EXTERNAL SHOCKS AND POLICY REFORMS
IN THE SOUTHERN CONE: A REASSESSMENT

by

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I. Introduction

Few reform packages have led to as much controversy as the Southern Cone reforms in Chile, Argentina and Uruguay. Carlos Diaz-Alejandro, a close observer, was well aware of this when he cautiously stated that "... it is often difficult to establish where scientific economics ends and political preference begins" (Diaz, Alejandro, 1981, p. 120). While not eschewing his centrist position, Diaz-Alejandro knew where to draw the line between scientific economics and political preferences and showed much foresight in his interpretations of Southern Cone reforms. In his early appraisal of Southern Cone stabilization plans, he foresaw, among other difficulties, the risks of using the exchange rate to bring down inflation. He wrote:

"Reliance on a preannounced and declining rate of exchange rate devaluation as the key instrument to lower inflation also appears as excessively risky. Stubborn inflation in the prices of nontraded goods can lead to overvaluation. .... Preannounced exchange rates reduce the uncertainty of financial speculators while increasing that of exporters, a peculiar trade-off. .... Yet if the preannounced and slower devaluation pace fails to reduce inflation fairly quickly, expectations will grow that sharper devaluations lie ahead. The government will be faced with the 1950s dilemma of giving in to such expectations, rekindling after all the inflationary spiral and losing any remaining credibility, or adopting very contractionary policies to validate the overvalued exchange rate." (op. cit., p. 135)

Later on, in 1982, before the impending financial crisis he forewarned about the moral hazard problem created by outright financial sector deregulation unaccompanied by appropriate banking sector supervision. He wrote:
"The combination of pre-announced or fixed nominal exchange rate, relatively free capital movements, and domestic and external financial systems characterized by the moral hazard and other imperfections discussed above set the stage not only for significant microeconomic misallocation of credit, but also for macroeconomic instability, including the explosive growth of external debt. ... That macroeconomic instability would occur even assuming tranquil circumstances, but it is of course exacerbated by external shocks hitting economies made particularly brittle and vulnerable by that combination of policies and institutions." (Diaz-Alejandro 1985, pp. 15-16)

Diaz-Alejandro's insights aside, currently received wisdom about the outcomes of Southern Cone reform sometimes gives the impression of a state of disarray analogous to the economic disorder in the three countries themselves, as their dismal record unraveled in the early 1980s. Some observers, notably in the press, have concluded that the reform effort as a whole was a failure. Others, including the present authors (Corbo and de Melo 1985a, Corbo and de Melo 1987) have suggested that the microeconomic reforms were successful and that most of the problems that emerged resulted from inadequate macroeconomic policies. Still others have blamed a large part of the failure on unfavorable external shocks (Sjaastad, 1983).

This paper uses the benefit of hindsight to examine these controversial reforms once more -- their pervasiveness, their implementation, and the contribution of external factors to their overall failure. Section 2 summarizes the reforms, setting the scene for sections 3 and 4 in which we assess the role of external shocks using both straightforward decomposition analysis and counterfactual simulations derived from an econometric model. The model is used again in section 5 to attempt to quantify the relative importance of the imprudent macroeconomic policies referred to by Diaz-Alejandro. Having established that external shocks were not a predominant
factor, in section 6 we briefly summarize how inconsistent policies combined
to produce economic disarray in the Southern Cone in the early eighties.

II. Synopsis of the Reforms 1/

II.2 Stabilization

In all three countries, the reform process began against a background
of severe macroeconomic imbalances, reflected in unsustainable balance of
payments positions and high inflation. Not surprisingly, the authorities' first priority was stabilization—a strategy that would still be recommended today, because an up-front stabilization effort lends credibility to liberalization and helps to reduce real exchange rate fluctuations. Up-front stabilization is also necessary when inflation is high, because of some of the latter's main adverse side effects: (1) volatility relative prices, which reduces the information content of prices; (2) sharp real exchange rate variations stemming from the periodic use of the exchange rate to reduce inflation; and (3) increasing concentration of financial transactions in instruments with short term maturities because of uncertainty about future inflation levels.

Until early 1978, the three countries followed orthodox stabilization strategies, emphasizing control of the money supply and reductions in fiscal deficits. For Chile and Uruguay in particular, external shocks caused by falling commodity terms of trade exacerbated balance of payments difficulties and intensified the contractionary effects of the orthodox stabilization packages. Moreover, by the middle of 1978, much had been done to deregulate the financial system in each country. Not only had the interest rate ceilings that had applied to financial transactions for the past twenty years been
eliminated; in Argentina and Uruguay, financial transactions with the outside world as well had been deregulated.

It was roughly at this point, i.e., after substantial deregulation of their respective financial systems, that policymakers in all three countries became convinced that increasing worldwide capital mobility meant that they could do little to control the money supply. Switching to an exchange rate based approach to stabilization through preannounced future exchange rate values (the tablita)—which Diaz-Alejandro foresaw as storing up future troubles—seemed an attractive option, especially given the belief that this approach would avoid the contractionary effects of orthodox stabilization packages because people would rapidly lower their inflationary expectations. 2/ The exchange rate-based stabilization was abandoned in March 1981 in Argentina, in June 1982 in Chile and in November 1982 in Uruguay.

II.2. Liberalization

After three decades of import substitution and extensive price controls and interest rate controls, the economies of the three Southern Cone countries had by the early 1970s become some of the most distorted among middle income developing countries. Trade policies in all three countries were similarly and strongly biased in favor of import substituting industrialization (ISI) and against exports. All three countries had tried mild trade liberalization experiments—Chile in the late 1960s, Argentina in the second half of the same decade, and Uruguay in 1959. In each case, there was a return to a very restrictive trade regime with widespread tariff and non-tariff barriers. The fragmentary available evidence indicates high average effective rates of protection to domestic sales in each country: 84% in Argentina (1969); 151% in Chile (1974); 384% in Uruguay (1969). The
variability of protection across sectors, an indicator of distortion in incentives, was also very high in the three countries, and for no good economic reason; rather, it was the piecemeal result of pressures imposed by different domestic interest groups. Financial markets were also highly regulated, while non-price allocation of credit and strongly negative real interest rates were widespread and longstanding.

