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# C E P A L

## REVIEW

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*The following symbols are used in tables in the Review:*

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(...)	Three dots indicate that data are not available or are not separately reported.
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(—)	A dash indicates that the amount is nil or negligible.
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	A blank space in a table means that the item in question is not applicable.
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(-)	A minus sign indicates a deficit or decrease, unless otherwise specified.
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(.)	A point is used to indicate decimals.
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(/)	A slash indicates a crop year or fiscal year, e.g., 2001/2002.
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(-)	Use of a hyphen between years, e.g., 2001-2002, indicates reference to the complete number of calendar years involved, including the beginning and end years.
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# Colombia's experience *with reserve* requirements on *capital inflows*

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Smoothing out capital-account cycles and reducing their vulnerability are desirable policy objectives in developing countries. This paper evaluates the advantages of a simple, non-discretionary, preventive (prudential) price-based incentive that severely penalizes short-term foreign currency liabilities. In particular, it examines the effectiveness of controls on capital inflows in Colombia during the 1990s. The analysis finds evidence supporting the conclusion that these controls were effective in reducing the overall volume of net capital inflows and that they helped to improve the term structure of foreign borrowing. An econometric analysis suggests that capital flows were directly related to interest rate differentials, controlling for the additional cost imposed by unremunerated reserve requirements on foreign borrowing. Hence, the Colombian system of controls on foreign borrowing was both an effective macroeconomic policy that allowed the country to gain a degree of monetary and exchange-rate control and a useful “liability policy” that helped improve the term structure of its foreign debt.

# I

## Introduction

It is now widely recognized that developing countries—and particularly emerging economies—are extremely vulnerable to fluctuations in international capital flows. The high economic and social costs entailed in sudden reversals of these flows, especially when they lead to financial crises, may easily outweigh the potential gains offered by increased capital mobility. As a result, an essential objective of macroeconomic policy is to reduce the intensity of capital-account cycles with a view to realizing the benefits of international financial integration while reducing the macroeconomic instability and financial vulnerability associated with these cycles.<sup>1</sup>

In the 1990s, most emerging economies had to deal with large capital inflows.<sup>2</sup> Policy responses to them, although diverse,<sup>3</sup> reflected the common aim of mitigating their effects in terms of both appreciation pressures and excessive reliance on short-term capital inflows.<sup>4</sup> To avoid financial crises in the future, it will be critical to determine which of the policies applied during this period proved effective in managing such capital surges and, in particular, in preventing the excessive accumulation of risk that in some cases led to financial crises or outright meltdowns when there was a sudden interruption of external financing.

The recent literature has emphasized that crisis prevention strategies should involve the adoption of countercyclical (i.e., in that phase of the cycle,

contractionary) macroeconomic policies during periods of capital-account surges and the development of strong prudential regulations and supervision frameworks for domestic financial systems. It is also recognized, however, that while these approaches are both necessary and desirable, countercyclical macroeconomic policies may be compromised during boom periods by the additional capital inflows they induce (e.g., the larger flows generated by sterilized monetary intervention via its impact on interest rates). Moreover, it is recognized that the effects of prudential regulation can be circumvented through direct borrowing abroad. This implies that it may be useful to complement such preventive policies with policy instruments aimed directly at the source of the macroeconomic and financial pressures faced by developing countries during boom periods – i.e., excessive capital inflows.<sup>5</sup>

In this regard, a policy that has been considered to be potentially effective involves the application of price-based controls on capital inflows – i.e., an unremunerated deposit or reserve requirement on foreign borrowing.<sup>6</sup> In particular, it has been argued that this type of capital-account regulation could be useful both as a macroeconomic policy tool and as a “liability policy” for improving the debt profile of developing countries.

Viewed as a macroeconomic policy tool, such regulations aim directly at the source of boom-bust cycles: unstable capital flows. If they succeed in reducing total capital inflows, they will provide some room to “lean against the wind” during periods of financial euphoria through the adoption of a contractionary monetary policy and/or reduced exchange-rate appreciation pressures. If effective, they will also reduce or eliminate the quasi-fiscal costs associated with sterilized foreign-exchange accumulation.

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□ We appreciate the helpful comments and suggestions made on a previous version of this paper by Sylvia Díaz, Charles Engel, Yuichi Kitamura, Jorge Tovar and Kenneth West.

<sup>1</sup> Gourinchas, Valdés and Landerretche (2001) provide a detailed account of the different sources of such vulnerability.

<sup>2</sup> For a review of the factors driving these surges in capital flows to developing countries, see Calvo, Leiderman and Reinhart (1996).

<sup>3</sup> Fiscal austerity measures, accelerated trade liberalization, increased exchange rate flexibility, sterilized intervention, liberalization of capital outflows and controls on capital inflows were the main policies used to deal with surges in capital inflows. A good review of them can be found in Reinhart and Dunaway (1996).

<sup>4</sup> Indeed, cumulative exchange rate appreciation and, especially, excessive reliance on short-term foreign liabilities appear to be key determinants of recent financial crises. See Furman and Stiglitz (1998) and Rodrik and Velasco (2000).

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<sup>5</sup> See Furman and Stiglitz (1998), Williamson and Mahar (1998), Eichengreen (1999) and Ocampo (2003a and 2003b).

