

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 Direccion 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.

By September 1973, most of the financial system was in government hands, with credit rationing widespread, given that real interest rates were highly negative.

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 fiscal deficit was close to 25% of GDP, the 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% on an annual basis.

Given this situation, the military government spent its first two years trying to stabilize the economy. To eradicate the monetization of the fiscal 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 fiscal deficit. Good prices for copper in 1974 and a rollover of 30% 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% to 750% in the Allende years, to a maximum first of 140% and then 120%. 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 import-competting goods were reduced.

1/ This section draws on material from Corbo (1985b). For a chronology of these reforms, see the appendix.
## Table 1
### ANNUAL MACROECONOMIC INDICATORS, 1960-82

<table>
<thead>
<tr>
<th>Year</th>
<th>Tradable 1/</th>
<th>GDP 2/</th>
<th>Total 3/</th>
<th>Absorption 4/</th>
<th>GDP Deflator 5/</th>
<th>CPI 6/</th>
<th>Unemployment 4/</th>
<th>Price of Copper 8/</th>
<th>Fiscal Deficit 9/</th>
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<tr>
<td></td>
<td>(1) Non-tradables (2)</td>
<td></td>
<td>(3)</td>
<td>(4) (percentage changes)</td>
<td></td>
<td>(5) (percentage)</td>
<td>(6) (percentage)</td>
<td>(cents per pound)</td>
<td>(percentage of GDP)</td>
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<td>-</td>
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<td>58.6</td>
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<td>56.1</td>
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<tr>
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<td>6.6</td>
<td>0.2</td>
<td>250.6</td>
<td>16.8</td>
<td>63.6</td>
<td>2.3</td>
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<tr>
<td>1977</td>
<td>7.8</td>
<td>9.9</td>
<td>17.7</td>
<td>14.2</td>
<td>101.6</td>
<td>13.2</td>
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<td>12.7</td>
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<td>12.7</td>
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<td>1982</td>
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<td>-21.5</td>
<td>1.6</td>
<td>22.1</td>
<td>67.1</td>
<td>2.4</td>
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</table>

**Note:** The rate of change for columns (1) to (4) was computed from raw data at 1977 prices.

1/ includes agriculture, fishing, mining and manufacturing.

2/ includes construction and services.

3/ includes private consumption, public consumption and total investment.

4/ Greater Santiago.

**Source:** Columns (1) to (5), Cuentas Nacionales de Chile 1960-1982, Central Bank.

Still, by late 1974 and early 1975 the external crisis had become increasingly apparent -- copper prices dropped almost 50% 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 (with, however, two revaluations of 10%, the first in early June 1976, the second in March 1977). Moreover, in the period 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% by July 1979. In addition, in 1976 the military government unified the multiple exchange rate system and instituted a crawling peg targeted to achieve a fairly stable real exchange rate.

There was little liberalization in two areas, 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 -- a compulsory 100% backward wage indexation was introduced starting in October 1974. 1/ (The prices of many non-tradables, such as housing rent, school fees, mortgage payments, public utility tariffs and the like, had already been fully indexed backward for some time.) The second area where there was no clear liberalization policy was capital inflows.

In the face of these various measures, following the strong recession in 1975, GDP grew at an annual rate of close to 10% in the period 1976-77,

1/ For a review of the indexation, see A. Edwards, (1984).
while the unemployment rate dropped to 13.2% in 1977, a level that was, however, still substantially above historical levels. The real rate of interest for loans in pesos averaged 45.4% a year in 1977 (Table 2, column 9). The inflation rate fell substantially below the 1973-74 level, although it was still close to 100% a year. 1/ In the first column of Table 1, it appears that in 1975, GDP in tradable activities dropped more than GDP in non-tradables. This result is mostly due to the fact that manufacturing GDP includes a large amount of non-tradable output which has been included as tradable in this table.