With the exception of domestic financial market deregulation, which proceeded rapidly in all cases, the sequencing of liberalization in the late 1970s and early 1980s differed in each country. Uruguay removed all controls on capital flows and many commodity price controls early on, but progressed more slowly on the liberalization of foreign trade. Uruguay also rationalized its fiscal system the most, eliminating the income tax and moving to a value added tax (VAT). Chile, on the other hand, also introduced a VAT and implemented a deep rationalization of public expenditures transforming a large public sector deficit (close to 25 percent of GDP in 1973) to a surplus by 1978. Chile also went the furthest in eliminating domestic price controls and reducing trade barriers, but maintained controls on short-term capital flows for a long period. Chile also maintained important labor market regulations. Argentina eliminated price controls, eliminated most restrictions on medium term (more than one year) capital flows, and removed quantitative import restrictions (with some important exceptions) before implementing some ad hoc tariff reductions. Uruguay virtually eliminated price controls by the end of 1979, but adopted only minimal commercial policy reforms to lower protection.

The evidence of persistently high effective protection to domestic sales in Argentina and Uruguay makes it clear that liberalization by no means affected all markets. In fact, contrary to popular belief, only Chile experienced extensive trade liberalization moving in five years toward a
uniform 10 percent tariff which was achieved in June 1979; in Argentina and Uruguay, where liberalization was much less widespread, pressure from foreign competition was only felt at the height of real exchange rate overvaluation. For example, redundant protection in Uruguay was only eliminated in 1981; at that time the bias against export sales was still 35%.

As stated above, rapid and pervasive deregulation of domestic financial markets was a common feature of the reforms in all three countries. Prior to deregulation, non-price allocation of credit and strongly negative real interest rates had been widespread and longstanding. The reforms began by progressively eliminating ceilings on interest rates, and then reduced restrictions on financial intermediaries. Argentina went from 100 percent reserve requirements and directed credit programs to a decentralized fractional reserve system. The Chilean government began loosening its control of the financial system by allowing non-bank intermediaries to operate without interest rate controls. Then, over several years, it removed interest rate ceilings for commercial banks and returned state owned commercial banks to the private sector. In Uruguay, dollar deposits were legalized and directed credit programs were progressively dismantled starting in 1974. Later, in 1977, controls on entry to the banking system were also lifted.

With respect to international capital flows, the sequencing and speed of reforms differed from country to country. Uruguay legalized unrestricted movements of private capital as early as 1974 and reached full convertibility by early 1977. Argentina eliminated most controls on capital movements in 1979. Chile progressively deregulated medium-term capital flows, eliminating global limits on borrowing in 1979 and restrictions on monthly inflows in
April 1980. Restrictions on short-term capital inflows were not dismantled until late 1981, however.

Finally, in all three countries, there was relatively little liberalization of labor markets. These markets continued to be controlled through penalties or prohibitions on labor dismissals, together with legislated wages and/or wage indexation. Thus, while the weakening of trade union power in the early stages of the reforms amounted to a degree of de facto deregulation, the Southern Cone counties did little to promote greater labor mobility, which is a necessary condition for efficient resource reallocation under any revised system of incentives.

To sum up, along with the lifting of domestic price controls, with the exception of trade liberalization in Chile, the most extensively implemented liberalization program in all three countries was the deregulation of financial markets. This is not surprising: one might reasonably expect much less resistance from threatened interest groups to the reduction of restrictions in this area than, say, to reduction of trade barriers or removal of protective labor market regulations (where, as just noted, very little was indeed done). Eventually, all three countries also decontrolled short-term external capital flows—a liberalization measure rarely carried out in developing countries—but only Uruguay adopted a fully liberalized regime in this area.

The controversy this paper deals with concerns the latter part of the reform period. Starting in middle to late 1978, all three countries switched from an orthodox approach to stabilization policy based on control of the money supply to an exchange-rate-based approach. The idea of the new approach was that by pre-announcing future exchange rates (reflecting declining rates of devaluation) inflationary expectations could be curbed while avoiding the
standard contractionary effects of orthodox stabilization packages. As Diaz-Alejandro perceived early on, such an approach was risky. Proponents of the approach, however, have argued that it is the concurring external shocks (the oil price hike of 1979 followed by the rise in interest rates in 1981) which were the proximate cause of failure of the reform package in each country.

Before turning to an examination of their relative importance, consider the facts to be explained: these are summarized in Figure 1 which traces the quarterly real exchange rate, real GDP and ex-post interest rate trajectories during 1977-82 in each country. A similar pattern of real exchange rate appreciation, acceleration of GDP growth and a U-shaped trajectory of real interest rates developed in all three countries. Were these trajectories mostly determined by external events, internal events or, more plausibly, a combination of the two?

III. Assessing External Shocks via Decomposition Analysis

We start our assessment of the role of external events by a decomposition analysis of changes in terms-of-trade and interest rates. This is a common approach to analyze the welfare effects of interest rates and terms-of-trade changes (Balassa 1984, Mitra 1987, Sachs 1985). Its theoretical justification is given by Dornbusch (1985) in terms of a two period model. Dornbusch shows that maximization under perfect competition by households and firms subject to an intertemporal budget constraint yields marginal welfare effects of external disturbances arising from real interest rate, terms-of-trade, and external debt changes.

A decomposition of the unfavorable impact of external events is provided in Table 1. The methodology is the same as the one used by Sachs (1985). The table offers quantified estimates of how important terms-of-trade
Figure 1

Real Exchange Rates and Real Interest Rates During the Active Crawling Peg

NOTES: Real Exchange Rate Index on right hand scale
Real Interest Rate and GDP index on left hand scale
and interest rate shocks were for the Southern Cone countries. The interest rate shock, which began to be felt after the rise in U.S. interest rates starting at the end of 1979, not only affected the cost of new borrowing but also interest charges on existing debt. Not surprisingly, this latter effect was particularly strong in the three countries during 1982-83 because much of their debt was contracted at variable interest rates through syndicated commercial bank loans. As Table 1 shows, for the 1982-83 period, the combination of declining terms of trade and increasing interest costs amounted to 12.2% of GNP in Chile, 6.7% of GNP in Argentina but only 1.0% of GNP in Uruguay.

Comparing the relative contribution of external shocks during each subperiod, it is notable that terms-of-trade shocks were significant during 1974-78 when stabilization was based on the orthodox approach and that during 1979-81 when signs of unsustainability of the exchange-rate-based stabilization program were appearing, the external environment was favorable for two of the three countries (Argentina and Uruguay). This is to be expected since the cost of foreign borrowing was low in that period of excess world liquidity. And in spite of the oil price hike of 1979, the adverse terms of trade shock was small for the three countries. Thus we conclude from this first round examination that external shocks were not important during the inception of the exchange-rate-based approach to stabilization.