<sup>6</sup> Although “reserve requirement” will be used most of the time, the term “deposit” (at the central bank) will also be used in this paper as a synonym.



Viewed as a liability policy, such regulations recognize the fact that the market rewards sound external debt profiles (Rodrik and Velasco, 2000). This reflects the fact that, during times of uncertainty, the market responds to *gross* (rather than merely net) financing requirements, which means that the rollover of short-term liabilities is not financially neutral. Under these circumstances, a maturity profile that leans towards longer-term obligations will reduce illiquidity risks. This indicates that measures to improve the maturity structures of both the private and public sectors' external and domestic liabilities should be an essential component of economic policy management during booms.

Broadly speaking, the existing empirical literature supports the "liability policy" effects of price-based controls – i.e., the fact that they discourage short-term capital inflows and thus improve the maturity profile of external liabilities. However, the question of whether these controls reduce net capital inflows and ease pressures on the exchange rate is still a matter of controversy. In fact, few empirical studies have

analysed these issues, and the evidence relies mostly on the Chilean experience.<sup>7</sup>

This paper will address the issue of the effectiveness of price-based controls on capital inflows based on Colombia's experience in the 1990s. In particular, it examines whether these controls influenced the level and composition of financial inflows. Following this introduction, the rest of the paper is organized as follows. Section II presents an overview of the Colombian regulatory framework for foreign-exchange transactions in the 1990s. Section III discusses the conceptual framework of the analysis. Section IV presents econometric evidence of the impact of capital controls on the level and term structure of net private cash capital flows. This is complemented with an analysis of the sensitivity of capital flows to interest rate differentials before and after the capital account was liberalized in Colombia. A number of complementary econometric exercises are employed for this purpose. Finally, some concluding remarks are presented in section V.

## II

### Colombian capital-account regulation

Colombia liberalized foreign-exchange transactions in the early 1990s as part of a broader programme of structural reforms. The initial stage of this process took place in 1991, when the foreign-exchange control system that had prevailed for a quarter of a century was modified in order to allow financial intermediaries to manage foreign transactions without being subject to prior controls by the central bank (Banco de la República) and to allow firms to use their bank accounts to manage foreign-exchange revenues and expenditures. Despite this liberalization, transactions continued to be highly regulated and, in particular, remained subject to

the requirement that they should be channelled through financial intermediaries that were legally authorized to operate in the market. Additionally, the 1991 reform established a minimum maturity of one year for foreign loans<sup>8</sup> and maintained strict regulations on the final use of funds from such loans, which had to be used for trade or investment financing. In February 1992, for the first time, firms were allowed to contract short-term credits for use as working capital.

It was not until September 1993 that more sweeping changes were introduced. During this second stage of reforms, the system of regulating capital flows based on their final use was replaced by a system based on the *maturities* of foreign-currency obligations. Additionally, domestic financial intermediaries were

<sup>7</sup> Studies on the effects of reserve requirements in Chile include De Gregorio, Edwards and Valdés (2000), Edwards (1999 and 1998), Agosin and Ffrench-Davis (1999 and 1996), Budnevich and Le Fort (1997) and Valdés and Soto (1998). For a general overview, see Montiel and Reinhart (1999).

<sup>8</sup> Some exceptions were granted for specific commercial credits.

Colombia: Direct restrictions on foreign-currency borrowing

Year	Month	System	Loans subject to reserve requirements	Reserve requirement	Maturity of reserve requirement	Reserve requirement denomination
1991	January	Based on the final use of the loan				
1993	September		With maturity under 18 months	47%	12 months	US dollars
1994	March		With maturity under 36 months according to a table	93% Less than 12 months 64% Between 12 and 24 months 50% Between 24 and 36 months	12 months	US dollars
	August	Based on the maturity of the loan	With maturity under 60 months according to a table	Maximum 140% 30 days Minimum 42.8% 60 months	12 months	US dollars
1996	February		With maturity under 48 months according to a table			US dollars
	March		With maturity under 36 months	50%	18 months	US dollars
1997	January	Explicit Tobin (in addition to the deposit)	All	Variable according to interest differential		
	March	Based on the maturity of the loan	With maturity under 60 months			
	May		All	50% 30%	18 months 18 months	US dollars Colombian pesos
1998	January		All	25%	12 months	Colombian pesos
	September	Flat	All	10%	6 months	Colombian pesos
1999						
2000	May	None	None	0%	None	None

Source: Central Bank of Colombia (Banco de la República).

authorized to lend in foreign currency to domestic firms and residents regardless of the final use of the credit, to lend to foreigners in international currencies and to invest liquid assets abroad. However, all debts denominated in foreign currency had to be registered with the central bank, including short-term commercial credits (which previously had not been subject to this requirement).