In the initial years of its rule, the military government had attacked inflation by controlling the growth of money. However, by early 1977, by which time Chile's economy had been opened to trade significantly, a debate developed within the government on the causes of inflation and the most appropriate way to deal with it. It was that debate which had led to the two 10% 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-competiting 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 as the main means of devaluation and hence stabilization. This policy of an active crawling peg

Table 2
QUARTERLY INDICATORS

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<tr>
<th>Total Net Capital Inflow</th>
<th>Surplus in Current Account</th>
<th>Change in Reserves</th>
<th>Change in Money Supply</th>
<th>Real Interest Rate</th>
<th>Real Interest Rate 2/</th>
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<td>167.8</td>
<td>-492.5</td>
<td>-322.1</td>
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1/ Column (1) to (6) in millions of dollars.
2/ This column sums up net capital inflow (article 14) plus short-term capital movements through the banking system.
3/ For value.
4/ The annuited expected rate of inflation and devaluation were assumed to be equal to

\[
\left(1 + r_t \right) = \left(1 + \beta_t \right) \left(1 + \gamma_t \right)
\]

where \( r_t \) : Period t inflation
\( \gamma_t \) : Period t devaluation.

with a decreasing rate of crawl was anticipated. What was not anticipated was that the initial rate of devaluation was substantially below the previous month's inflation, despite the government's announced intentions.

In June 1979, the exchange rate was fixed in 39 pesos per dollar, at the time the monthly rate of inflation was about 2.5%, substantially above the international level. Finally, in late 1979, the government introduced a new labor code that reestablished collective bargaining, albeit for just a fraction of the labor force, and mandated that the lowest offer employers could make had to equal the previous wage adjusted by inflation as measured by the CPI. This measure went well beyond the less extensive indexation that had been instituted in late 1974. Up to the end of 1979, Chile was achieving substantial success, GDP growth was 8% for three consecutive years, inflation was being reduced and the balance of payments crisis had been left behind. Non-copper exports grew at 31.7% per annum between 1975 and 1979. Furthermore, while trade was being liberalized manufacturing output was growing at 7.6% per year (1975-1979).

IV. THE EFFECT OF THE REFORMS 1/

What was the effect of these measures on the real exchange rate and on macroeconomic adjustment? After a large real devaluation in the early years, the real exchange rate for importables achieved its peak in 1974 (Table 3, col. 1) and the one for non-copper exports in the last quarter of 1975 (Table 3, col. 2). Then the real exchange rate for importables appreciated up

1/ This section draws on Corbo (1985b and 1985c).
to the second quarter of 1977 but then stayed fairly constant up to the third quarter of 1979. At that point it fell dramatically until the middle of 1982, when the entire exchange rate regime collapsed.

The real exchange rate for exportables appreciated from the fourth quarter of 1975 up to the second quarter of 1977 then stayed fairly constant up to the first quarter of 1978 when it appreciated again and stayed fairly constant, but at a lower level, up to the second quarter of 1979. Then following a real depreciation in the third quarter of 1979, it appreciated continuously up to the second quarter of 1982 when the fixed exchange rate regime was abandoned. By the second quarter of 1982 the real exchange rate for importables had dropped 57.6% and the one for non-copper exports 56.9% from their respective 1975 value. The relative price of tradables to wages in manufacturing dropped even more dramatically by 82.3% from 1975 to the second quarter of 1982. This evolution of the real exchange rate was closely related to the stabilization policy pursued and the liberalization of capital inflows. It was also strongly influenced by the program of wage indexation based on at least full compensation for past changes in the CPI introduced in late 1979.

Three goals had been behind the introduction of an active crawling peg system with a decreasing rate of crawl. First, the system was supposed to reduce the expected rate of inflation in what was by then a small, open economy. Second, it was supposed to provide downward pressure on the rate of increase in the price of tradables and thus help reduce the (by now) stubborn inflation. Third, it was expected to integrate the capital markets further and to reduce domestic interest rates by lowering the expected rate of
Table 3: MEASURES OF INTERNATIONAL COMPETITIVENESS

(1979:2 = 1.00)

<table>
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<tr>
<th></th>
<th>PM/PN</th>
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<th>PT/PN</th>
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* The nominal exchange rate is defined as the number of units of domestic currency per unit of foreign exchange.

PM = Price index of importables in pesos, obtained as a Laspeyres index of the exchange-rate-adjusted manufacturing components of the wholesale price index of Chile's major import suppliers: Argentina, Brazil, United States, Japan and Germany. The index uses the import structure of 1976 as a weighting base and it is also adjusted for average custom duties.

