

CAPITAL ACCOUNT REGULATIONS IN CHILE AND COLOMBIA

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During the 1990s, a period of generalized financial liberalization and large foreign capital flows towards Latin America, Chile and Colombia opted for maintaining prudential capital account regulations. This paper presents the rationale behind those regulations, describes their operation and evaluates their effectiveness.¹

1. THE RATIONALE FOR CAPITAL ACCOUNT REGULATIONS

The rationale for those regulations arises from the hypothesis according to which a full liberalization of the capital account in a developing economy, instead of contributing to avoiding macroeconomic disequilibria, is likely to ‘trap’ domestic policies into short-term bias and non-sustainable macroeconomic equilibrium (Ocampo, 1999, ch. 5; Ffrench-Davis and Ocampo, 2001). Capital flows reduce the autonomy of domestic economic authorities to jointly manage the real exchange rate, the real interest rate and aggregate demand. Large capital inflows tend to reduce both the exchange rate (pesos per dollar) and the interest rate, and to worsen the external balance, while capital outflows tend to increase both macro-prices and to improve the external balance. As far as capital flows to developing economies have been proved to be highly pro-cyclical, the real exchange rate, the real interest rate and aggregate demand become highly pro-cyclical too.

A distinction should be made between two different types of volatility of the exchange rate: (i) the short-term volatility, which is supposed to provide good signals to the market and discourage short-term capital flows, and (ii) the medium term instability, which leads the exchange rate to move in a given direction, providing “wrong certainties” to the market and encouraging short-term, medium-term and even long-term capital flows that look for exchange rate gains and not for differences in real productivity. Private capital flows led by mid-term volatility usually have strong and costly pro-cyclical biases.

As a general rule, the purposes of the type of capital account regulations that have been used both in Chile and in Colombia are threefold.

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¹ In Annex 1 the economic sizes of Chile and Colombia are presented. Annex 2 shows the growth rates of both countries in different sub-periods.

First, they try to enhance the ability of monetary and exchange rate policies to act in a counter-cyclical way. When capital inflows are very large, they push the domestic demand into a boom and lead to a deficit in the current account. Under those circumstances, the capital account regulations are addressed to discourage capital inflows in order to mitigate pressures towards lower real interest rates -which would artificially reinforce the aggregate demand boom- and towards a real appreciation of the domestic currency -which would increase the current account deficit.

Second, capital account regulations are addressed to reduce the vulnerability of the domestic economy to sudden changes in the international financial environment. This explains the emphasis of those regulations in reducing the share of short-term and liquid liabilities in total capital flows and in imposing limits on the net uncovered foreign exchange positions of the domestic economic agents.

Third, capital account regulations enhance the ability of a country to use foreign savings as complementary to domestic savings and not as substitutes for them. Again, this explains the emphasis of those regulations in reducing the share of short-term capital, which usually finances consumption, *vis-à-vis* long-term capital, which usually finances productive investment.

2. RESERVE REQUIREMENT ON CAPITAL INFLOWS: A PRICE-BASED CAPITAL ACCOUNT REGULATION

The most well-known mechanism of capital account regulation used in both Chile and Colombia during the nineties is the reserve requirement on capital inflows. It was introduced in Chile in 1991² and in Colombia in 1993. The height of the requirement and several details of its operation changed along time and were different in each country. This regulation, however, shared three very important characteristics: (i) they were not quantitative controls but price-based regulations (ii) they affected capital inflows and not capital outflows and (iii) they were designed to have more impact on short-term than on long-term capital flows.

As any price-based mechanism, the reserve requirement on capital inflows was not intended to block the way for those inflows, but to discourage them at the margin, *placing sand on their wheels*. In order to make capital inflows more costly under an external large supply, two key elements were present both in Chile and in Colombia as complements to the reserve requirement: first, restrictive policies on any type of dollarization of deposits in the domestic financial system; second, strict prudential regulations on the net foreign exchange position allowed to financial intermediaries.³ These two elements together guaranteed that the domestic financial intermediaries could provide foreign exchange denominated loans only when they were funded with foreign credit and subject to the reserve requirement. At the same time they inhibited the domestic financial system from becoming a major actor in the speculation in favor or against the peso.

²² In the 1970s Chile also applied a price-based restriction on capital inflows. However, it was ineffective given a huge spread between the domestic and international cost of money. See Ffrench-Davis (2002b, table V-5).

³ Also, as discussed below, other quantitative or administrative tools were used, like minimum periods of stay of FDI, and of investment in equity stock.

The introduction of a non-remunerated reserve requirement in Chile in June 1991 was explicitly addressed to provide more breath and autonomy to monetary policy (Zahler, 1998, p.69; Agosin and Ffrench-Davis, 2001). The deposit of the reserve requirement was initially equivalent to 20% of foreign loans and had to be kept for a minimum of 90 days and a maximum of one year, according to the time frame of the operation. In order to increase its effectiveness, in May 1992 it was raised to 30% and the term of the deposit was raised to one year, independent of the maturity of the loan, which increased the bias against bringing short-term capital into the Chilean economy. In July 1995 was extended to the purchase of Chilean stocks (secondary ADRs) by foreigners.