More specifically, the new system required a dollar-denominated reserve to be deposited in the central bank for all loans of less than a certain maturity (referred to here as the *minimum maturity*), at a pre-specified rate and for a predetermined holding period. In fact, the reserve requirement was akin to a tax, as it could be immediately redeemed at pre-established discount rates.<sup>9</sup> The system underwent major changes in subsequent years, however, as summarized in table 1. In September 1993, a dollar denominated one-year reserve requirement of 47% was established for all loans with terms below a minimum of 18 months.<sup>10</sup> In March 1994, the minimum maturity was set at three years and three types of dollar reserve requirements were established 93% for loans with maturities up to one year, 64% for those with maturities up to two years, and 50% for those with maturities up to three years. In August 1994, the minimum maturity was increased to five years and the maturity of the deposit was matched with that of the loan. The reserve requirement corresponded to a complex table, with a ceiling of 140%

for loans maturing in less than 30 days and a floor of 42% for loans maturing in five years. In February 1996, the minimum maturity was shortened to four years and a new reserve requirement table was established. In March of that year, the minimum maturity was shortened again, to three years, and a flat deposit rate was established, equivalent to 50% of the loan, with an 18-month maturity.

In January 1997, the government imposed an explicit (Tobin) tax on all capital flows, in addition to the reserve requirement. This tax was short-lived, however, since it was decreed unconstitutional in March. In response to the Constitutional Court's ruling, the economic authorities immediately imposed stricter reserve requirements on foreign borrowing. The minimum maturity was raised to five years and the deposit table was maintained. In May 1997, a simpler system, similar to the one used in Chile, was introduced. The new system established a flat reserve requirement in local currency with an 18-month maturity for all loans. The principle of minimum maturity was therefore abandoned and peso-denominated reserve requirements replaced the dollar-denominated ones. In January and September 1998, the reserve requirement rate and holding periods were reduced in response to the pressures created by the international financial crisis. The reserve requirement was finally eliminated in May 2000, though the authorities retained the option of re-establishing it.

### III

## Conceptual framework

A simple portfolio framework based on the interest parity condition will be used to analyse the effects of regulation of private capital flows.<sup>11-12</sup> Accordingly, under perfect substitutability of domestic and foreign assets, a risk-neutral investor will choose to hold foreign

or domestic assets based on the uncovered interest rate differential or arbitrage factor; i.e., the difference between domestic interest rates and foreign interest

<sup>9</sup> Although this was a non-remunerated reserve requirement, this did not mean that it could not have positive or negative returns. In fact, such returns could arise owing to changes in the relative value of the currency in which the deposit was made.

<sup>10</sup> This means that a one-year reserve requirement of US\$ 47 had to be held at the central bank (Banco de la República) for every US\$ 100 borrowed abroad.

<sup>11</sup> See Frankel (1992) and Schulze (2000) for a discussion of how to measure capital mobility.

<sup>12</sup> An alternative would be to use an asset-pricing model framework. However, the problem with using these models to test for the existence of barriers to international investment is that such tests typically lack explanatory power. Tests that use market integration as the null hypothesis cannot econometrically reject the existence of significant barriers because the estimates are too imprecise. See Schulze (2000), p. 162.

rates plus expected devaluation. Formally, this may be expressed as:

$$[1] \quad A = \frac{1+i}{(1+i^*)(1+d^e)} - 1$$

where  $i$  is the domestic interest (deposit) rate,  $i^*$  is the equivalent foreign interest rate and  $d^e$  is the expected devaluation. If  $A > 0$ , investors will prefer domestic assets and, consequently, the country will experience capital inflows. On the other hand, if  $A < 0$ , investors will prefer foreign assets, and the country will experience capital outflows. Lastly, investors will display no preference for either domestic or foreign assets if  $A = 0$ , in which case their portfolio will be in equilibrium and there will be no capital flows associated with arbitrage factors.

In the presence of the reserve requirement on capital inflows, however, the arbitrage factor needs to be adjusted to take into account the opportunity cost of such requirements.<sup>13</sup> As a result, the interest differential may be calculated as:

$$[2] \quad A = \frac{1+i}{1+\phi} - 1$$

where  $\phi$  is the (discounted) total annual cost of the foreign loan. The precise expression for cost  $\phi$  can be derived from the fact that the present value of reserve requirements per dollar borrowed,  $C$ , is:

$$[3] \quad C = r \left[ 1 - \frac{1+d^e\theta}{1+i} \right]^{td}$$

where  $r$  is the reserve requirement rate per dollar borrowed abroad and  $td$  is the maturity of the deposit. In addition, for the period when reserve requirements were dollar-denominated (September-May 1997),

$\theta$  equals 1, whereas for the period when they were peso-denominated (May 1997-May 2000),  $\theta$  equals 0.