PX = Export price index in pesos, measured on a Laspeyres model of main Chilean exports excluding copper.

PM = Cortazar and Marshall (1980) CPI

W = Nominal Manufacturing Wage Index

PT = Arithmetic Average of PM and PX

n.a. = Not available. As most import restrictions during these years took the form of non-tariff barriers, we did not attempt to have a measure of domestic cost of importables for those years.
devaluation. When the crawling peg policy was formulated, it was also assumed that domestic inflation would rapidly converge with international inflation (plus the rate of devaluation). Thus, it was thought that the competitiveness of the tradable-producing sectors would not suffer much (Blejer and Mathieson, 1981; Mckinnon, 1980; and Direccion de Presupuestos, 1977 and 1978).

The convergence did not occur for two completely overlooked reasons. The first was the short-term dynamic of non-tradable prices and inflation in an economy with backward wage indexation. The second was the upward demand pressure in the market for non-tradable goods, which were being financed by the large capital inflows. These inflows were triggered by the crawling peg formula, which increased the spread between foreign and domestic interest rates (adjusted for risks). At the same time, the government was also lifting important restrictions on capital inflows. In Chile, the dynamic of inflation was associated with a long lag because of the backward wage indexation. Thus, it was overlooked that following a deceleration in the rate of devaluation and with aggregate demand held constant, a lengthy period of temporal peso appreciation would follow (Corbo, 1985a and 1985c) before the real exchange rate would return to its equilibrium value. This pattern in fact occurred, as shown in Table 3 and Figure 1.

Mckinnon (1980) had thought, when proposing this system, that it would, to the contrary, dampen capital inflows; that was one of the proposal's main attractions. For this dampening to happen, however, the active rate of crawl would have to have started high enough to have reduced the spread between the foreign and domestic rates of interest (adjusted by risk). Given the large spreads in February 1978, the initial rate of crawl thus should have
Figure 1

REAL EXCHANGE RATE
(1979:2 = 1.00)
been much higher than the one actually established. Moreover, the same effect could have been obtained by taxing capital inflows.

The active crawling peg policy in reality ended up creating a portfolio disequilibrium. 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, and the expected devaluation-adjusted foreign interest rate was increased considerably. 1/ This gap was especially great for people who had believed the tablita would be sustained.

The large capital inflows that followed -- $572 million in 1977, $1,946 million in 1978 and $2,248 million in 1979 -- pushed domestic interest rates down and increased permanent income and expenditures. This result can be called the expenditure effect of the crawling peg policy. Indeed, the ex post real peso interest rate of dollar-denominated loans decreased drastically after the pegging of the rate and was negative from the second quarter of 1978 through the last quarter of 1980 (Table 2, column 10). With restrictions on capital inflows being reduced, the drop in the actual cost of foreign borrowing was probably much higher than that shown by the reduction in the ex post real interest rate (the exact drop cannot be measured precisely as we use the LIBOR rate as a proxy for the cost of borrowing). In addition, the ex post real interest rate on peso-denominated loans was, on average, substantially lower in 1980 than in any of the previous six years. As explained below, this development was a natural consequence of the

1/ For the effect of an active crawling peg on financial markets, see Blejer and Mathieson (1981).
substitution, though imperfect, between traded and non-traded assets (Corbo and Matte, 1984).

Because of a favorable evolution in Chile's terms of trade, the real exchange rate for non-copper exports in late 1979 and up to the first quarter of 1980 was still above that during the first two quarters of 1979 (Table 3, column 2). In contrast, the real exchange rate for importables dropped continuously after the third quarter of 1979 (column 1). Thus, the loss in competitiveness of non-copper exports in relation to non-tradables took place much later than it did for the sectors producing importables.

