



Annex IV

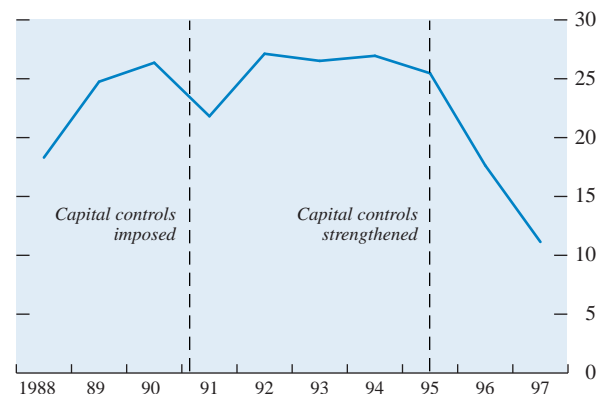
Chile's Experience with Capital Controls

The recent developments in Asia have renewed the debate on the usefulness and effectiveness of capital controls. A number of economists have advocated “throwing sand in the wheels” of international markets to inhibit volatile, short-term capital flows. This view stems from the belief that massive inflows of foreign capital, mainly in the form of short-term portfolio investment and bank loans, have proved to be too unstable and unpredictable to be a major source of external financing for emerging markets. Thus, in contrast to earlier periods where the focus was on using capital controls to limit capital flight, the current proposals have examined the use of controls to alter the volume and composition of capital inflows. In this context, Chile's capital controls have been viewed by some observers as the type of instrument that can be used to manage short-term inflows.

In the early 1990s, Chile experienced a surge in capital inflows that created a conflict between the authorities' internal and external objectives: the problem was how to maintain a tight monetary policy without hindering Chilean export competitiveness. In 1991, the central bank attempted to resolve this dilemma by imposing a one-year unremunerated reserve requirement (URR) on foreign loans, which was primarily designed to discourage short-term borrowing without affecting long-term foreign investments. The fixed holding period of the reserve requirement implied that the financial burden diminished with the maturity of the investment. Between 1991 and 1997 the rate of the URR was increased and its coverage extended in several steps to cover most forms of foreign financing except foreign direct investment. Currently, there is a one-year minimum holding period on capital inflows (applying to all inflows above US\$10,000 except for short-term borrowing and holdings of American Depository Receipts (ADRs)). Bonds issued abroad by Chilean companies must have an average maturity of at least four years. In addition, there is a 10 percent unremunerated reserve requirement, also with a one-year holding period, for all external liabilities that do not result in an increase in the stock of capital.¹ In practice, this means that loans, fixed-income securi-

¹The rate of the URR, which had been 30 percent since May 1992, was reduced to 10 percent in June 1998.

Figure A4.1 Chile's Short-Term External Debt
(In percent)



Source: International Monetary Fund, *World Economic Outlook*.

ties, and most equity investments are subject to the URR, and only FDI and primary issuances of ADRs are exempted from the reserve requirement. However, primary issues of ADRs are also subject to two minimum rating requirements (BB), granted by internationally recognized credit rating agencies.

The Chilean experience has been viewed by many as a means of controlling the composition of foreign borrowing without hindering the volume of capital inflows to the country. However, the empirical evidence regarding the effectiveness of the Chilean controls in reducing short-term external debt is somewhat ambiguous. For example, while it is difficult to be conclusive in the absence of a counterfactual, national data for Chile's external debt suggest that the introduction of capital controls affected the maturity composition of net capital inflows only after 1995 when the controls were strengthened (Figure A4.1). However, data from the BIS describe a somewhat different picture. Table A4.1 reports the claims of all banks with head offices in the BIS reporting area for 1997 for 24 emerging markets.² The BIS figures for short-term ex-

²The BIS reporting area includes the Group of Ten countries plus Austria, Denmark, Finland, Ireland, Luxembourg, Norway, and

Table A4.1. Bank Borrowing by Maturity for Selected Emerging Markets, End-December 1997*(In millions of U.S. dollars)*