Given equation 3, the future value of reserve requirements may be calculated as follows:<sup>14</sup>

$$[4] \quad Lf = [(1+i^*)(1+d^e\theta)]^{tc} + C(1+i)^{tc}$$

where  $tc$  is the maturity of the loan. Therefore, using equation 4, it is possible to calculate the total annual cost of the loan,  $\phi$ :

$$[5] \quad \phi = Lf^{(1/tc)} - 1$$

which is used in equation 2 to calculate the arbitrage factor. Finally, the tax equivalent of reserve requirements on foreign borrowing can be calculated using the following expression:

$$[6] \quad \tau = \frac{1+\phi}{(1+i^*)(1+d^e)} - 1$$

The tax equivalent of reserve requirements is a function of three main variables: (i) the deposit rate ( $r$ ); (ii) the ratio of the maturity of the loan to the maturity of the reserve requirement; and (iii) the fact that, when the reserve requirements were dollar-denominated (between September 1993 and May 1997), their opportunity cost was positively related to interest rates and inversely related to the devaluation rate. This last effect was exactly opposite to the direct effect of the devaluation rate on the cost of foreign borrowing, which allowed the reserve requirement to act as a (partial) stabilizer on the cost of foreign borrowing. Indeed, lower borrowing costs due to a slow rate of devaluation or appreciation of the exchange rate increased the tax equivalent of the reserve requirement, while the opposite occurred if borrowing costs increased because of a faster devaluation rate. This stabilizing effect was lost after May 1997, however, when the dollar reserve requirement was replaced with the peso-denominated scheme.

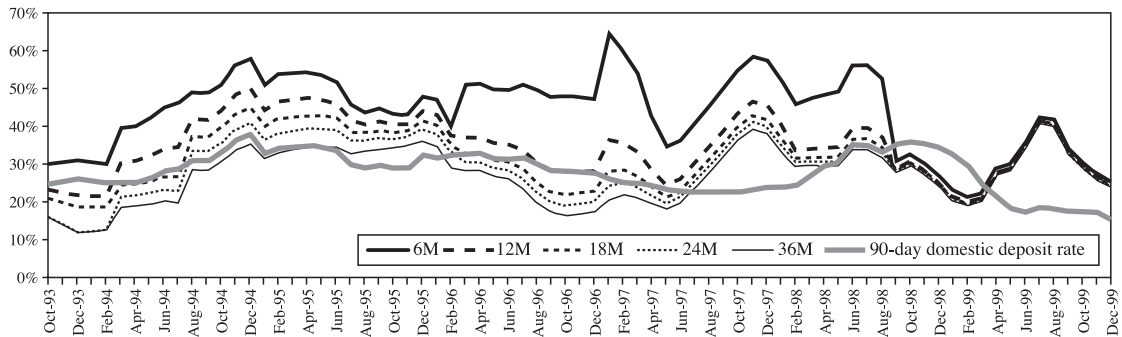
<sup>13</sup> The framework used in this paper assumes imperfect substitution of domestic and foreign assets. Theoretically, a country-risk premium should be included in the analysis. However, there is no consistent measure of Colombia's country-risk premiums during the period of analysis. An implicit assumption is thus that risk premiums are dependent on the factors that are included in the analysis – i.e., capital regulations and the dummies that capture the external financial environment.

<sup>14</sup> Since the maturities of the reserve requirement and the loan may differ, it is easier to calculate the future value of the reserve requirement.

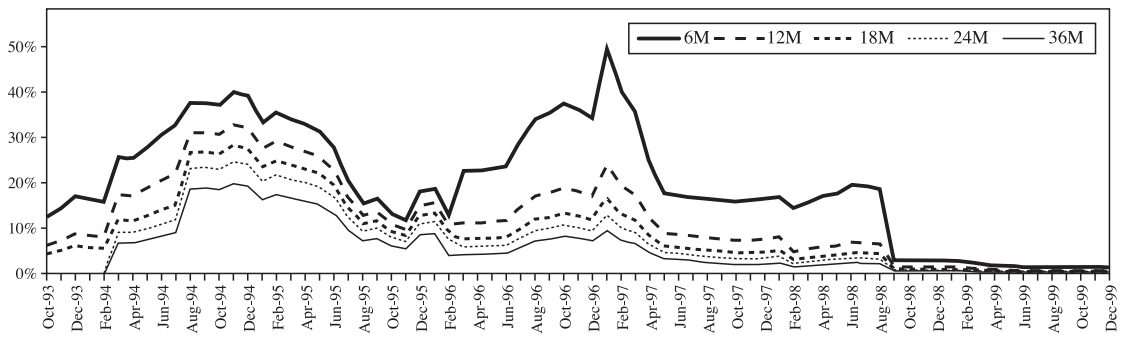
FIGURE 1

**Colombia: Total cost of foreign borrowing**

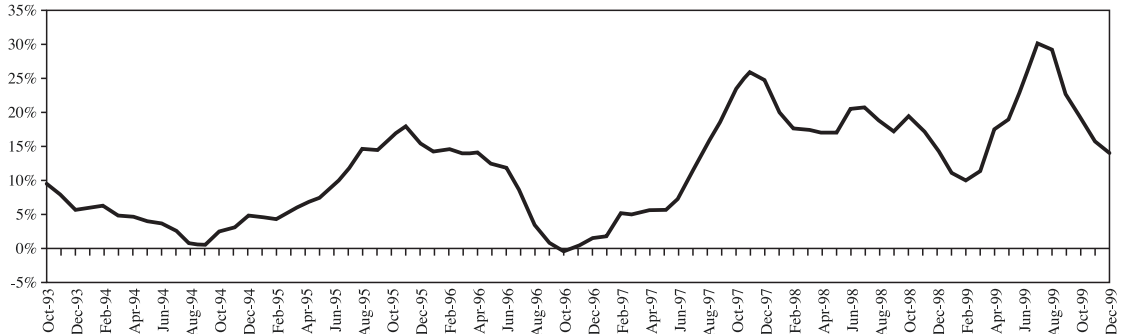
**A. Effects of reserve requirements on the relative cost of foreign borrowing**



**B. Tax equivalent of reserve requirements**



**C. Annual devaluation**



Source: Calculations based on data from the Central Bank of Colombia (Banco de la República).