The additional peso appreciation that followed the fixing of the exchange rate did not cause a domestic recession or a balance of payments crisis because expenditures increased and pulled the non-tradable sector of the economy, while the capital inflows financed the increasing current account deficit. The appreciation of the peso and the increases in the expenditure continued until the third quarter of 1981 without creating a balance of payments crisis, thanks to the growing capital inflows (Table 2, column 1). The increased expenditures could have resulted not only from the drop in the interest rate and the rise in permanent income, but also from a temporal appreciation that created an intertemporal substitution accelerating the purchase of durable goods (Dornbusch, 1985). Net capital inflows doubled between 1979 and 1980 and more than doubled between 1980 and 1981. Such inflows more than financed the current account deficit of 1978, 1979 and 1980, and the Central Bank accumulated reserves in both years (Table 2, column 4). These inflows were partly sterilized in 1979 and 1980 through a decrease in the domestic credit component of the money base (Table 2, column 5). But the sterilization was only partial, and the nominal money base grew 44.8% during
1980, pulling the increase in absorption. 1/ In 1981, by contrast, the Central Bank was responsible for a substantial sterilization.

The increased capital inflows reflected changes in both demand and supply. On the demand side, as seen above, there was an increase in the difference between the peso-denominated real interest rate and the dollar-denominated loans. On the supply side, restrictions on medium-term and long-term capital inflows were softened when international liquidity was increased and the international banking community adopted a much more favorable attitude toward Chile. This supply effect caused an appreciation on top of the one arising from the demand shift (Corbo, 1983 and 1985).

Some observers of the Chilean economy have attributed most of the appreciation to this latter phenomenon (Harberger, 1984; S. Edwards, 1985). However, if Chile had absorbed less foreign capital because of some quantity or price control, the drop in the real exchange rate would have been less pronounced (Corbo, 1983; Condon, Corbo and Melo, 1984; Harberger, 1984).

In 1981, partly because of the increase in international interest rates and partly because of a de facto restrictive monetary policy by the Central Bank, the nominal interest rate of peso-denominated and dollar-denominated loans increased substantially. The impact on the real interest rate was magnified by the substantial and unexpected decrease in domestic inflation. This decrease resulted mainly from the large appreciation of the dollar in international markets in conjunction with a dollar-pegged fixed exchange rate.

1/ Corbo and Matte (1984) show that contrary to what was thought at the time, the Central Bank did partly neutralize the monetary effect of the reserve accumulation, thus controlling the increase in absorption.
In addition to these internal developments, Chile suffered the effects of the international recession. In 1981, there was an overall terms-of-trade loss because of a deterioration in the commodity terms of trade and a substantial increase in the international interest rate. This loss, which was on the order of $1,200 million in 1981, or 3.4% of GDP, should have dampened the increase in expenditures. However, expenditures continued growing at rates far above the increase in GDP (at 10.8%, as compared to 5.3% for GDP). The implication is that Chileans had perceived a substantial increase in their permanent wealth. Indeed, between December 1977 and December 1981, the Chilean stock market price index septupled. As a result, the deficit in the current account rose to $4,814 million in 1981 (13.7% of GDP), almost $3,000 million more than that in 1980. On top of this permanent wealth effect, doubts about the sustainability of the exchange rate policy may have accelerated the purchase of durable goods at a time when access and cost of banking credit were very favorable.

The large current account deficit had as a counterpart a large deterioration in the relative price of tradables. Furthermore, because of the appreciation of the dollar in international markets, the expansion of expenditures took place at very low rates of inflation (9.5% in 1981, as against 31.2% in 1980). Indeed, the appreciation of the dollar was equivalent to a decrease in the nominal exchange rate.

Thus it seemed, in the first half of 1981, that Chile was having astonishing success in reducing inflation without pain. The rate of inflation was reduced, and through the externally financed increase in expenditures, there was a boom in the non-tradable producing sector that carried with it the rest of the economy. Net capital inflows, after reaching roughly 25% of GDP
in the first half of 1981, began to fall drastically in the fourth quarter of 1981 (Table 2, column 1). The recession usually associated with a drastic reduction in inflation started only when absorption started to decrease following the sharp drop in capital inflows. The real exchange rate was now out of equilibrium with the much-reduced level of expenditures.