The estimates of external shocks during 1982-83, however, show large magnitudes for Chile and Argentina. The large terms-of-trade effect for Chile during 1982-3 reflects the spike in copper prices in 1980-1. However, as we argue below, in the three countries part of the interest rate shock -- which reflects the increase in the interest rate and the increased volume of debt -- was endogenous as it occurred when public debt was accumulating to finance
### Table 1: External Shocks: 1974-83 (% of GDP)

<table>
<thead>
<tr>
<th>Terms of Trade (% of GDP) (1)</th>
<th>Interest Rate (% of GDP) (2)</th>
<th>Total (% of GDP) (3) = (2) + (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina* -2.9  -3  -3</td>
<td>n.c.  2.8  -6.4</td>
<td>-2.9  2.5  -6.7</td>
</tr>
<tr>
<td>Chile    -5.7  -1.9  -4.8</td>
<td>n.c.  0.2  -7.4</td>
<td>-5.7  -1.7  -12.2</td>
</tr>
<tr>
<td>Uruguay  -7.6  -4  1.9</td>
<td>n.c.  0.9  -2.9</td>
<td>-7.6  0.5  -1.0</td>
</tr>
</tbody>
</table>

**Notes:**
- n.c. - not calculated.

Methodology. The real income effect of terms of trade changes is computed from import and export unit value indexes in ECLA weighted by the import share of GDP. The interest rate effect is calculated as

\[
i - \frac{\hat{P}_T}{1 + \hat{P}_T} \; ; \; \hat{P}_T = (\hat{P}_X + \hat{P}_M) 0.5 \text{ where } \hat{P}_X \text{ and } \hat{P}_M \text{ are percentage changes in the export and import price indexes and the interest rate effect is computed from the world debt tables (1986) as the ratio of interest payments to disbursed debt and expressed in terms of GDP by multiplying the debt to GNP ratio. } \hat{P}_M \text{ is measured by the export unit value of industrial countries from the IFS. The same methodology is used in Sachs (1985). Changes are computed with respect to previous period.}

* For Argentina the periods are 1976-78, 1979-80 and 1981-82.
private capital flight when doubts about the sustainability of exchange-rate-based stabilization set in. In Argentina and Uruguay, increased debt resulted mostly from capital flight 3/ and in Chile from expenditure-led trade deficits.

The decomposition analysis is useful but the methodology rests upon assumptions that exclude the possibility that government policies may affect private sector behavior which in turn would lead to a change in the external position of the country. Thus we are not able to take into account in this decomposition that the increased external borrowing that took place in the early eighties was at least partly induced by the exchange-rate-based stabilization policy. Therefore we move on to an analysis which incorporates many of the issues Diaz-Alejandro was concerned with when he first assessed Southern Cone stabilization plans.

IV. An Econometric Model to Analyze External Shocks

In this section we formulate a small macro model to assess in a quasi-general equilibrium framework the contribution of external and domestic factors to output growth and debt accumulation. 4/ The model is then estimated for Chile and Uruguay 5/ with annual data for the period 1962-83. The model adapts an earlier quarterly model presented in Caballero and Corbo (1985) for the analysis of the effects of real exchange rate changes. In that paper, specifications and estimation issues are fully described. The model's treatment of the external sector is quite similar to the CGE simulation model used by Condon, Corbo, and de Melo (1985) to examine the role of external shocks in Chile during 1977-81. However, in that exercise no parameter estimation was undertaken and adjustment frictions were not included in the analysis as they are here.
IV.1 The Model

To isolate the importance of external shocks, we disaggregate the model into five goods: two exportables (manufacturing and nonmanufacturing); two importables (oil and non-oil); and one nontradable. Besides oil, two goods are consumed domestically, non-oil importables and non-tradables. Two-stage budget allocation determines demand for these two goods. On the production side, supply functions come from optimization with ad-hoc lags to capture adjustment dynamics. Identities implied by the general equilibrium feature of the model allow us to determine non-tradable prices and hence the real exchange rate. Finally a Phillips curve reflects wage stickiness. This implies that a sudden contraction after a boom may have strong real effects because of increases in unemployment caused by rising real labor costs.

The general structure of the model is presented below with the specific changes (e.g. ad-hoc lags and dummy variables) required for the application of the model to Chile and Uruguay discussed later along with estimation issues.

**Expenditure**

\[ C = \alpha_0 C_{-1} + \mu (DY - \alpha_0 DY_{-1}) + e_t \]

**Imports**

\[ (P_M \cdot M = OILM \cdot P_{OIL} + NOM \cdot P_{NO}) \]

\[ \log(\text{NOM}) = \beta_0 + \frac{1}{(1-\beta_1)} \left( \log(P_C) - \log(P_{NO}) \right) + \log(N \cdot C) \]
Exports

\( P_X \cdot X = P_{XNM} \cdot X_{NM} + P_{XM} \cdot XM \)

\( \log(XNM) = \gamma_{01} - \gamma_{11} (\log(W) - \log(P_{XNM})) - \gamma_{21} (\log(P^i_{XNM}) - \log(P_{XNM})) + k_{XNM} \)

\( \log(XM) = \gamma_{02} - \gamma_{12} (\log(W) - \log(P_{XM})) - \gamma_{22} (\log(P^i_{XM}) - \log(P_{XM})) + k_{XM} \)

Non-Tradable Price and Phillips Curve

\( \log(P_N) = \theta_{11} \log(W) + \theta_{12} \log(P_{OIL}) + (1 - \theta_{11} - \theta_{12}) \log(P_{NO}) + \theta_{14} (\log(E) - k_{N}) \)

\( \Delta \log(W) = \theta_{21} + \Delta \log(P) + \theta_{22} (\log(Y) - \log(N)) \)

\( \log(P) = \phi_0 \log(P_N) + \phi_1 \log(P_X) + (1 - \phi_0 - \phi_1) \log(P_{OIL}) \)

Identities

\( B \equiv P_X \cdot X - P_M \cdot M \)

\( Y \equiv \left[ N \cdot C \cdot P_c + B \right]/P \)

\( DY \equiv \left[ P \cdot Y - INT \right]/(P_c \cdot N) \)
Price Definitions

(11) \[ \log(P_c) = \psi_{11} \log(P_{NO}) + (1 - \psi_{11}) \log(P_N) \]