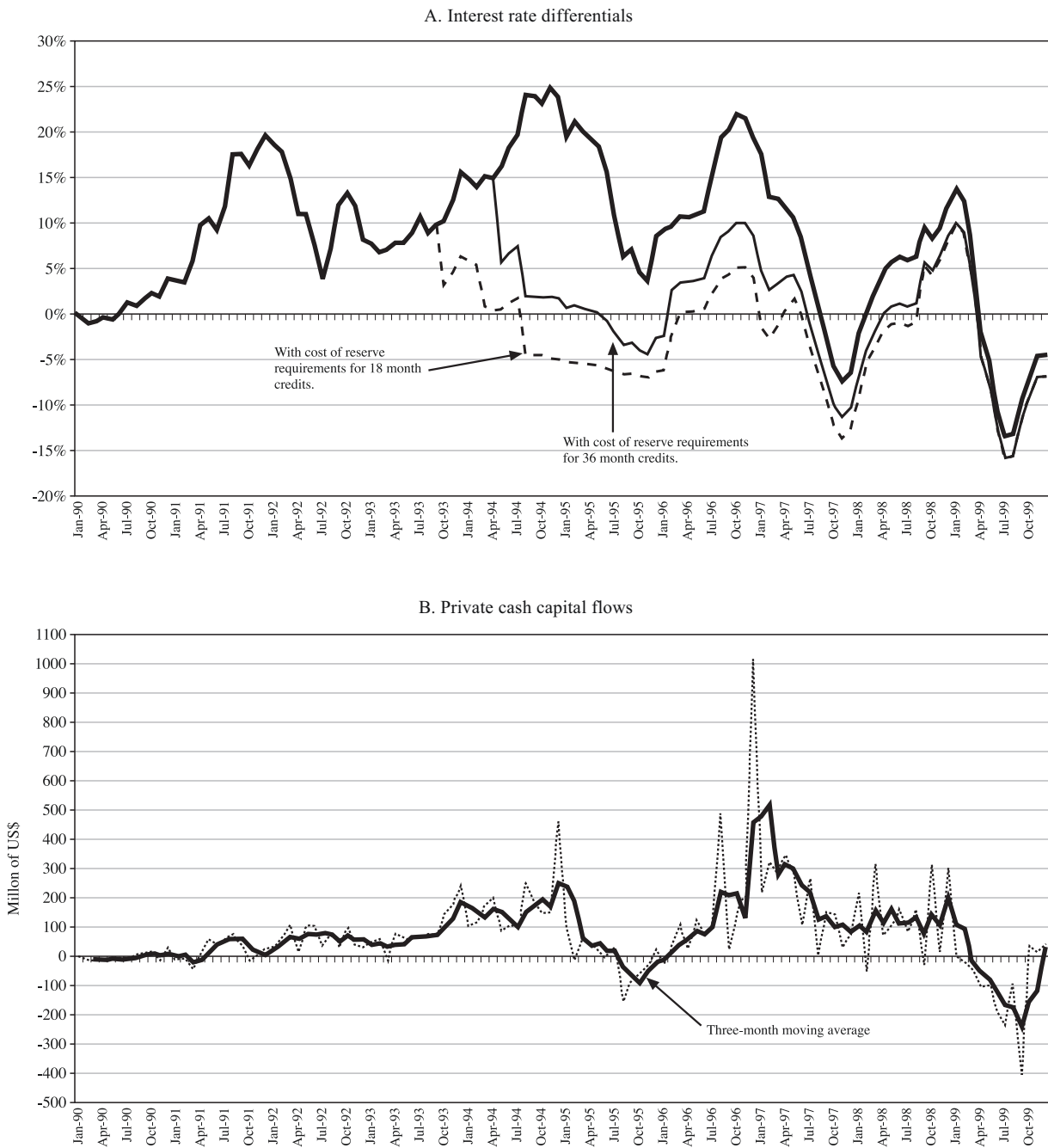
Figure 1 shows the calculation of the total cost of foreign borrowing and the tax equivalent of the reserve requirement for loans of 6, 12, 18, 24 and 36 months,<sup>15</sup>

<sup>15</sup> For the purposes of the calculation,  $i$  is the 90-day domestic (passive or deposit) interest rate,  $i^*$  is the equivalent United States interest rate and  $d^e$  was calculated using a linear combination of annualized nominal devaluation in the 12 preceding and 12 following months, giving equal weights to each observation.

and the annual nominal devaluation rate. These figures show that regulations made short-term foreign borrowing very expensive for most of the decade, especially in the case of 6-month loans. It should be noted, however, that until early 1997 the high cost of foreign borrowing was associated with trends in the tax equivalent of reserve requirements. However, after the May 1997 regulatory change, the high cost of foreign borrowing basically reflected strong devaluation

FIGURE 2

Colombia: Interest rate differentials and private cash capital flows



Source: Calculations based on data from the Central Bank of Colombia (Banco de la República).

pressures on the nominal exchange rate associated with the international financial crises prevailing at the time.