The reduction in capital inflows again was a reflection of changes in both supply and demand. On the supply side, the international banking community was concerned about the debt crises in Argentina, Mexico and Brazil — as well as the high ratio of the current account deficit to GDP and the almost constant ratio of investment to GDP. 1/ Between 1980 and 1981, the share of investment in GDP stayed almost constant, while gross domestic savings dropped from 13.9% of GDP in 1980 to 6.6% in 1981. Thus, in 1981 most of the capital inflows went to finance consumption. 2/ On the demand side, the bulk of the portfolio adjustment called for by the large interest rate difference of 1979-80 had been already completed. Because of the monetary policy that was being followed, the monetary implications of the decline in capital inflows were a reduction in the money base and expenditures and an increase in the interest rate. With an unexpected decrease in inflation triggered by the dollar appreciation in international markets, real interest rates soared.

1/ Domestic savings did not finance the depreciation of the capital stock in 1981. Furthermore, the almost constant ratio of investment to GDP was substantially lower than it was in 1965-70.

2/ As Sachs (1981) has shown, the relation between the deficit in current account and the share of investment in GDP is an important determinant of the sustainability of a given deficit in the current account and of the risk of international lending.
The jump in interest rates was also associated with an increase in the spread between peso-denominated and dollar-denominated rates. This widening spread was perhaps the result of an increase in the expected rate of devaluation, but it was also related to restrictive monetary policies in the market for peso-denominated loans. The increase in the expected rate of devaluation may also have been associated with the financial crisis in the second half of 1981. Because of bad banking practices and the deepening recession, eight financial institutions were on the verge of bankruptcy, and had to be rescued by the Central Bank. The ensuing increase in domestic credit created expectations that the government could no longer maintain the fixed exchange rate. 1/

V. CONDITIONS SINCE 1982

The decline in expenditures reduced the demand for both tradables and non-tradables. In turn, the reduction in the demand for tradables improved the commercial account of the balance of payments, while that for non-tradables created an excess supply in the market for non-tradables and required an increase in the real exchange rate to restore equilibrium with a lower level of domestic expenditures. With international prices falling in nominal terms and with a fixed exchange rate, the improvement in the relative price of tradables required a substantial decrease in the nominal price of non-tradables to restore the real exchange rate to equilibrium. Because the price of non-tradables is inflexible downwards, especially in an economy with

1/ I owe this point to Sergio de la Cuadra. For a model where the departure from interest rate parity depends on the probability of the continuity of the current exchange rate regime, see Kaminsky (1982).
backward wage indexation, the adjustment to lower expenditures came about through an increase in unemployment.

Thus, the improvement in the real exchange rate called for by the macroadjustment was slow and costly in terms of output and employment losses, because of the downward inflexibility of the prices of many non-tradables. Furthermore, the high real interest rates of 1981 weakened considerably the financial situation of firms, especially those in the tradable sector that had lost an important part of their working capital in the protracted period when the peso appreciated. An appropriate way to have moved the relative price of tradables back to the equilibrium level called for by the reduced capital inflows would have been a devaluation combined with a suspension of wage indexation. Such a policy should have been implemented in late 1981.

On June 14, 1982, the government decided to help the adjustment in relative prices with a devaluation of the peso against the dollar of 18%. It also instituted a new exchange rate system in which the peso was pegged to a basket of currencies. This step was taken to reduce the short-term fluctuations in the real exchange rate arising from the fluctuations in the value of the dollar in the international markets. In addition, a monthly devaluation of 0.8% with respect to the basket of currencies was announced for the next 12 months. On June 18, the government announced a set of measures to accompany the devaluation, including the suspension of wage indexation. These
measures were designed to neutralize the possible effect of the devaluation on
the price of non-tradables and to reduce the potential fiscal deficit.1/

The public judged the initial devaluation, with its associated
passive crawl formula, to be inappropriate, and substantial pressure
developed in the exchange rate market. Indeed, the post-devaluation
adjustment of the Chilean economy proved more difficult than policymakers
anticipated. This devaluation -- after the public had repeatedly been assured
for three years that the exchange rate policy would not change and that any
devaluation would only create inflation -- spurred a run on the peso. The
Central Bank lost around $460 million (13.2% of international reserves)
between June 14 and August 6. At that point the crawling peg was abandoned in
favor of a flexible exchange rate. At the same time, all restrictions on
foreign exchange transactions were eliminated.2/

Despite the floating of the exchange rate, the crisis of confidence
became even worse. Given the $17 billion in foreign debt, largely in private
hands, a financial crisis started and the run on the peso continued. As a
partial solution, the government introduced a preferential exchange rate for
the service of foreign debt contracted on or before August 6, 1982.