Country	Total	Up to One Year	Percent of Short Term
Hungary	11,217	3,834	34.2
Poland	9,505	3,622	38.1
Venezuela	12,242	4,701	38.4
Colombia	18,480	7,394	40.0
Israel	6,132	2,545	41.5
Mexico	61,794	27,556	44.6
Russia	72,173	32,406	44.9
Slovak Republic	4,782	2,225	46.5
Chile	21,179	10,551	49.8
Czech Republic	10,780	5,388	50.0
Malaysia	27,528	14,613	53.1
Turkey	29,207	16,439	56.3
Argentina	60,413	34,529	57.2
Philippines	19,732	11,924	60.4
Indonesia	58,388	35,383	60.6
Korea	94,180	59,444	63.1
Brazil	76,292	48,922	64.1
Thailand	58,835	38,772	65.9
South Africa	21,000	14,020	66.8
Peru	9,897	6,855	69.3
Uruguay	5,033	3,568	70.9
Hong Kong SAR	211,968	167,954	79.2
Taiwan Province of China	26,173	21,402	81.8
Singapore	194,820	178,951	91.9

Source: Bank for International Settlements (1998).

ternal borrowing substantially exceed those reported in Chilean sources and suggest the existence of a large amount of foreign currency loans issued by Chilean affiliates of foreign banks, outstanding import credits (both types of loans are not included in official short-term external debt data), or significant misreporting of external liabilities. Moreover, the maturity structure of foreign bank borrowing appears quite different from what is implied by the national data. At the end of 1997, loans with maturity up to one year represented 49 percent of total foreign currency loans, whereas the Chilean debt data for the equivalent component of the total external debt is 11 percent.³

A Brief Survey of the Literature on the Effectiveness of the Chilean Controls

There is a large empirical literature addressing the issue of the effectiveness of capital controls. An ex-

tensive review, Dooley (1996), observed that the general conclusion is that capital controls allow countries to temporarily maintain a wedge between domestic and international yields. However, it appears that this effect is eroded over time as the private sector develops new techniques to avoid the restrictions.⁴

Empirical studies typically test for the effectiveness of capital controls by examining the evolution of offshore/onshore interest rate differentials and whether covered interest rate parity is violated. Since Chile did not have either a well-developed forward exchange market, or an offshore deposit market for Chilean pesos, empirical work on Chile has relied on alternative procedures to test effectiveness. As will be discussed, the empirical evidence regarding the ability of the Chilean controls to drive a sustained “wedge” between domestic and external monetary conditions is mixed. However, there is another dimension to the effectiveness of Chilean-type capital controls, namely their ability to limit the accumulation of short-term external debt by financial and nonfinancial entities. Unfortunately, there is little empirical evidence regarding whether Chilean controls have been effective in this dimension.

Quirk and Evans (1995) observe that net short-term private capital inflows recorded in the balance of payments decreased in 1991 with the introduction of capital controls. However, they also observe that “net errors and omissions” and the estimated trade misinvoicing also increased sharply in the same year. One possible interpretation of that evidence is that the change in “errors and omissions” represents an increase in unrecorded short-term flows reflecting an attempt by the private sector to circumvent the capital restrictions.

Using the tax revenues generated by the URR as a proxy for the effectiveness of the restrictions (and including errors and omissions from the balance of payments in their definition of short-term capital inflows) Valdés-Prieto and Soto (1997) find that the URR did not have a significant effect on short-term borrowing before 1995, when the implicit tax increased from 3.6 percent to 6.7 percent, after the Central Bank changed the regulations and required investors to hold their reserves in U.S. dollars.⁵ However, the paper does provide evidence that the URR was effective in the period 1995–96.⁶ Nevertheless, the authors present data (but not formal tests) suggesting that other forms of short-term borrowing increased over that period as the pri-

Spain. The data include all cross-border bank claims plus claims in nonlocal currency of local affiliates of banks in the BIS area. The BIS data are disaggregated only by maturity or by sector so it is not possible to analyze the maturity structure of only the private sector debt.

³Another explanation for this discrepancy may be in that BIS data classify loans by their actual maturity, while Chilean data consider the maturity at the date of issuance.

⁴See also Obstfeld (1995), and Epstein and Schor (1992).

⁵Previously, reserve requirements could also be constituted in other currencies, including yen. Since interest rates in yen were lower than in U.S. dollars, investors preferred to constitute their reserve requirements in yen as they carried a lower implicit tax.

⁶A shortcoming of the methodology applied in this paper is the possibility of a simultaneity bias of the estimated parameters, as some of the variables used as regressors may in fact be endogenous.