Although the objective of regulating capital flows continued to be present in Chile after 1996, the attitude of policy-makers was much less pro-active. Despite the fact that there was a significant surge of capital inflows in 1996 and 1997, the authorities failed to accommodate the height of the reserve requirement to the increased supply of funding. The surge clearly weakened the fundamentals of the Chilean economy: the current account deficit increased, the exchange rate appreciated much faster and the stock of liquid foreign liabilities grew (Ffrench-Davis and Tapia, 2001, p.91). When the Asian crisis began in late 1997, therefore, the fundamentals of the Chilean economy were much weaker than they had been during the tequila crisis of 1995. This fact certainly contributed to increase the magnitude of the crisis of 1998 and 1999 when, as we will see, private capital outflows were quite large, including funds of the domestic private social security institutional investors. The reserve requirement was reduced from 30% to 10% in June 1998 and then to 0 percent in September.

Inspired by the Chilean experience, the Colombian reserve requirement on capital inflows was decreed in September 1993, coinciding with the final steps of a process of dismantling administrative capital controls that had started in 1991. The size of the reserve requirement was high enough to make it prohibitive in practice. Exemption made for trade financing, the requirement applied to any “short-term” foreign loan. “Short-term” was initially defined as less than 18-month maturity but this term was raised in March and August of 1994 to three and five years, respectively.⁴

The minimum maturity of the foreign loans to be exempted from the reserve requirement was reduced again to three years during the first semester of 1996. This was explained as a response of the central bank to the fact that the exchange rate had depreciated and the central bank was losing reserves as a consequence of the political crisis for allegedly illegal resources having entered into the presidential campaign of President Samper.

In contrast, in the last part of 1996, after the political crisis was solved, there was a huge increase in international reserves. The Colombian government then issued in January 1997 a State-of-Emergency Decree which, among other measures, established an explicit Tobin tax on all capital inflows (trade financing included) in addition to the reserve requirement regulated by the central bank. The Decree was declared unconstitutional in March 1997 but the central bank rapidly increased the reserve requirement again.

⁴ A history of the reserve requirement on capital inflows in Colombia is summarized in Ocampo and Tovar (1999).

In May 1997, the Colombian central bank introduced several changes in the reserve requirement system, making it simpler and more similar to the Chilean one. A flat deposit in local currency (instead of a dollar denominated deposit) was required for all loans, independently of the maturity. The minimum maturity was thus abandoned but, as in the Chilean case, the new mechanism still implied that the tax equivalent of the deposit was lower the longer the maturity of the corresponding loan. Initially, the size of the reserve requirement was 30% of the foreign loan and had to be kept during 18 months. This numbers were reduced in January and again in September 1998 as a response to the weakened capital inflows. Between September 1998 and May 2000, the reserve requirement was only 10% of the foreign loan and had to be kept during 6 months. In June 2000, the reserve requirement was reduced to zero. Authorities stated, however, that this was not necessarily the end of the mechanism. It was only a resetting of the parameters, and the mechanism could be used again if needed to confront renewed capital surges.

Besides the similarities among the Chilean and the Colombian reserve requirement instruments to deter capital inflows, it seems clear that Chile used them more proactively during the first half of the nineties than after 1995. In contrast, Colombia used them more proactively in the second half of the decade. It is very important to notice that when the Colombian authorities introduced the mechanism in September 1993, they were at the same time dismantling the quantitative controls on capital inflows that had been in place in this country since 1967. In this sense, the introduction of the reserve requirement on capital inflows in Colombia in the first half of the nineties may be interpreted as a step towards financial liberalization, (or the substitution of a price-based for an administrative mechanism) which clearly was not the case in Chile.

3. THE BEHAVIOR OF NON-FDI PRIVATE CAPITAL FLOWS AND THE DEBATE ON THE EFFECTIVENESS OF PRIVATE CAPITAL ACCOUNT REGULATIONS

The behavior of non-FDI private capital flows is presented in Table 1 (column e) and shows significant common elements in Chile and Colombia. Most notably, those flows were highly positive for several years until 1997 and became highly negative in both countries during the crisis of 1998/99.

In the Chilean case, these flows averaged more than US\$ 2.4 billion yearly between 1990 and 1997 and did not have extreme swings during that period. Even in 1995, when the tequila crisis was taking place, they amounted to US\$ 2.0 billion. In contrast, between 1998 and 1999 they implied a net outflow of around US\$ 8 billion in the biennium. Capital outflows had a pause in 2000 but were high again in 2001.