After the floating, the value of the exchange rate increased
substantially, prompting the Central Bank to intervene by abandoning the free
float in favor of a dirty one. In an attempt to support the peso, another

1/ With the drastic drop in capital inflows, and with the 23% unemployment
of June 1982, the 14% drop in the GDP, and the suspension of the 100%-
plus wage indexation rules, a devaluation would improve the real exchange
rate (see Corbo, 1982 and 1985c).

2/ Until August 6, there had been a US$10,000-a-month limit on the amount of
foreign exchange that any Chilean could buy.
US$450 million in reserves were lost between August 6 and September 20. At that point, foreign exchange transactions were restricted. Meanwhile, the exchange rate fluctuated widely around an upward trend. With capital inflows substantially reduced and with more than half of export earnings controlled by the government, it became very difficult to implement a floating rate system. Furthermore, the new economic authorities decided that it was not proper, in the middle of a major crisis of confidence, to keep a dirty float. Thus, on September 19 the Central Bank decided to stabilize the exchange rate by announcing its intention of supporting an exchange rate band that allowed for fluctuations of ±2% around an upward trend for the next 120 days. This trend started at 66 pesos to the dollar and followed a passive crawling peg system, with a monthly rate of crawl equal to CPI inflation in the previous month minus 1% (an estimate for world inflation). This band was subsequently extended to 180 days.

The exchange rate adjustment of the second half of 1982 was difficult because of the large capital outflows during the period of unstable exchange rates and the sudden drying up of foreign credit as a result of the debt problems of Argentina, Mexico and Brazil. To smooth the adjustment to the sharp drop in capital inflows -- net private inflows went from $4.5 billion in 1981 to minus $0.5 billion in 1982 -- the amount of borrowing by government and state enterprises increased substantially in the second half of 1982.
VI. CONCLUSIONS

Three 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, except that unemployment and the real interest rate remained stubbornly high. The unemployment rate was largely ignored, while most of the time the high interest rate was attributed mainly to the restrictions on capital inflows. In fact, however, the main cause was the lack of adequate supervision of the financial system (Arellano, 1984; Zahler, 1983 and 1985; Corbo, de Melo and Tybout, 1986; Tybout, 1985).

Next, the second stabilization attempt, undertaken when inflation was down to 35% 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 the economy created not only a temporal short-term real appreciation of the peso, it also encouraged external borrowing at a time when the restrictions on capital inflows were being lifted and international capital markets were very liquid. The large rise in expenditures that followed the decrease in the interest rate and the increase in wealth caused the peso to appreciate further. The result was an unsustainable current account deficit that ran close to 25% of GDP in the first half of 1981. The appreciation squeezed tradables just when exporters were making inroads in the 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).

Third, contrary to what the authorities thought, the large spread between the domestic and foreign interest rates was as much a problem of uncontrolled imperfect asset substitution as it was a problem of control of the inflows of capital. Thus the intensity of the opening up of the capital account should not have been governed chiefly by the spread in interest rates.
Appendix 1/
Principal Reforms
Chronological Synthesis

Commercial Policy 2/

Before September 1973 (pre-reform situation): Quotas and quantitative restrictions were widespread. The tariffs ranged from 0% to 750%, with a mean value (weighted by the number of tariff positions) of 105%, a mode of 90% and a median of 80%. There were 2,872 tariff positions subject to an import deposit of 10,000% of the CIF value.

September 1973–July 1975: The highest nominal tariff was reduced from 750% to 140% and then to 120%. The mean weighted tariff was reduced from 105% to 57%.

August 1975–November 1977: A tariff goal was defined with six nominal levels between 10% and 35%, to be enacted in the first quarter of 1978. This structure was reached in August 1977 because of an anticipation of the last two stages. During this period the highest nominal tariff dropped from 120% to 35% (except for the motorcar industry) and the mean weighted tariff from 44% to 19.7%.