Figure 2 shows basic data on interest rate differentials, excluding and including the costs of reserve requirements for 18-month and 36-month loans, respectively,<sup>16</sup> and private capital flows involving cash transactions or, simply, capital cash flows<sup>17</sup> (a three-month moving average has been included in the figure to show trends in the data). Panel A shows that major incentives for capital inflows were present from the second quarter of 1991 to mid-1992, from the third quarter of 1993 to the second quarter of 1995, from early 1996 to the second quarter of 1997 and, lastly, in the last quarter of 1998 and the first quarter of 1999.

It may be noted that, for 36-month loans, incentives to borrow declined after March 1994 and disappeared altogether once the August 1994 regulation was put in place. In fact, interest rate differentials became negative and incentives to borrow abroad were non-existent by

mid-1995. The combined effects of these restrictive regulations and a faster devaluation of the nominal exchange rate explain the sudden interruption of capital flows experienced in the third quarter of 1995 (see section B of figure 2). The more flexible regulations introduced in early 1996, together with the appreciation of the nominal exchange rate, prompted a rapid increase in capital inflows in the second half of 1996. By late 1996, speculative attacks threatened to push the exchange rate below the floor of the currency band (as reflected by the peak in capital inflows observed in the data for December 1996). As discussed in section II, the government reacted to this capital surge by imposing an explicit (Tobin) tax in January 1997. The policy measures that followed in March and May of that year helped to neutralize capital inflows. Indeed, inflows remained stable until early 1999, when the Brazilian crisis triggered rapid capital outflows and generated strong devaluation pressures.

## IV

### Determinants of private capital flows

#### 1. A review of the existing literature

A brief review of the existing literature on the effectiveness of price-based capital controls in Colombia provides a useful background for the additional econometric evidence presented below. The first attempt to study the determinants of capital flows following the liberalization policies adopted in 1993 was conducted by Cárdenas and Barrera (1997). Those authors argued that regulation was effective in shifting the composition of capital inflows towards longer-term maturities, but ineffective in reducing the volume of net flows. These arguments are based on three sets of findings. First, taking monthly data for the period January 1985 to June 1996, those authors found no relationship between capital flows and interest rate differentials when they used the tax equivalent of reserve requirements for short-term (18-month and 24-

month) loans.<sup>18</sup> Second, using dummy variables, they found signs of speculative behaviour before and after the regulations were changed. Lastly, they found that control variables had no permanent effects, as reflected by the insignificance of the coefficients for dummy variables covering the whole period for which specific controls were in place. The only exception was a dummy variable for the period January 1995-June 1996, which they interpreted as a “tequila effect”.

As indicated by Villar and Rincón (2003), Cárdenas and Barrera (1997) found no evidence of a relationship between capital flows and the tax equivalent of reserve requirements because they failed to consider the effects of administrative controls prior to 1993. The effects of such controls and the regime change introduced in 1993 were analysed by Ocampo and Tovar (1997), employing monthly data for the period January 1990-December 1996. They concluded that controls on capital inflows

<sup>16</sup> See equation 2.

<sup>17</sup> In Colombian terminology, these refer to flows that affect the foreign currency balance.

<sup>18</sup> The formula used by Cárdenas and Barrera (1997) to measure the tax equivalent of reserve requirements is different from the one discussed in the previous section and is inaccurate.



were effective in altering not only their term structure, but also the volume of net capital inflows. Unlike Cárdenas and Barrera (1997), they found evidence of interest arbitrage when they included the tax equivalent of reserve requirements for short-term loans (18 and 36 months). Furthermore, tests for the temporary effects of the different regulations, as reflected by dummy variables, suggested that external debt stock adjustments occurred after the February 1992 and September 1993 liberalization measures. They found evidence, too, of strong speculative behaviour prior to the August 1994 regulation (see the following section for an explanation), but also of a considerable though delayed effect of this policy change, which reduced capital inflows by a larger amount than the increases induced by the previous speculation. This result provides an alternative to Cárdenas and Barrera's "tequila effect" interpretation – i.e., that the capital controls introduced in August 1994 were effective, but with a lag. This interpretation seems reasonable, since spreads on sovereign bonds suggest that the Mexican crisis had only minor effects in Colombia. Also, aggregate net flows to Latin America suggest that contagion was significant only in the first quarter of 1995.<sup>19</sup>

In another paper, Rincón (1999) constructed an alternative measure of short-term monthly private capital flows to evaluate the effectiveness of capital controls.<sup>20</sup> His results, based on cointegration analysis, provided evidence of the effectiveness of capital controls on financial inflows. In particular, he found a significant negative statistical relationship between the tax equivalent of reserve requirements, as measured by Ocampo and Tovar (1997), and capital flows. However, he did not control for stock adjustments associated with

changes in regulations, which is a central issue of the debate on the effectiveness of capital controls (Cárdenas and Barrera, 1997; Ocampo and Tovar, 1997).