In the Colombian case, private non-FDI capital inflows became important only after 1992. During the initial years of the decade, net capital flows were negative, reflecting perhaps the existence of direct controls which were more effective to discourage inflows than to restrain outflows. As already mentioned, most administrative controls on capital flows were dismantled between 1991 and 1993, coinciding with the introduction of the Chilean-like reserve requirement on capital inflows. Private non-FDI capital flows were highest in Colombia between 1993 and 1996, when they averaged US\$ 2.7 billion per year. As in Chile, they were high even in 1995,

when they amounted to US\$ 2.5 billion, despite the tequila crisis. The reduction in this type of capital inflows took place in 1997, probably because of an increase in the costs of the reserve requirement on capital inflows introduced at the beginning of that year, before the Asian crisis started. In 1998 they were very small but still positive and starting in 1999, they became highly negative.

Based on these figures, it appears easy to doubt on the effectiveness of the reserve requirement that was used to regulate capital inflows. Both in Chile and in Colombia, net capital inflows were highest precisely during the periods in which that regulation was being used. The

TABLE 1

CHILE AND COLOMBIA: CAPITAL FLOWS AND CURRENT ACCOUNT FINANCING, 1990-2002 (US\$ Millions)						
	a. Current Account	b. International Reserves Accumulation	c. Net Direct Foreign Investment	d. Net Foreign Credit to Public Sector ¹	e. Other Flows of Private Capital = b - a - c - d	
A. CHILE						
1990	-485	2,121	654	-222.0	2,174	
1991	-99	1,049	697	-955.1	1,406	
1992	-958	2,344	538	42.2	2,723	
1993	-2,553	173	600	-357.0	2,483	
1994	-1,585	2,919	1,672	-313.8	3,146	
1995	-1,345	741	2,205	-2,085.5	1,967	
1996	-3,083	1,122	3,681	-1,540.3	2,064	
1997	-3,660	3,320	3,809	-244.3	3,416	
1998	-3,918	-2,165	3,144	448.2	-1,839	
1999	99	-644	6,203	-416.0	-6,531	
2000	-766	337	-348	-173.0	1,624	
2001	-1,192	-596	3,045	0.4	-2,449	
2002	-553	199	1,139	1,344	-1,732	
B. COLOMBIA						
1990	544	610	484	-45	-373	
1991	2,347	1,763	437	-347	-675	
1992	876	1,274	745	-56	-292	
1993	-2,221	464	865	-158	1,978	
1994	-3,669	199	1,298	-1,224	3,795	
1995	-4,524	2	712	1,388	2,425	
1996	-4,632	1,721	2,784	856	2,714	
1997	-5,748	277	4,753	1,146	126	
1998	-4,852	-1,390	2,032	1,469	-40	
1999	671	-315	1,336	647	-2,969	
2000	619	870	1,905	614	-2,268	
2001	-1,414	1,217	2,333	1,484	-1,186	
2002 p	-1,607	138	1,158	388	199	

Source: Central Bank of Chile and Banco de la República.

p/ Preliminar

1/ Chile: Includes Central Bank's operations and excludes operations by the state-owned commercial bank (Banco del Estado). In 2002 the figure corresponds to the change in the stock of public debt. Colombia: Corresponds to the net loans to public sector plus the net investment in bonds issued by the public sector.

easy conclusion, however, is not necessarily the correct one. The coexistence of large capital inflows and the reserve requirement may reflect a policy reaction function in which the introduction of capital regulations is caused by the large supply of capital inflows.⁵ That was, evidently, the sequence in both cases.

Moreover, as argued by Cordella (1998), the total supply of capital and hence the amount of capital inflows may even increase as a response to regulations that are effective in reducing the vulnerability of the economy to short-term capital flows. An example may be what happened with the Chilean and the Colombian economies after 1995. The fact that the vulnerability of these two economies proved to be very low during the tequila crisis may help to explain the increase in the supply of capital that took place in 1996 and 1997⁶. On the other hand, if the prudential regulation of inflows attains more sustainable real macroeconomic balances, capital formation is encouraged and the complementarity of foreign and domestic savings is enhanced; thus, larger net inflows are consistent with enhanced macroeconomic sustainability (Ffrench-Davis, 2003).

In any case, it is clear that the regulations on capital inflows used in Chile and Colombia were not able to avoid the large net capital outflows that took place in the final years of the 1990s and the beginning of the new century. The evaluation of the effectiveness of those regulations in this context becomes extremely complex. Our hypothesis may be summarized as follows: the reserve requirement was useful and effective as a temporary policy tool during the boom of capital inflows. First, as a *short-run macroeconomic policy*, it enhanced the ability of the domestic authorities to act in a counter-cyclical way and to deal with the trade-offs between exchange rate and monetary policies. Second, as a *liability-flows policy*, it was effective in reducing the short-term component of capital inflows. Thus, it enhanced the absorptive capacity of a given total inflow, by rising the share of funds more associated to productive investment; by contributing to resist appreciating pressures on the exchange rate it contributed to increase the share of tradables in GDP. Third, as a price-based mechanism, in face of a jump in the external supply of funding, the height of the reserve requirement should have been increased; that was not done in the case of Chile after 1995.