December 1977 onwards: In December 1977 a target structure was established with a 10% uniform tax to be reached in June 1979. The target was reached gradually by means of small monthly adjustments. In this period the mean weighted tariff went from 19.7% to 10.1%.

Complementary aspects of the reforms: All tariff exemptions were eliminated. First, the public sector was subjected to the general regime as early as 1974. Consumption surcharge taxes that imposed a higher rate on imports than on domestically produced competing goods were eliminated. By September 1976, prior deposit requirements on imports except cars and used or damaged merchandise were eliminated, and the list of allowed import items was replaced by a short list of forbidden items. Finally, in August 1981 the list of forbidden items was eliminated.

Price Liberalization 3/

September 1973 (pre-reform situation): More than 3,000 prices were fixed by DIRINCO (under the Commerce Department, a dependency of the Ministry of the Economy).

October 1973: Law decree 522 defined three groups of goods and services: those whose prices were to be freely determined (the majority); those whose

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1/ This appendix is from Corbo (1985b).
2/ For a good description of the commercial policies during this period, see Torres (1982).
3/ Based on Wisecarver (1985).
prices would continue to be fixed by DIRINCO (by means of cost studies) (33 goods and services); and a group of 18 goods whose prices were to be reported to DIRINCO, even though they were to be freely determined.

October 1973–May 1982: The general tendency was toward price liberalization. In December 1980, law decree 3529 was enacted forbidding items in the reported price category from being reclassified as fixed price goods and those freely priced ones to be put either under the reported price category or the fixed price category.

**Labor**

September 1973 (pre-reform situation): The following items were legally included in individual contracts: work hours (normal and overtime pay), work conditions, length of vacation, salary (at least the minimum) and so on. In addition, a lump sum payment for each year of work made labor dismissal extremely difficult and expensive.

1974 onwards: Discriminatory benefits were slowly eliminated; family allowances and retirement ages were made uniform for blue-collar and white-collar workers. Social security contributions were slowly reduced. Union power was heavily reduced.

1978 and 1981: Efforts were made to permit greater bargaining flexibility for vacations, indemnizations and profit-sharing. Further, employers were allowed to lay off workers without justification. Minimum wage market coverage was reduced.

July 1979: A "Labor Plan" was enacted. This plan reintroduced collective bargaining for a fraction of the labor force. In contract bargaining, the lowest offer that employers could make had to be equal to the previous wage adjusted by the CPI.

**External Capital Markets**

The reforms in the capital markets were too numerous and in the initial stage lacked clear direction. Among the main reforms were the following.

September 1977: Commercial banks were allowed to become indebted under article 14 of the exchange law. 2/ A monthly minimum limit of 5% of capital and reserves was imposed for flows under this type of operation.

January 1978: The Central Bank established a stock limit of 25% of capital and reserves for debt under article 14.

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2/ Article 14 refers to the permission given by the Central Bank to a borrower for future access to the exchange rate market to service a foreign debt.
March 1978: The stock limit was raised to 160% of the capital plus reserves of commercial banks.

April 1978: The global limit was raised to 180% and a sublimit of 160% was set for debt with a mean amortization of 36 months or lower. The article 14 limits were raised to 45% and 25% for debt of the above types. This credit had to be channeled toward dollar-denominated debt.

For the first time, a limit on external debt was imposed on development banks. This limit was 400% of capital and reserves, or 500% if the excess over the 400% was covered by credits with a maturity of 36 months and over.

December 1978: The global limit and sublimit were raised to 180% and 215% for commercial banks and to 400-600% for development banks. The limit under article 14 was raised from 45% to 60%.

April 1979: The sublimit of 215% was raised to 225% for commercial banks, the article 14 limit from 60% to 70%. A variable reserve requirement was established for external credits depending on the length of maturity of the loans: 10% for those with a maturity of 48 to 66 months, 15% for those of 36 to 48 months, and 25% for those of 24 to 36 months.

June 1979: The global limits on external borrowing were eliminated. From this moment on the only limitation on bank indebtedness was the lawful internal limit on total debt: 20 times capital and reserves. Debt limits under article 14 were eliminated. The monthly limits under article 14 were maintained, but reduced to 5% of capital and reserves or US$1 million, whichever was greater.