Cárdenas and Steiner (2000) analysed the determinants of private capital flows using quarterly data for the period 1987-1997. Their study used alternative measures of capital flows, which included, apart from the central bank's foreign exchange balance, estimates of capital flows filtered through non-factor service transactions.<sup>21</sup> These measures were then used in two regressions of the determinants of capital flows. In the first, capital flows were regressed against a proxy for the external environment faced by the region (as reflected in the funds raised in international markets by Latin American countries). In the second, regressions were run against effective interest rate differentials, including the cost of reserve requirements under alternative maturities.<sup>22</sup> Their findings suggested that capital flows were highly sensitive to the external environment, as well as to interest rate differentials, including the cost of reserve requirements. While they suggested that these results "should be interpreted as indirect evidence that Tobin taxes in Colombia not only affect the term structure of private capital inflows but also diminish their absolute amount", Cárdenas and Steiner (2000) hastened to point out that alternative exercises do not support this view.

In one of these alternative exercises, Cárdenas and Steiner ran OLS regressions for capital flows while controlling for interest rate differentials, excluding the cost of reserve requirements and the external environment variable. The effects of price-based capital account regulations were captured in this exercise by a dummy variable for the post-March 1993 period in which those regulations were in place. The results of this exercise indicated that capital flows were positively and significantly related to interest rate differentials and that they depended little on external factors, whether or not the post-March 1993 dummy was included. The effect of the dummy variable was significant in only one case, and in some cases the sign was positive, leading the authors to conclude "[...] that if Tobin taxes

<sup>19</sup> Cárdenas and Barrera (1997) and Ocampo and Tovar (1997) also examined whether interest rate arbitrage filtered through the service and trade accounts. The first study found evidence of filtering through the service account but not through the trade account; the second found no evidence of filtering in either case.

<sup>20</sup> This study uses monthly series constructed from quarterly balance-of-payments data, rather than the cash flow accounts of the central bank's foreign exchange balance, on which all the other studies are based. The major difference between the two is that they take different approaches to trade financing (see footnote 23 below). It should be pointed out that one disadvantage of balance-of-payments accounts is that they are only available on a quarterly basis, whereas figures 1 and 2 of the present paper indicate that monthly capital flows are highly volatile. This shows that the data-generating process cannot be adequately captured using quarterly data.

<sup>21</sup> Three measures of private capital flows were used in this paper. The simplest was the capital account balance of the central bank's foreign exchange balance. The other two add, respectively, the "transitory" component of the private balance of non-factor services and the total balance of non-factor services.

<sup>22</sup> Maturities of 18, 24, 36 and 60 months were used.



did in fact induce a decline in short-term foreign borrowing, they fostered an increase in overall foreign borrowing”, indicating, furthermore, that “[t]his last point most probably has to do with the fact that while the Tobin taxes by definition reduce the interest rate differential [...] they might enhance the relative attractiveness of the country as a whole”. However, this explanation suggests that the authors might be misinterpreting what the dummy is capturing. Indeed, if the attractiveness of the country is driving the result, the dummy is probably capturing something else, such as the “pull factors” associated with structural reforms.<sup>23</sup>

Lastly, Villar and Rincón (2003) examined the effectiveness of capital controls from a different perspective. Their main concern was whether reserve requirements help authorities in open economies to manage the trade-off they face by enabling them, in particular, to avoid an excessive appreciation of the domestic currency while keeping control of domestic interest rates in order to discourage excess spending in the economy. In order to answer this question, they estimated reduced form equations for the period 1993-1999. These equations were derived from a partial equilibrium model aimed at analysing the joint determination of real interest rates and real exchange rates. Their model relied on three equations: one for the short-run determinants of the real interest rate, one for the long-run dynamics of the real exchange rate and one for the behaviour of capital flows.<sup>24</sup>

Their econometric estimates and simulations indicated that price-based controls on capital inflows had a positive effect on domestic ex-ante real interest

rates and, therefore, that controls were effective in increasing “[...] domestic real interest rates in a context of an open economy with a low degree of monetary autonomy”. They also found that the controls produced this effect without creating pressure for a real appreciation of the peso.

## 2. Econometric framework

As discussed in the preceding sections, the uncovered interest rate differential approach provides a suitable framework for studying the effects of Colombia’s regulation of capital flows. Indeed, using monthly data for the period January 1990-December 1999, it is possible to estimate an equation in which private capital flows, as measured by the central bank’s foreign exchange balance,<sup>25</sup> are a function of interest rate differentials and other variables. In other words, it can be assumed that there is a portfolio allocation problem that yields a (linear) solution of the following type:

$$[7] \quad Kf = Kf(g, A, \delta_i, \phi_i)$$

+     +     -

where  $g$  is assumed to be an economic activity variable, proxied by imports of capital goods;  $A$  is the interest rate differential arbitrage factor, including the effects of reserve requirements on foreign borrowing, as defined by equation 2 and graphed in figure 2;  $\delta_i$  represents the dummy used to control for the effect on total volume of the different regulations enforced during the period of analysis;<sup>26</sup> and  $\phi_i$  represents the dummies

<sup>23</sup> Explanations for capital flows to developing countries have focused on two main factors: “push” and “pull” factors. The first are factors that operate by reducing the attractiveness of capital flows to industrialized countries. The second are factors that attract capital as a result of improvements in the risk/return characteristics of assets issued by developing countries. Lastly, a third factor could be associated with a change in the degree of financial integration due to regulatory changes (see Agénor and Montiel, 1999).