On the other hand, the reserve requirement and, more generally, the type of policies adopted by Chile and Colombia, were not effective to deal with a major and lasting crisis as the one observed after 1997 in those two countries. This is not a reason to discard the temporary use of this type of policies under new capital surges, but to stress the need of other complementary regulations. In particular, the experiences of Chile and Colombia since 1998 highlight the need for more strict controls on the behavior of the stocks of foreign-exchange denominated assets and liabilities. In other words, those experiences show the need for better *asset and liability stock policies*. In addition, in the Chilean case, opening the way for outflows of domestic capital in periods of abundance were ineffective in reducing the excess supply, while in periods of scarcity of external supply became an extremely pro-cyclical outcome.⁷ In the Colombian case, it is clear that the large growing fiscal imbalances that took place since the mid-1990s implied a rapid

⁵ Cardoso and Goldfajn (1998) successfully test this hypothesis for the Brazilian case.

⁶ This is a variable frequently mistreated in econometric research: How changes in the supply of funding are modelled.

⁷ It is interesting to recall that Korea, assumed to be a case of open capital account at present (obviously, it was the opposite in its period of 'miraculous' growth) still applies restrictions on outflows of domestic savings.

increase in the country's foreign exchange liabilities and made it much more difficult to manage the crisis period.

4. THE RESERVE REQUIREMENT AS A SHORT-RUN MACROECONOMIC POLICY TOOL.

In evaluating the effectiveness of the reserve requirement on capital inflows as a macroeconomic policy tool, most analysts have focused on the effects of this regulation on the volume of total capital inflows. Empirical results on this topic are mixed.

Some econometric studies for both Chile and Colombia failed to find effects of the reserve requirement on the total volume of capital inflows, even though they found a significant effect on the composition of flows.⁸ Those studies argue that there is a high substitution between capital inflows of different maturities which implies a compensatory increase in long-term inflows when the reserve requirement induces a reduction in the short-term ones. From there, they conclude that this type of price-based regulation on capital inflows do not have any of macroeconomic impact.

Other recent studies, however, obtain very different results. Le Fort and Lehman (2000) show that, in the Chilean case, the reserve requirement did have an effect on the total volume of private capital inflows, once the effects of interest rate differentials and the evolution of the supply of funds are well taken into account. Similarly, Ocampo and Tovar (1999) find that the reserve requirements in Colombia “were effective in reducing the volume of capital inflows, both due to the increased costs of shorter-term borrowing and to the discrete effects of regulations, associated to the imperfect substitution of borrowing at different maturities” (p. 29).

A paper by Villar and Rincón (2003) takes a different perspective to evaluate the effectiveness of the reserve requirement as a macroeconomic policy tool. This paper argues that the econometric results on the effectiveness of this type of regulation on the volume of capital inflows may be subject to criticism: they do not solve the simultaneity problem that arises from the fact that those regulations affect the domestic interest rates, which in turn affect capital inflows. The papers mentioned in the previous paragraphs obtain partial equilibrium results: given the differential between domestic and foreign interest rates, a tax on capital inflows reduces their volume. The tax, however, should increase the domestic interest rate and it is likely that its total effect on the volume of capital inflows will be ambiguous when this channel is taken into account.

Following Villar and Rincón, the effectiveness of the reserve requirement as a macroeconomic policy tool should be evaluated from the perspective of its impact on the domestic interest rates and the real exchange rate and not exclusively on the total volume of

⁸ For the Chilean case, critical evaluations are developed in Valdés-Prieto and Soto (1998) and De Gregorio, Edwards and Valdés (2000). For the Colombian case, see Cardenas and Barrera (1997).

capital inflows.⁹ Their econometric work show indeed that, in the Colombian case, the reserve requirement was a useful macroeconomic policy tool in a period characterized by large capital inflows, excess aggregate demand, pressures towards domestic currency appreciation and large current account deficits. This tool facilitated a counter-cyclical policy, allowing the domestic authorities to increase the domestic interest rates *vis-à-vis* the foreign interest rate and hence reducing aggregate demand without creating additional pressures towards domestic currency appreciation.

Chile, in 1992 offers one quite illustrative case of the contribution of the reserve requirement to macroeconomic stability. Then, the USA, with a rather low interest rate, was further reducing it in order to face domestic recession, while Chile experienced some overheating and large supply of external funds. The response of Chile was to increase the reserve requirement, thus making space for monetary policy; that allowed Chile to raise its domestic interest rate with net stabilizing effects on aggregate demand.

We can conclude, therefore, that the reserve requirement was a useful macroeconomic policy tool. However, it must be stressed that, as any other macroeconomic policy addressed to affect interest rates and the exchange rate, it is essentially a short-term policy instrument,¹⁰ and to be used only in periods of an 'excessive' supply. It is a counter-cyclical policy tool.