April 1980: All monthly limits under article 14 were lifted.

September 1980: Commercial banks were allowed to lend in external markets using their own resources.

December 1981: For the first time, commercial banks were allowed to lend short term (180 days) with external credit for purposes other than financing commercial operations.

May 1982: Commercial banks were allowed to obtain external credit with a maturity under two years subject to a reserve requirement of 20%.

July 1982: Commercial banks were allowed to use part of their short-run foreign credits to lend in pesos, with a limit of 50% of capital and reserves.
Domestic Financial Markets 1/

a) Interest rates

Pre-reform: Nominal interest rates were fixed by the Central Bank. As the resulting real interest rates were highly negative, most credit was allocated by quotas.

May 1974: Law Decree 455 modified the interest rate concept to the quantity that the creditor received and that exceeded the capital value properly adjusted by inflation. In the same law decree, free bargaining of the interest rate was established, subject to the restriction that it not exceed 50% of the current interest rate for inflation-adjustable operations and non-adjustable operations, whichever the case.

September and October 1974: Commercial banks were allowed by the Central Bank to determine freely the interest rate for deposits with a maturity longer than 60 days, a maturity that was later lowered to 30 days.

June 1975: The Central Bank allowed commercial banks and the Banco del Estado to determine freely the interest rate on both inflation-adjustable operations and non-inflation-adjustable operations.

b) Operational and institutional aspects

December 1973: Establishment of new banks was prohibited until December 1974. To relax this limitation, the so-called "operative representation of foreign banks" was created, but these entities could not operate in the domestic deposit market nor extend domestic currency credits.

December 1974: Rules were established with respect to the organization and functioning of financial institutions, which were to be corporations with the sole social objective of acting as financial intermediaries. Minimum capital limits were established together with specifications of operations that were allowed or not allowed. Limits on investments and credits to the same natural or legal entity are imposed. The banking law was modified, so that no natural entity could own more than a 1-1/2% of the capital of a bank, a limit that was raised to 3% if the entity was a legal one. For new banks, this limit would be enforced five years after operations started. Commercial, development and mortgage banks were not allowed to have shares of small financial institutions. Foreign banks were permitted to establish branches and offices in Chile.

January 1976: A law concerning the management of Investment Fund Societies (Fondos Mutuos) regulated which investment instruments could be bought, such as corporate shares, bonds, debentures, IOUs, government debt and other

debt. Minimum capital requirements were raised, regulatory provisions were established, and all types of debt instruments were enlarged.

**Foreign Exchange Policy 1/**

September 1973 (pre-reform situation): There were multiple exchange rates, parallel exchange markets and large overvaluation of the peso.

October 1973: There was a maxi-devaluation, and the exchange markets were reduced to three.

August 1974: The special exchange rate for copper exports was eliminated. The spot market dollar initially suffered 2 devaluations and later another 15. The mean rate of devaluation for the year was 6.1%. The total annual devaluation in this market was 166.7%. In the banking market, 24 devaluations were made during the year; the result was a mean devaluation rate of 6.9%, with an annual rate of 392.1%.

1975: The exchange rate policy consisted of small periodic devaluations.

June 1976: A 10% revaluation was effected.

August 1976: An exchange rate system with one rate was reached.

March 1977: A 10% revaluation was effected.

December 1977: The government announced that the devaluation rate would exceed the inflation rate to compensate for the tariff reductions.

February 1978: A formal *tablita* consisting of devaluations at a decreasing rate was established. This one lasted until June 1979.

June 1979: The exchange rate was fixed at the rate programmed for December 1979 in the later *tablita*, with the concurrent announcement that this fixing would last until February 1980.

December 1979: The fixed rate was extended indefinitely.

June 1979–June 1982: An 18% devaluation ended with the fixed rate period. The new system consisted of one in which the peso was pegged to a basket of foreign currencies.

August 1982: The floating rate policy was enforced.

September 1982: A new *tablita*, with monthly devaluations equivalent to the previous month's inflation rate minus 1%, was announced. Access to the exchange market was severely restricted.

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1/ Ffrench-Davis (1979) and Meza (1981).
References