(12) \[ \log(p_{XM}^i) = \psi_{12} \log(P_{OIL}) + \psi_{22} \log(P_{NO}) + (1 - \psi_{12} - \psi_{22}) \log(P_N) \]

(13) \[ \log(p_{XM}^i) = \psi_{13} \log(P_{OIL}) + \psi_{23} \log(P_{NO}) + (1 - \psi_{13} - \psi_{23}) \log(P_N) \]

(14) \[ \log(P_M) = \psi_{14} \log(P_{OIL}) + (1 - \psi_{14}) \log(P_{NO}) \]

(15) \[ \log(P_X) = \psi_{15} \log(P_{XM}) + (1 - \psi_{15}) \log(P_{XNM}) \]

Where \( \Delta \) is the log difference operator, the subscript index -1 indicates a
one period lag, and the symbols are as follows:

\[ C \quad : \quad \text{Private consumption plus investment (per capita).} \]
\[ DY \quad : \quad \text{disposable income (per capita)} \]
\[ e_t \quad : \quad \text{Expectational error (orthogonal to information available at } t-1) \]
\[ P_M \quad : \quad \text{imports price} \]
\[ M \quad : \quad \text{imports volume} \]
\[ OILM \quad : \quad \text{oil imports} \]
\[ P_{OIL} \quad : \quad \text{oil price} \]
\[ NOM \quad : \quad \text{non-oil imports} \]
\[ P_{NO} \quad : \quad \text{non-oil import price} \]
\[ P_c \quad : \quad \text{Private consumption (plus investment) deflator.} \]
\[ E \quad : \quad \text{total expenditure} \]
\[ P_X \quad : \quad \text{exports price} \]
The most important novelty, with respect to the model in Caballero and Corbo (1985), is equation (1), the aggregate expenditure function. Here we interpret the residual of this equation to indicate an expectational error. This interpretation, necessitated by our analysis, has implications for estimation. Caballero (1986) justifies the estimation procedure adopted here. The hypothesis is that there are two groups of individuals, one that is not subject to a liquidity constraint and behaves according to the permanent income hypothesis, and one which is subject to a liquidity constraint. For the former group, Hall (1978) showed that assuming that this group has a
separable utility function, consumption follows a martingale. For the non-liquidity constrained group, we describe consumption by the process:

\[(16) \quad C'_t = \alpha_0 C'_{t-1} + e_t\]

where $C'_t$ is per-capita consumption of the group that is not liquidity constrained and $e_t$ is an expectational error with

\[(17) \quad E [e_t / I_{t-1}] = 0\]

We assume that the rest of the population is absolutely liquidity constrained and thus spend all its income. Thus for this second group we assume:

\[(18) \quad C''_t = DY''_t\]

Aggregating (16) and (18) we obtain the per-capita consumption equation (1) above, i.e.:

\[C_t = \alpha_0 C_{t-1} + \mu(DY_t - \alpha_0 DY_{t-1}) + e_t\]

where $\alpha_0$ is a constant and $\mu$ is the fraction of the population that is liquidity constrained.

Equation (2) and a similar one for non-tradeable (used to derive equation (5)) is obtained from a two-stage budgeting process, with the first stage determining the level of expenditure for each period and the second stage assigning the expenditures to non-tradable and non-oil importables.
Equations (3) and (4) are derived from profit maximization subject to an homogeneous Cobb-Douglas technology. Two-stage budgeting and technology are thus standard and similar to the specification in Condon, Corbo, de Melo (1985). Equation (5) is derived from market clearing for non-tradables using a demand equation similar to equation (2) and a supply equation like equations (3) and (4).

The second important feature of the model is Equation (6), the Phillips curve. The realism of this specification allows us to capture stickiness in price adjustment, an important feature when an economy must adjust to an external shock. Next is equation (7) the GDP deflator, where the weights are constant and estimated through a regression.

Following are identities (not estimated) and price definitions. Identity (8) is the balance of trade and non-factor services, identity (9) is the GDP-expenditure identity and (10) is the definition of GDP after net foreign interest payment. Equations (11) to (15) are price definitions. The weights entering the cost functions for exports are obtained from the 1977 input output table of Chile and from Uruguay's manufacturing census of 1978.

IV.2 Estimation Issues

Estimation problems arise because $e_t$ is only orthogonal to the information set $I_{t-1}$, that does not contain $DY_t$. As $e_t$ is a revision of the expectations on permanent income, the "news" component of $DY_t$ will most likely be correlated with $e_t$. We approach the estimation problem by estimating equation (1) by instrumental variables, using instruments that belong to the information set $I_{t-1}$. The use of full information maximum likelihood (FIML) does not restrict the instruments to the information set $I_{t-1}$, hence it is inconsistent.
Earlier, we argued (Corbo, de Melo and Tybout 1986) that a "bubble" developed in the Southern Cone countries in the early 1980s. Our residual in equation (1) corresponds to revision on expectation formation so it is not able to capture the beginning and the bursting of the "bubble" or any unexpected change in its size. The residual can, however, take account of the expected "bubble" once it exists.

The procedure we suggest is first to estimate equation (1) by instrumental variables (IV), and then to investigate its residuals. A large positive residual followed by a systematic high level of consumption is taken as evidence of a revision in expectations. If present, we interpret this break to signal the start of a bubble, and we introduce a dummy variable to capture this effect in the simulation. Moreover, if the break is not a bubble but rather an unexpected increase in wealth, the dummy variable procedure is still justified since our model cannot capture this type of unexpected changes unless it originates in the liquidity constrained population.

For Chile, we went further. For the 1980-82 period, we added the residual from the instrumental variable estimation of equation (1). We call this a non-predictable bubble evolution.