5. THE RESERVE REQUIREMENT AS A LIABILITY POLICY: FLOWS POLICIES VS. STOCK POLICIES

Empirical studies in both Chile and Colombia coincide in showing that the reserve requirement on capital inflows contributed to keep a relatively long maturity of private foreign debt in the nineties.¹¹ From this point of view, this was an effective tool as a *liability policy*. With a long-term maturity of foreign debt, a sudden stop in the supply of capital flows towards emerging markets has a much lesser impact on those markets as far as the refinancing needs are lower. In those conjunctures what matters are gross needs of financing rather than net needs. When the tequila crisis spread over most Latin-American countries in 1995, the maturity structure of foreign debt in Chile and Colombia was perceived as a significant strength of these economies and helped to make them almost immune to the crisis.

However, a high average maturity of private foreign debt is not a sufficient safeguard against a strong and long-lived shortfall in the supply of capital flows. The experiences of Chile and Colombia in 1998-99 suggest that, when the economy receives that type of shock, what was originally contracted to be long-term debt may become shorter-term debt by the decision of the

⁹ This view is consistent with the rationale for capital controls presented by McKinnon and Pill (1996), who argue that they are a useful tool in order to increase domestic interest rates and to discourage the "over-borrowing syndrome".

¹⁰ As already discussed, the "short-term", in this respect, can refer to several years, associated to the extent of the capital surge or dryness.

¹¹ For the Colombian case, see Cárdenas and Barrera (1997) and Ocampo and Tovar (1999). For the Chilean case, see De Gregorio, Edwards and Valdés (2000), Le Fort and Lehman (2000) and Schmidt-Hebbel, Hernández and Gallego (1999).

debtors. The debtors, indeed, reduce the rate of renewal of old debts and buy dollar-denominated assets to hedge their positions. Also, under the pressure of weak economic activity and expectations of devaluation, they may be allowed to prepay their foreign currency liabilities before maturity, as actually happened in Colombia.¹²

TABLE 2

CHILE AND COLOMBIA: INTERNATIONAL RESERVES AND DEBT STOCKS, 1990-2002 (US\$ Millions)						
	Foreign Private Debt		Foreign Public Debt	Total Foreign Debt ¹	International Reserves	
	End Of:	Short term ²	Long Term			
A. CHILE						
1990		1.398	4.235	11.792	17.425	6.710
1991		1.135	4.675	10.554	16.364	7.638
1992		3.027	5.592	9.623	18.242	9.742
1993		2.999	7.167	9.020	19.186	10.252
1994		3.339	9.004	9.135	21.478	13.740
1995		2.816	11.419	7.501	21.736	14.783
1996		2.285	15.531	5.163	22.979	15.805
1997		678	20.935	5.088	26.701	18.274
1998		1.012	24.965	5.714	31.691	16.292
1999		911	27.374	5.827	34.112	14.946
2000		2.153	28.802	5.522	36.477	15.110
2001		1.677	30.596	5.759	38.032	14.400
2002		2.261	30.937	7.197	40.395	15.351
B. COLOMBIA						
1990		1.409	1.113	15.471	17.993	4.595
1991		1.184	981	15.171	17.335	6.500
1992		1.612	1.250	14.416	17.278	7.728
1993		2.587	2.046	14.254	18.887	7.932
1994		3.213	4.806	14.718	22.737	8.104
1995		3.920	6.880	15.540	26.340	8.453
1996		3.151	11.572	16.394	31.116	9.939
1997		3.436	14.191	16.785	34.412	9.908
1998		3.002	14.891	18.787	36.680	8.740
1999		2.267	14.267	20.199	36.733	8.103
2000		2.315	13.207	20.610	36.132	9.006
2001		2.729	12.838	23.471	39.038	10.245
2002 p		3.093	11.360	22.779	37.232	10.844

Source: Central Bank of Chile, Banco de la República.

p/ Preliminary

1/ Colombia: Includes financial leasing transactions.

2/ Refers to transactions originally contracted for one year or less

¹² Since 1997, the Banco de la República of Colombia allowed private debtors to prepay long-term liabilities (which had not deposited the reserve requirement on short-term capital inflows), provided that half of the original maturity had elapsed. From this point of view, the maturity structure of private foreign debt became less important for the balance of payments stability than the maturity structure of public debt.

Table 2 presents the evolution of the stocks of foreign debt in Chile and Colombia. The figures help to highlight the very rapid increase in the private sector foreign debt that took place along the nineties in both countries, though from moderate initial levels. The rapid process of private debt accumulation marked a deep contrast between the period of the tequila crisis and the 1998-99 crisis. At the end of 1994, when the tequila crisis was starting, total private debt was US\$ 12 billion in Chile and US\$ 8 billion in Colombia. Only four years later, at the end of 1998, these numbers had more than doubled (to 26 billion in Chile and to 18 billion in Colombia). Although the short-term component of these debts continued to be low, the huge increase in total private debt surely made the foreign exchange balance sheet much more vulnerable to the crisis.