Table A4.2. Selected Chilean Capital Account Controls and Banking Regulations

Capital Transactions		Provisions Specific to Credit Institutions	
Financial Investments: American Depository Receipts (ADRs) and other securities investments	One year minimum holding period. 10% unremunerated reserve requirement (URR). The issuance of primary ADRs is exempt from the URR, but issuers are subject to a minimum international credit rating.	Open foreign exchange position	Limit of 20% of capital and reserves. Foreign financial investment ceiling of 25% of capital and reserves.
Foreign direct investment	One year minimum holding period. Minimum amount of US\$10,000. Exempted from the URR.	Lending domestically in foreign exchange	Only foreign-trade-related loans are allowed.
Import-export credit	Exempted from the URR.	Other restrictions on lending	Limits on maturity mismatches. Banks are not allowed to keep shares in their portfolios.
All other inflows	10% URR.		

Sources: International Monetary Fund (1997); and Eyzaguirre and Lefort (1998).

vate sector substituted exempt short-term flows—not always classified as short-term credit in the Chilean statistics—for taxed short-term flows, as the authorities gradually changed the tax design over time in an attempt to counteract new methods of evasion.⁷

Soto (1997) runs a VAR analysis on capital flows, interest rates, and the level and volatility of the real exchange rate for Chile. The VAR approach allows controls for the endogeneity problem that may invalidate the estimates in studies like Valdés-Prieto and Soto (1997). He finds that capital controls had the desired effect of reducing capital inflows, maintaining higher interest rates and lower real exchange rate, and reducing the share of short-term capital inflows. However, the size of these effects is estimated to be very small.

Edwards (1998a) tests Chile's capital controls effectiveness indirectly. To make up for the lack of off-shore interest rate and forward exchange rate data, he focuses on how the evolution of the real exchange rate and interest rate differential was influenced by capital controls. This hypothesis was that under the assumption of "effectiveness," the introduction of capital controls will significantly affect the relationship between domestic and foreign interest rates and the time-series characteristics of the real exchange rate. His empirical results suggest that the impact of capital restrictions on the behavior of the real exchange rate has been very limited and short-lived. The paper also provides some evidence suggesting that the degree of persistence of interest rate differentials increased somewhat after the introduction of capital controls.

Cardoso and Laurens (1998) find that the introduction of capital controls had only temporary effects on the composition of external financing, which is con-

sistent with the view that the private sector will attempt to circumvent any restriction to capital movements, and that over time it will succeed. They regress a direct measure of net private capital inflows on an index of capital account restrictions and a vector of control variables, including real interest rate differentials, domestic GDP, and seasonal dummies. Their results suggest that capital controls were effective in the six months following their introduction, but ceased to be effective afterward. However, their analysis does not control for the possibility of simultaneous causality in the regression. In particular, it seems difficult to establish the direction of causality between interest rate differential and capital inflows.

Selective Capital Controls and Prudential Regulation

To the extent that most international flows in emerging markets are intermediated by the banking system, prudential measures that prevent some particular cross-border activities and regulate banks' open foreign positions can have effects similar to restrictions to capital movements (International Monetary Fund, 1995).

In Chile, strong and well-designed prudential regulations complement capital account restrictions in protecting the financial system from capital flow swings (Table A4.2). Banks cannot lend domestically in foreign exchange, with the exception of foreign-trade-related credits. Moreover, there is a limit on the open foreign exchange position set at 20 percent of banks' capital and reserves, and there are other limitations on maturity mismatches (Eyzaguirre and Lefort, 1998). Some observers have argued that the combination of these prudential measures and capital account restrictions has accomplished two objectives. First, it has limited the foreign exchange exposure of both bank and nonbank entities. Second, in the event of sudden

⁷This argument, albeit weak, seems consistent with the behavior of the Central Bank, which at the end of 1995 strengthened the regulation extending the reserve requirement to fixed income securities and to equities.

capital outflows, the limitations on maturity mismatches would allow the central bank to defend the exchange rate parity by raising the interest rate, without damaging banks' profitability.

The importance of the Chilean prudential framework is stressed in Zahler (1993), who argues that financial liberalization and capital account opening should be accompanied and preceded by a comprehensive reform of supervisory regulations. He suggests that the lack of adequate banking legislation is the major cause of the failure of most Latin American liberalization processes. Implicit insurance of banks' liabilities and the absence of supervision led the banking system to excessive risk taking that later resulted in a general crisis. Along the same lines, Edwards (1998b) suggests that Chile owes its stability not to capital controls but to banking regulations. He argues that during the 1970s and early 1980s Chile also imposed an URR on capital inflows that did not prevent a major banking and currency crisis in 1982. He stresses that the major difference with the current situation is the existence of sound banking regulations that were substantially improved with a major reform in 1986.

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