For Uruguay, where data availability was not as good as in Chile, we had to do some aggregation before estimating. Furthermore, when we estimated equation (1) by IV we could not estimate the rest of the model by FIML because the model did not converge. Therefore we had to estimate the complete model by FIML. In this case, we used the residuals obtained from the FIML estimation of equation (1) for the period 1979-83 period. We also had to aggregate the two export equations in the Uruguay model. Moreover, in the simultaneous estimations we had to impose the nominal export price effect
### Table 2:

Models for Econometric Estimation a/

<table>
<thead>
<tr>
<th>CHILE</th>
<th>URUGUAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1c)  ( C = \alpha_0 C_1 + \mu (D_Y - \alpha_0 D_{Y-1}) + BUBCH )</td>
<td>(1u)  ( C = \alpha_0 C_1 + \mu (D_Y - \alpha_0 D_{Y-1}) + BUBUR )</td>
</tr>
<tr>
<td>(2c)  ( \log (NOM) = \beta_0 + \beta_{11} (\log (P_C) - \log (P_{NO})) + \log (N \cdot C) + \beta_{12} DU75 )</td>
<td>(2u)  ( \log (NOM) = \beta_0 + \beta_{11} (\log (P_C) - \log (P_{NO})) + \log (N \cdot C) + \beta_{12} \cdot DU75 )</td>
</tr>
<tr>
<td>(3c)  ( \log (XNM) = \gamma_{01} - \gamma_{11} (\log (W) - \log (P_{XNM})) + k_{XNM} + \gamma_{21} \log (XNM_{-1}) + \gamma_{31} D734 )</td>
<td>(3u)  ( \log (X) = \gamma_{01} + \gamma_{11} \log (P_C) + \gamma_{12} \log (P_X) + \gamma_{13} \log (X_{-1}) + \gamma_{14} \log (\text{time}) )</td>
</tr>
<tr>
<td>(4c)  ( \log (XM) = \gamma_{02} - (1 + \gamma_{13} \cdot DU75) (\gamma_{12} (\log (W) - \log (P_{XM}))) + 4.0358 \cdot \gamma_{12} (\log (P_N) - \log (P_{XM})) + 0.293 \cdot \gamma_{12} (\log (P_OIL) - \log (P_{XM})) + 1.8338 \cdot \gamma_{12} (\log (P_NO) - \log (P_{XM})) + k_{XM} + \gamma_{14} DU75 )</td>
<td></td>
</tr>
<tr>
<td>(5c)  ( \log (P_N) = \theta_{11} \log (W) + \theta_{12} \log \frac{P_{N}}{P_{OIL}} + (1 - \theta_{11} - \theta_{12}) \log \frac{P_{NO}}{P_{N}} + \theta_{14} (\log (E) - k_N) )</td>
<td>(5u)  ( \Delta \log P_N = \theta_1 \Delta \log W + \theta_{12} \Delta \log P_{OIL} + (1 - \theta_1 - \theta_{12}) \Delta \log \frac{P_{NO}}{P_{N}} + \theta_{14} (\log (E) - k_N) )</td>
</tr>
</tbody>
</table>
Table 2 (continued)

Models for Econometric Estimation a/

<table>
<thead>
<tr>
<th>CHILE</th>
<th>URUGUAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>(6c) ( \log W - \log (P_c) = \phi_{11} (\log (W_{-1}) - \log (P_{c-1})) )</td>
<td>(6u) ( \Delta \log W = \phi_{11} \Delta \log (P_c) + \phi_{12} \Delta \log (P_{c-1}) )</td>
</tr>
<tr>
<td>( + \phi_{12} (\log (W_2) - \log (P_{c-2})) )</td>
<td>( + \phi_{13} (\log (GDP_{-1}) - \log (N_{-1})) )</td>
</tr>
<tr>
<td>( + \phi_{13} (\log (GDP) - \log (N)) )</td>
<td></td>
</tr>
<tr>
<td>(7c) ( \Delta \log (P) = \psi_{21} \cdot \Delta \log (P_N) + (1 - \psi_{21}) \cdot \Delta \log (P_X) )</td>
<td>(7u) ( \Delta \log (P) = \psi_{21} \cdot \Delta \log (P_N) )</td>
</tr>
<tr>
<td></td>
<td>( + (1 - \psi_{21}) \cdot \Delta \log (P_X) )</td>
</tr>
<tr>
<td>(8c) ( \log (P_c) = \psi_{11} \log (P_{NO}) + (1 - \psi_{11}) \log (P_N) )</td>
<td>(8u) ( \Delta \log (P_c) = \psi_{21} \Delta \log (P_{NO}) + (1 - \psi_{11}) \Delta \log (P_{NO}) )</td>
</tr>
<tr>
<td>(9c) ( \log (P_M) = \psi_{14} \log (P_{OIL}) + (1 - \psi_{14}) \log (P_{NO}) )</td>
<td>(9u) ( \log (P_M) = \psi_{14} \log (P_{OIL}) + (1 - \psi_{14}) \log (P_{NO}) )</td>
</tr>
<tr>
<td>(10c) ( \log (P_X) = \psi_{15} \log (P_{XM}) + (1 - \psi_{15}) \log (P_{XNM}) )</td>
<td></td>
</tr>
</tbody>
</table>

a/ Models estimated with annual data for 1962-83. Estimation procedures described in the text.

1/ BUBCH is the variable that captures the bubble component and takes values 3.77, 9.54 and -2.50 for 1980, 81 and 82 respectively. As a reference, \( c_{1980} = 79.08 \).

2/ DU75 is a dummy variable that takes value 1 from 1975 on and zero otherwise.

3/ D734 is a dummy variable that takes value 1 for 1973-74 and zero otherwise.

4/ BUBUR is the variable that captures the bubble component. It takes values 600, 1,400, -110, -2,000, and -1,000 for the period...
obtained from the ordinary least squares estimation. In the estimation no restrictions were imposed on the coefficient of domestic costs.

The models finally estimated appear in Table 2. They differ from the basic model in that the former included three additional elements: (i) dummy variables, (ii) dynamic components and (iii) prior information. For the Chile model, note that equations (12) and (13) have already been substituted away in equations (3c) and (4c) which also contain the input cost shares \( (\psi_{12}, \psi_{22}, \psi_{13}, \psi_{23}) \) obtained from the 1977 input-output table. For Uruguay note that two equations (4u) and (15u) do not appear because no distinction is made between manufacture and non-manufacture exports.