Behind the behavior of private foreign debt during the nineties there is a rapidly growing currency mismatch in the private sector balance sheets. Both firms and households increased their foreign exchange denominated liabilities without a corresponding increase in foreign exchange denominated assets. Households and firms producing in the non-tradable sectors became highly indebted in foreign currency during the period in which the peso was expected to appreciate, which suggests that the reserve requirement on capital inflows was not binding enough. Only when the crisis of 1998-99 exploded and the Chilean and the Colombian peso started to depreciate, the private sectors in both countries started to look eagerly for hedging instruments, which at that moment reinforced the pressures towards depreciating the domestic currencies. The regulations that had been in place in both Chile and Colombia failed to prevent this from happening. Existing regulations were not strong enough to discourage the financial intermediaries passing currency mismatches through to their clients, in the presence of shortcomings. As a consequence, when the peso actually depreciated, they had to pay a significant cost. In the Colombian experience, to some degree, the financial crisis of 1999 was explained by the sudden increase in the peso value of foreign liabilities due to the peso depreciation. Prudential regulation should have prevented this from happening by reflecting these risks in the balance sheets of the banks that used to lend to clients with this type of currency mismatch. In the case of Chile, a real devaluation much needed for an exchange rate that had appreciated excessively in 1996-97, was delayed thus giving time to private firms to reduce foreign debt with cheap dollars, at the expense of the Central Bank balance sheet.

One main problem with the type of regulations that were used in Chile and Colombia is that they act on the flow of new foreign exchange liabilities and not on the stock of liabilities. We may say then that those *liability-flows policies* should be complemented with *liability-stock policies*. Those stock policies should be primarily based on prudential regulation and supervision, imposing stringent regulatory provisions to the banks lending to households and firms with large foreign currency mismatches.¹³ In addition, as suggested in Ocampo (2003), they could be reinforced with tax provisions applying to foreign currency liabilities. For instance, deductions for interest payments on international loans could be restricted to firms with foreign exchange revenues and up to the amount of those revenues.

¹³ Villar and Rincón (2003). Ocampo (2003) argues that the main problem with this option is that it may encourage non-financial agents to borrow directly abroad. In Chile most of the debt by non-financial firms was owed directly abroad. However, losing access to the domestic financial system may be very costly for firms or households.

6. FOREIGN PORTFOLIO INVESTMENT

While FDI was entirely free in both Chile and Colombia since the beginning of the 1990s¹⁴, these countries maintained restrictions on foreign portfolio investment as a complementary policy to the reserve requirement on foreign loans.

Chile kept a one-year minimum stay for any foreign portfolio investment up to May 2000. Also, as already mentioned, since 1995 the reserve requirement was applied to the purchase of Chilean stocks by foreigners (secondary ADRs). Still, foreign portfolio investment in equity played a very pro-cyclical role, as can be seen in Table 3. Colombia applied a less restrictive regulation. ADRs were not subject to the reserve requirement on capital inflows and foreign portfolio investment in equity was freely allowed, provided that it was done through special purpose funds administered by financial institutions with residence in Colombia. Moreover, in order to accelerate the process of deepening the domestic capital markets for public debt, Colombia facilitated foreign investment in fixed interest securities in 1996. This purpose was certainly met during 1996 and 1997, before the crisis exploded. The stock of foreign investment in domestic public debt went from zero in 1995 to more than 400 million by March 1998. Less than one year later, however, this amount had gone back to almost zero. Therefore, foreign portfolio investment in fixed interest securities, which was liberalized in order to facilitate public financing, reinforced the pro-cyclical nature of foreign investment in equity.

¹⁴ In the Chilean case, however, there was a one year minimum stay before capital repatriation of foreign direct investment was allowed.

TABLE 3

CHILE AND COLOMBIA: NET FLOWS OF FOREIGN PORTFOLIO INVESTMENT IN EQUITY, 1990-2002. (LIABILITIES) 1/ (US\$ Millions)		
End of:	Chile	Colombia
1990	367	0
1991	24	5
1992	338	66
1993	561	145
1994	1.109	478
1995	-248	165
1996	700	292
1997	1.720	278
1998	580	47
1999	524	-27
2000	-427	17
2001	-217	-42
2002 p	-317	18

Source: Central Bank of Chile, Banco de la República.

1/ ADRs and Investment Funds

p/ Preliminary

7. THE ROLE OF DOMESTIC INSTITUTIONAL INVESTORS IN THE FOREIGN EXCHANGE MARKETS

The stronger impact that the crisis of the final years of the 1990s had on the Chilean and Colombian economies, compared with the impact of the tequila crisis, may be explained in part by the more appreciated exchange rates, the stronger and longer reduction in the supply of funds, the higher stock of debt and the higher exposure to volatile portfolio investment. An additional relevant factor may have been the role that major domestic institutional investors started to play in the foreign exchange markets during the second half of the 1990s.

Initially, the restrictions on the activity of domestic institutional investors in the foreign exchange markets were an essential part of the policy framework in which Chile and Colombia introduced the reserve requirement on capital inflows. However, the trend towards financial liberalization that dominated the international economy in the nineties implied that some of these restrictions were gradually relaxed in the second half of the decade. This relaxation made it more difficult to avoid sudden capital outflows and portfolio reallocations as the ones that took place between 1997 and 1999, when the Asian and the Russian crises exploded. The effectiveness of the reserve requirement on capital inflows to reduce the financial vulnerability of both Chile and Colombia was therefore diminished by such relaxation.

The clearest example of this process of relaxation was related with the portfolio investment regime applied to the private pension funds. These funds became very important actors in the domestic capital markets in both countries. Paradoxically, their destabilizing role in the foreign exchange markets was promoted during the second half of the nineties, when the authorities in both Chile and Colombia considered that the effects of foreign capital inflows could be partly compensated by capital outflows originated by these institutional investors. They were then allowed to invest larger shares of their portfolios in foreign currency, expecting that they would play a counter-cyclical role. In practice, however, the role of these funds was highly pro-cyclical. They did not invest much in foreign currency during the period prior to the Asian crisis, in which there were expectations of domestic currency appreciation. Instead, after the Asian crisis exploded, they took advantage of their more relaxed regulation in order to rapidly reallocate huge amounts of their portfolios into foreign currency securities, then reinforcing the demand for foreign currency and the pressures towards depreciation in a very pro-cyclical way. Hence, as argued in Ffrench-Davis and Tapia (2001), the attempt to use a more relaxed regulation on the pension funds proved not to be successful in order to encourage capital outflows and counteract capital inflows. On the contrary, that attempt induced a higher degree of vulnerability of the foreign exchange markets and a reduction in the degrees of freedom of domestic monetary policies (see also Ocampo, 2003; Zahler (2003). Actually, the main source of the recessive adjustment experienced by Chile in 1998-99 was associated to capital outflows by the private social security agents; their net outflow was equivalent to nearly 5% of GDP.

8. PUBLIC CAPITAL FLOWS AND FDI

The reserve requirement and most of the other instruments addressed to discourage capital inflows were applied to both private and public agents. In practice, however, they mostly affected private capital flows as far as public decisions are not driven by short-run price incentives. Net public capital flows ultimately depend on the size of the fiscal deficit, on the share of foreign funds in total financing and on the portfolio decisions taken by the government on the composition of its assets and liabilities.

The behavior of fiscal accounts in the nineties was entirely different in Chile and Colombia. While Chile kept an average fiscal surplus of nearly 2% of GDP, Colombia experienced large and growing fiscal deficits during the last part of the decade. This implied that while public financing was not an issue in Chile, it certainly was in Colombia.

Table 1 (above) highlights the contrast between Chile and Colombia on this matter. Until 1994, both countries could use their fiscal surpluses counter-cyclically, reducing their public external debt in a period of large inflows of private capital. In the Chilean case, this continued to be true in the following years. Most notably, in the biennium 1995-96, net foreign credit to the public sector was negative in US\$ 3.6 billion, partially outweighing the effects of private inflows.

In Colombia, in contrast, there were net inflows of foreign credit to the public sector since 1995. Due to the size of the public sector deficit in Colombia, those flows became quite

large, averaging US\$ 1.1 billion between 1995 and 2001. Between 1995 and 1997, those flows acted pro-cyclically, reinforcing the pressures created by private capital inflows towards the appreciation of the Colombian peso.¹⁵

The impact of the Colombian fiscal deficit on capital flows did not only show up through foreign credit to the public sector. We already mentioned that foreign portfolio investment in Colombia was closely linked with the development of a public debt market, which in turn was urgently needed to finance the government deficit. In addition, the behavior and the characteristics of FDI in Colombia were largely influenced by the size of that deficit. This implied an important contrast with Chile.

Data in Table 1 shows that net flows of FDI were higher in Chile than in Colombia. The yearly averages between 1990 and 2001 were US\$ 2.2 billion and US\$ 1.6 billion, respectively. The difference among the two countries in terms of FDI in Greenfield projects was even larger than suggested by these figures, which implies that the contribution of FDI to increase domestic capital formation and productivity was much higher in Chile. Indeed, until 1998, there was a clear positive relationship between FDI and gross capital formation in that country. Such relationship was lost in 1999, when most FDI became related to mergers and acquisitions, instead of greenfield projects (see French-Davis, 2002a, p. 15). Still, it is interesting to notice that FDI played a counter-cyclical role in Chile in 1999 with respect to other private capital flows.

In contrast with Chile, FDI in Colombia corresponded mostly to privatizations and to investment in the oil sector. On the other hand, the international trend of intense processes of mergers and acquisitions (M&A) reached the Colombian economy. This implied that its relationship with domestic capital formation in the country was extremely weak and that FDI played a pro-cyclical role. The period in which FDI was highest --1996 through 1998, according to Table 1--, corresponds with a rapidly declining ratio of gross fixed capital formation in the economy as a whole (see Section 1, Table 3). When we look at data for Colombia in 1996-98, we can see that M&A operations accounted for 58% of total gross FDI in that period (UNCTAD, 2002). A large part of FDI in Colombia was in practice an instrument of public deficit financing. This source of public financing almost disappeared after 1998. Also, the natural cycle of investment in the Cusiana oil well implied a rapid decline of that source of FDI after 1998, which reinforced the pro-cyclicality of total FDI with respect to other private capital flows.