The values of the estimated coefficients and their standard errors appear in Table 3. Coefficients in the Uruguay estimation for which there is no standard error (i.e. in Table 3) correspond to parameters taken as fixed in the last step of estimation.\(^8\) Because the estimated models are different, there is no one-to-one relation between the meaning of the coefficients in Chile and Uruguay. The overall fit of the estimated model is quite good for both countries. In the case of Uruguay, however, the crisis of the early 1980's had many elements that the model could not completely account for. Because prediction errors are accumulated in the dynamic simulations, we decided to use a dummy variable (solely for the simulation) to bring the "control" close to the true value of the endogenous variables. We only connected the debt accumulation through the import and export equations. These modifications result in good fits for the 1980-83 period as a whole, though not for the actual timing of the crisis. We are thus able to make the counterfactual simulations reported below more meaningful.
## Table 3
Model Estimates

<table>
<thead>
<tr>
<th>Coefficients (st. error)</th>
<th>Chile</th>
<th>Uruguay</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a_0)</td>
<td>0.39</td>
<td>1.01</td>
</tr>
<tr>
<td></td>
<td>(0.07)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>(\mu)</td>
<td>0.89</td>
<td>0.42</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.17)</td>
</tr>
<tr>
<td>(\beta_0)</td>
<td>-1.99</td>
<td>-4.92</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(1.27)</td>
</tr>
<tr>
<td>(\beta_{11})</td>
<td>1.17</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.21)</td>
</tr>
<tr>
<td>(\beta_{12})</td>
<td>0.44</td>
<td>0.32</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.14)</td>
</tr>
<tr>
<td>(\gamma_{01})</td>
<td>-2.28</td>
<td>5.52</td>
</tr>
<tr>
<td></td>
<td>(0.17)</td>
<td>(2.80)</td>
</tr>
<tr>
<td>(\gamma_{11})</td>
<td>0.06</td>
<td>-0.15</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>(\gamma_{21})</td>
<td>0.38</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td></td>
</tr>
<tr>
<td>(\gamma_{31})</td>
<td>-0.28</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td></td>
</tr>
<tr>
<td>(\gamma_{02})</td>
<td>-0.98</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(0.07)</td>
<td></td>
</tr>
<tr>
<td>(\gamma_{12})</td>
<td>-0.03</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td></td>
</tr>
<tr>
<td>(\gamma_{13})</td>
<td>-8.15</td>
<td>0.56</td>
</tr>
<tr>
<td></td>
<td>(5.14)</td>
<td>(0.21)</td>
</tr>
<tr>
<td>(\gamma_{14})</td>
<td>1.15</td>
<td>-0.44</td>
</tr>
<tr>
<td></td>
<td>(0.09)</td>
<td>(0.35)</td>
</tr>
<tr>
<td>(\gamma_{12} \cdot \gamma_{13})</td>
<td>0.28</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(0.09)</td>
<td></td>
</tr>
</tbody>
</table>
Table 3 (continued)

<table>
<thead>
<tr>
<th>Coefficients (st. error)</th>
<th>Chile</th>
<th>Uruguay</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\theta_{11}$</td>
<td>0.21 (0.03)</td>
<td>1.04</td>
</tr>
<tr>
<td>$\theta_{12}$</td>
<td>0.18 (0.04)</td>
<td>N.A.</td>
</tr>
<tr>
<td>$\theta_{14}$</td>
<td>1.14 (0.11)</td>
<td>-0.009 (-)</td>
</tr>
<tr>
<td>$\phi_{11}$</td>
<td>1.41 (0.07)</td>
<td>1.015 (-)</td>
</tr>
<tr>
<td>$\phi_{12}$</td>
<td>-0.45 (0.07)</td>
<td>-0.004 (-)</td>
</tr>
<tr>
<td>$\phi_{13}$</td>
<td>0.02 (0.02)</td>
<td>-0.0004 (-)</td>
</tr>
<tr>
<td>$\psi_{11}$</td>
<td>0.06 (0.003)</td>
<td>0.0199 (-)</td>
</tr>
<tr>
<td>$\psi_{21}$</td>
<td>0.98 (0.02)</td>
<td>0.922 (-)</td>
</tr>
<tr>
<td>$\psi_{14}$</td>
<td>0.18 (0.05)</td>
<td>0.335 (-)</td>
</tr>
<tr>
<td>$\psi_{15}$</td>
<td>0.05 (0.002)</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

N.A.: Not applicable.
-- : See text.
V. The Relative Importance of the External Shocks: Some Counterfactual Simulations

We now use the parameter estimates of table 3 to quantify the contribution of external and domestic factors to the dynamic pattern of output growth and debt accumulation. Table 4 presents the historical evolution of the terms of trade, GDP and external debt for the two countries. These data serve as inputs for the simulation runs for the 1981-83 period on the hypothesis of no external shocks. We simulate the absence of external shocks by maintaining the national accounts terms-of-trade index at its value for 1980 in Table 4 (a good year) -- and by assuming that interest rates remain at their average level of 1974-79. As the results below will show, the general conclusion is that only a small part of the countries' poor performance during the early 1980s was due to unfavorable external conditions.

V.1 Chile

The results of our simulation experiments for Chile appear in Table 5. We perform three experiments. In the first experiment, E-1, we assume that the terms-of-trade index for the period 1981-3 remains at its 1980 level (TOT = 100) while the average international interest rate, R, paid on foreign debt remains for 1981-3 at the average for the 1974-79 period (R = 7.54%). In the second experiment, E-2, we assume for both the terms of trade and the average interest rate the same trajectory as in experiment E-1 but we assume that no "bubble" occurred, that is we remove the dummy from the consumption function in equation 1c and we leave lagged consumption endogenous. 9/ The third experiment, E-3, is similar to the second except that we use the actual trajectory for the terms of trade and for the international interest rate.
Table 4
Terms of Trade, GDP and Debt: 1980-83
(Historical Data)

<table>
<thead>
<tr>
<th>Year</th>
<th>Terms of Trade 1/</th>
<th>External GDP 2/</th>
<th>External Debt 3/</th>
<th>Terms of Trade 1/</th>
<th>External GDP 2/</th>
<th>External Debt 3/</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>100.0</td>
<td>1.00</td>
<td>11.0</td>
<td>100.0</td>
<td>1.00</td>
<td>1.1</td>
</tr>
<tr>
<td>1981</td>
<td>90.1</td>
<td>1.06</td>
<td>14.7</td>
<td>104.0</td>
<td>1.02</td>
<td>1.4</td>
</tr>
<tr>
<td>1982</td>
<td>80.4</td>
<td>0.91</td>
<td>17.4</td>
<td>104.0</td>
<td>0.92</td>
<td>1.7</td>
</tr>
<tr>
<td>1983</td>
<td>79.9</td>
<td>0.90</td>
<td>18.2</td>
<td>116.0</td>
<td>0.87</td>
<td>2.5</td>
</tr>
</tbody>
</table>

1/ National Account Terms of Trade: 1980 = 100.0
2/ GDP, real index: 1980 = 1.0
3/ External Debt in Billions of US$
Table 5
Simulating External Shocks: Chile