¹⁵ Paradoxically, after 1997 net inflows of foreign credit to the public sector behaved again as stabilizers of total foreign financing. They, indeed, help to explain the fact that in 1998 the reduction in international reserves was much smaller, and that in the following years the recovery of those reserves was much faster in Colombia than in Chile. In that sense, the existence of larger fiscal deficits in Colombia, provided that they were properly financed abroad, helped to reduce the vulnerability of the Colombian economy to the changes in the mood of international financial markets.

9. CONCLUDING REMARKS

From the analysis above we can extract the following conclusions:

1. The type of capital account regulations that were used both in Chile and Colombia did work successfully in reducing the share of short-term capital inflows in total capital inflows.
2. Also, they allowed monetary policy to increase the domestic interest rates relative to foreign interest rates, without increasing the pressure to further overvalue the domestic currencies. This was a positive outcome in the period of the boom of capital inflows, as far as it allowed monetary policy to be less pro-cyclical, and contributed to more sustainable real macroeconomic balances.
3. However, the reserve requirement was not able to discourage a rapid process of foreign debt accumulation and a deterioration of the current account of the balance of payments during the second half of the nineties that was financed mainly with long-term capital inflows.
4. Also, during the second half of the 1990s there was some liberalization of the rules applied to both foreign portfolio investment and investment of domestic institutional investors in foreign currency securities, which created a more pro-cyclical environment for the management of the crisis of 1998-99.
5. In the Colombian case, the fiscal deficit contributed to make things worse during the second half of the nineties. It implied that long-term external financing entered into the country to finance non-productive governmental activities. The government directly contracted a large part of foreign debt but long-term private debt and FDI also contributed to finance the fiscal deficit through the privatizations that the government undertook in that period. This did not happen in the Chilean case, which exhibited a large fiscal surplus until 1998. In Chile, the government was able to use foreign public debt as a counter-cyclical policy.
6. A first lesson that can be drawn from the comparison between the Chilean and Colombian experiences has to do with the importance of fiscal responsibility in periods of large capital inflows. The ability of governments to undertake counter-cyclical fiscal policies critically depends on what they do during the boom periods. With fiscal surpluses, the government can partially outweigh the effects of private capital inflows by reducing its public debt during the boom periods, as Chile actually did until 1997. Also, if there is a developed market for domestic public debt, substitution of domestic debt for foreign debt may be a good mechanism to reduce pressures towards appreciation in periods of large capital inflows.
7. Still, the fact that Chile suffered so much in the crisis of 1998-99 suggests that fiscal restraint is not enough and that private capital flows (particularly of outflows of

domestic capital in that biennium) introduced too much vulnerability. A lesson may be that the type of capital account regulations that were used in Chile and Colombia were not efficient enough as liability-stock policies. Even with a low exposure to short-term debt, capital outflows may be very large when the domestic residents are able to invest abroad and long-term debtors can pre-pay their liabilities. Even so, it may be mitigated with some controls on the net foreign exchange position of the financial intermediaries, of the main institutional investors (like private pension funds) and, equally important, of the households and firms. Prudential regulation of the financial sector should require banks to reflect the risks that are implicit in lending to households or firms with important currency mismatches between their assets and their liabilities. Those mismatches could also be discouraged through tax provisions.

8. The exchange rate regime may have played a role in aggravating the effects of the reversal in capital flows that took place in 1998-99. The exchange rate bands that were in place in Chile and Colombia along most of the 1990s were useful arrangements for a transition period between fixed exchange rate regimes (with crawling pegs) and floating regimes. The currency bands, however, were more efficient to deal with pressures towards currency appreciation than with pressures towards currency depreciation. The credibility problems that were created by the bands led the authorities to restrict the exchange rate flexibility and to undertake very contractionary monetary policies during the crisis. The lack of a well managed exchange rate flexibility was much more evident in Chile than in Colombia.

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Annex 1
Economic sizes of Chile and Colombia, 2001

	Chile	Colombia
Current GDP (mill US\$)	68,387	83,595
Population (mill)	15.4	43.1
Per capita GDP		
Current US\$	4,440	1,941
PPP US\$	9,754	6,202

Sources: ECLAC and World Bank.

Annex 2
GDP growth in Chile, Colombia and the World, 1974-2002
(annual % change)

	1974-89	1990-97	1998-2002
Chile	2.9	7.6	2.4
Colombia	4.0	3.9	0.4
United States	3.0	2.7	3.0
World	3.3	2.2	2.5

Source: IMF, Central Bank of Chile, Central Bank of Colombia.