<table>
<thead>
<tr>
<th>Experiment</th>
<th>E-1</th>
<th>E-2</th>
<th>E-3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual</td>
<td>TOT=100</td>
<td>&quot;Bubbleless&quot;</td>
</tr>
<tr>
<td>Accumulated</td>
<td></td>
<td>(1981-3)</td>
<td>(1981-3)</td>
</tr>
<tr>
<td>1980-3</td>
<td></td>
<td>R=7.54%</td>
<td>R=7.54%</td>
</tr>
<tr>
<td>GDP 1/ (%)</td>
<td>-9.98</td>
<td>6.53</td>
<td>8.31</td>
</tr>
<tr>
<td>GDP 2/ (%)</td>
<td>-3.4</td>
<td>2.1</td>
<td>2.7</td>
</tr>
<tr>
<td>ΔDEBT 3/</td>
<td>7214</td>
<td>5.009</td>
<td>1,338</td>
</tr>
<tr>
<td>DEBT 4/</td>
<td>18,201</td>
<td>15,900</td>
<td>12,217</td>
</tr>
</tbody>
</table>

Notes: TOT = Terms-of-trade Index; R = International Interest Rate

1/ Accumulated rate of growth (1980-3).
2/ Average annual rate of growth (1980-3).

Starting with experiment E-1, we find that even if the 1980 terms of trade and 1974-79 international interest rate had been in place in the 1981-83 period, GDP growth would have been only 2.1 percent per year; by the end of 1982, the debt would have reached 15.9 billion dollars (the historical value given in Table 3 was 18.2 billion). Thus, according to our model, even without external shocks, the performance of the Chilean economy during 1981-83 would have been much worse than in the 1976-80 period. Critical causal factors include the drop in the real exchange rate, the increase in real wages, and slow capital accumulation during 1976-80, all of which slowed GDP growth.

Consider now the likely outcome if there have not been external shocks and if expenditure had not been allowed to grow so rapidly. This is experiment E-2. The outcome of this simulation shows an average GDP growth rate of 2.7% during 1981-83 and an external debt of only 12.2 billion dollars. This more favorable outcome is achieved by the following mechanisms. With a normal expenditure path, growth would have been less in 1981 but borrowing and real wage increases would also have been less. Lower real wages would have raised employment and output, especially in the nontradables sector. Production of nontradables would also have gained from the higher disposable income available with lower interest payments.

Robustness is added to these results by performing the same experiment but instead assuming the actual trajectory of the terms of trade and interest rates. This is the experiment E-3. Now the average drop in GDP would have been only -0.9 percent per year and the level of debt only 12.9 billion dollars. These results compare very favorably with the actual GDP and debt trajectories. Indeed, 1980-83 average GDP growth was only -3.4 percent and the debt at the end of 1983 was 18.2 billion dollars (Table 3). Thus, we
conclude that the bubble in expenditures that developed in the late 1970s had a large role in both the accumulation of external debt and in the slowdown in the rate of growth.

V.2 Uruguay

Our simulations for Uruguay appear in Table 6. The conclusions are in line with those for Chile. Actual and control values are reasonably close to one another to go ahead with counterfactual simulations. As for Chile, experiment E-1 corresponds to a favorable external environment: the average interest rate for 1981-3 is set at $R = 10\%$ instead of the actual average of 12%. Experiment E-2 maintains the same external environment as E-1 but we remove the dummy from the consumption function in equation 1u. Experiment E-3 is the same as E-2 except that actual terms-of-trade and interest rate trajectories are used. Experiment E-1 shows that even under favorable external conditions the average rate of output growth would still have been $-0.8\%$, a gain of only 1.5% over our control data and again a poor performance. Debt accumulation would have been cut by a third, a gain similar to Chile. Given that the national accounts terms-of-trade were improving during the counterfactual simulation period in Uruguay, external shocks were much less important in Uruguay than in Chile. Again, external shocks fail to explain the crisis.

The next experiment, E-2 shows, as in Chile, that a more "reasonable" consumption path maintaining favorable external conditions would have achieved much better results in terms of GDP at the end of 1983, and a substantial reduction in debt.

As in the Chilean case, in experiment E-3 we also simulate the path of a "bubble-less" economy with the actual external conditions. Again, the
### Table 6

**Simulating External Shocks: Uruguay**

<table>
<thead>
<tr>
<th>Experiment</th>
<th>E-1</th>
<th>E-2</th>
<th>E-3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accumulated 1979-83</strong></td>
<td>Actual</td>
<td>Control</td>
<td>$\text{R} = 10%$ (1981-83)</td>
</tr>
<tr>
<td>GDP 1/ (%)</td>
<td>-7.9</td>
<td>-9.0</td>
<td>-3.2</td>
</tr>
<tr>
<td>GDP 2/ (%)</td>
<td>-2.0</td>
<td>-2.3</td>
<td>-0.8</td>
</tr>
<tr>
<td>$\Delta\text{DEBT 3/ (M. US$)}$</td>
<td>1590</td>
<td>1592</td>
<td>737</td>
</tr>
<tr>
<td>DEBT 4/</td>
<td>2523</td>
<td>2525</td>
<td>1670</td>
</tr>
<tr>
<td>Consumption 5/ per Capita (%)</td>
<td>-15.1</td>
<td>-13.1</td>
<td>-9.8</td>
</tr>
<tr>
<td>Average Cons. per Capita 6/ (%)</td>
<td>-4.0</td>
<td>-3.5</td>
<td>-2.6</td>
</tr>
</tbody>
</table>

1/ Accumulated Rate of Growth (1979-83).
2/ Average annual rate of Growth (1979-83).
5/ Accumulated Rate of Per Capita Private Consumption Growth (1979-83).
6/ Average Rate of Per Capita Private Consumption Growth (1979-83).
performance is much better than in our control. The economy would have stagnated but the smoother path would have lowered the external debt level of 1983 by one-third. In concluding, it should be recalled that many of the erratic movements in Uruguay's private consumption were beyond Uruguayan control as they reflected the unstable Argentine economy rather than a speculative path generated by inconsistent macroeconomic policies.

VI. Policy Inconsistencies Once Again

We have established that "excessive" expenditure goes a long way towards explaining the collapse of the Chilean and Uruguayan economies in the early 1980s. We have attributed "excessive" expenditure to inconsistent macro policies without being specific about the nature of these inconsistencies. We conclude by detailing the various forms that the inconsistencies took in each of the Southern Cone countries.

To begin with, in all three Southern Cone economies, the deregulation of the domestic financial system was not accompanied with an information system that could allow for early warning concerning the quality of loans. Furthermore, as pointed out by Diaz-Alejandro (1985) and documented for Chile by Galvez and Tybout (1985), cross-ownership between financial and non-financial firms facilitated many internal transactions where loans were given without proper risk evaluation. 10/ Not surprisingly, when the macroeconomic crisis unraveled in the early 1980s the financial system entered into a major crisis. 11/

Next, signs of inconsistency in the three countries' macroeconomic policies became apparent in the early eighties. In Argentina (with an externally financed public sector deficit of over 10 percent of GDP and no prospect of fiscal reform), doubts about further external financing of the
deficit and the sustainability of the exchange rate regime set in as early as the first half of 1980. This was made worst by the April 1980 collapse of the BIR (Banco de Intercambio Regional) which produced a 25 percent increase in the money supply in a single month. The absence of a commitment about future exchange rate policy by President-elect Viola accelerated private capital outflows. The 10 percent devaluation introduced in February 1981 was a case of "too little and too late" and only exacerbated the crisis.

In Chile, a fiscal surplus equal to 2.1 percent of GDP was achieved in 1979-81, but it was accompanied by a large expansion in private expenditure leading to a current account deficit of 14.6 percent of GDP in 1981. The expansion in private expenditure was facilitated by easy access to external credit on very favorable terms. The introduction of a preannounced and declining rate of exchange rate devaluation together with backward wage indexation based on at least 100% of previous CPI inflation was bound to result in a lengthy period of real appreciation (Corbo 1985b). On the other hand, the deregulation of domestic financial markets tended to increase real returns on domestic financial assets. With the continuous lifting of controls on capital inflows and the lessening of uncertainty about devaluation produced by the policy of preannounced exchange rates, large portfolio adjustments occurred, yielding large capital inflows that provided easy access to "cheap" foreign credit to fuel the expansion in private expenditure. Real exchange rate appreciation followed (Corbo 1985a, Corbo 1987, Harberger 1982, Edwards 1985). Then concerns about the sustainability of the exchange set in. This reduced private capital inflows from 1.6 billion dollars in the second half of 1981 to .9 billion dollars in the first half of 1982.

In the case of Uruguay, the fiscal position, which had improved continuously up to 1980, started to deteriorate in 1981 with an underfunded
social security reform. Meanwhile, the real exchange rate appreciated by 27.4 percent between 1978 and 1981. Furthermore, with the collapse of the stabilization attempt in Argentina, Uruguay's real appreciation vis-a-vis Argentina was even larger (Hanson and de Melo, 1985). Emerging doubts about the sustainability of the tablita were reflected in increased private capital outflows starting in 1981 (de Melo 1987). To some extent, capital outflows were due to the collapse in Argentina. But these outflows could have been mitigated, had Uruguay adjusted its parity after Argentina abandoned the tablita.

Capital flight was evident in Argentina and Uruguay (and to a lesser extent in Chile) before their economies were hit by the adverse external developments of the early 1980s, when changes in the mix of fiscal and monetary policies in the industrial countries (and especially the U.S.) produced an unanticipated world recession, an appreciation of the US dollar, a drop in the terms of trade, and a sharp increase in international interest rates. Nevertheless, the debt crisis that followed and the consequential interruption of voluntary capital flows had severe adverse consequences for all three countries and for other countries that had become used to or had encouraged the existence of a large gap between expenditures and output. Specifically in the Southern Cone countries, real exchange rate appreciation (together with increasing budget deficits in Argentina and Uruguay) made their economies far too dependent on foreign financing as early as 1981. In Chile, the borrowing was by the private sector, in Argentina and Uruguay by the public sector.

In this paper, we have argued that when the international debt crisis that followed the Mexican crisis broke in August 1982, the Southern Cone countries were already in serious trouble. The debt crisis closed the option
of using public borrowing to finance private capital outflows, but private sector adjustment had started earlier. All the August 1982 crisis implied was a faster cut in absorption and a faster real depreciation. The econometric model we have estimated supports our argument that in Chile the recession was deepened by the downward inflexibility of nontradable prices and wages in a regime with backward wage indexation and that the crisis would have been dampened or avoided with consistent macroeconomic policies. In Uruguay too, "excessive" expenditure was also apparent and the recession was deepened by the large real appreciation vis-a-vis Argentina as expenditures were rapidly shifted to Buenos Aires. An exchange rate policy that would have taken into account more closely developments in Argentina would have dampened the recession.
FOOTNOTES

1/ By now there is a large literature on these reforms, though most writing is country-specific (Corbo 1985a; Edwards 1986; Fernandez 1985; Hanson and de Melo 1985; Harberger 1982; Nogues 1986; Rodriguez 1983). For further elaboration of the reforms in a comparative framework, see McKinnon 1982; Edwards 1985; Corbo, de Melo and Tybout 1986; Corbo and de Melo 1987 and references therein.

2/ How the program was supposed to work during the transition is explained in Rodriguez (1982). Dornbusch (1982) contrasts the orthodox and new approaches to stabilization.

3/ Corbo, de Melo and Tybout (1986, table 3) estimated capital flight of $29.8 billion for Argentina during 1979-83 and $2.2 billion for Uruguay during 1979-83.

4/ The use of the term quasi denotes that not all budget constraints are explicitly incorporated in the model as they are, for instance in CGE simulation models.

5/ We tried to estimate a similar model for Argentina but we were unsuccessful. This is not surprising because there were numerous changes in the structure of the economy during the sample period.

6/ Oil imports are taken as exogenous.

7/ This link is absent not only in the decomposition analysis above, but also in most CGE exercises assessing the impact of external shocks.

8/ Some parameters correspond to the values obtained with limited information procedures. Others were approximated by iterating over the procedures with the parameters of primary concern taken as given. This process continued until no significant change in the likelihood function was obtained. Lack of convergence of the complete model but convergence of each of the sections independently suggests some identification problem, a very difficult problem to solve in non-linear models.

9/ That is, we do not add the error of the equation to the simulation of consumption.

10/ In the case of Uruguay, de Melo, Pascale and Tybout (1986) show that, starting in 1981, when sustainability of the tablita had already set in, firms borrowed in order to pay out dividends, an indication that a bailout was expected.

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