<sup>24</sup> The interest rate is determined by expected real devaluation, the tax equivalent of reserve requirements and the international *ex-ante* interest rate. Short-run deviations from the long-run parity condition are presumed to be associated with excess domestic money supply. The exchange rate is determined, by long-run real factors, such as the terms of trade, government expenditure, real capital flows and a trend capturing productivity and technological changes. Lastly, capital flows are modelled as a function of the interest rate differentials, including the tax equivalent of reserve requirements.

<sup>25</sup> This measure of cash capital flows differs from normal balance-of-payments accounts in that exports and imports are registered at the time when they are actually paid for, which is when they actually generate a cash flow. Accordingly, trade financing is excluded from the capital account and is treated as a determinant of the current account of the foreign exchange balance. In any case, it is correct to exclude trade financing from the current exercise, since the regulations pertaining to it were different and were only partly subject to reserve requirements. Also, Ocampo and Tovar (1997) found no evidence of interest rate arbitrage in trade financing.

<sup>26</sup> Other variables used in the literature include credit ratings or measures of excess expenditure to capture determinants of current account deficits. Although it may be desirable to control for these, the way such series have been constructed makes them unsuitable. Indeed, authors such as De Gregorio, Edwards and Valdés (2000) or Rincón (1999) have constructed monthly series from annual or quarterly series, which can easily result in biased estimates.

used to control for temporary changes in the supply of capital flows associated with the tequila, Asian, Russian and Brazilian crises.<sup>27</sup>

The signs in equation 7 show the expected relationship between private capital flows and each of the explanatory variables. However, the interpretation of the dummies for capital controls depends on whether the regulations liberalized the capital account (i.e., in February 1992, September 1993, February-March 1996, March 1997 and January and September 1998) or tightened the controls (i.e., in March and August 1994, January 1997 and May 1997; see table 1).<sup>28</sup> A positive coefficient is expected in the first case, and should be interpreted as an adjustment in stocks of debt induced by liberalization. Meanwhile, a negative coefficient is expected in the latter case, reflecting the discrete effect of controls on capital inflows that generate effects beyond those captured in the interest rate differential ( $A$ ).

The interpretation of the dummies used for the period August 1994-January 1996 warrants special attention. In the weeks preceding the adoption of tighter measures in August 1994, the central bank received registrations for significant amounts of debt (which were subject to the reserve requirements decreed in March 1994), as agents expected that the new President, who took office in early August, would propose more stringent regulations to the central bank, which were likely to be accepted. Without a doubt, these early registrations reduced the effectiveness of controls for some months after the new restrictions were introduced. In order to reflect this speculative attack and to measure the effectiveness of controls during this period, two dummies were used. The first, for September-December 1994, was meant to capture the speculative attack against controls, and should thus have a positive sign, while a dummy for January 1995-January 1996 captured the delayed effect of controls, and should have a negative sign.

<sup>27</sup> The dummies included were: tequila (January 1995-March 1995), Asia (November 1997-December 1997), Russia (August 1998-November 1998) and Brazil (January 1999-May 1999). Additionally, an overall dummy for November 1997-November 1999 was included, as it is assumed that some financial flows turned away from emerging economies after the Asian crisis. Only the dummies that were statistically significant are reported.

<sup>28</sup> A dummy variable was also included to capture the extraordinary inflows of December 1996, which were partly associated with privatization processes.

Equation 7 captures the effect of the new regulations through two different channels. First, through the additional cost of foreign borrowing, which affects capital flows through the arbitrage factor and second, through the discrete effects of regulations estimated using the dummy variables. The latter effect may be interpreted as evidence of imperfect substitution between loans of different maturities due to risk factors on the supply side that affect their relative availability.

### 3. Cointegration analysis

In order to estimate equation 7, the series  $Kf$ ,  $g$  and  $A$  were tested for the order of integration. Following the approach used by Cárdenas and Barrera (1997) and Ocampo and Tovar (1997), two alternative measures for the interest arbitrage factor were used; one is constructed using the cost of reserve requirements for 18-month loans, while the other uses 36-month loans (see figure 2). Augmented Dickey-Fuller tests for the presence of unit roots are reported in table 2. As shown, it was not possible to reject the null hypothesis of the presence of unit roots for any of the four series.

Owing to the existence of unit roots in the data and in order to avoid spurious regressions, the econometric estimates were performed using a multivariate framework.<sup>29</sup> More specifically, Johansen's maximum likelihood cointegration analysis framework was employed to estimate the linear relationship described by equation 7. In particular, the relationship estimated is:

$$[8] \quad \Delta z_t = \Gamma_1 \Delta z_{t-1} + \Pi z_{t-1} + \mu + \Psi D_t + \varepsilon_t$$

where,  $\Pi = \alpha\beta'$  provided that  $\alpha$  and  $\beta$  are  $(3 \times 1)$  matrices that measure the speed of adjustment to disequilibrium and the long-run coefficients or cointegration relationship, respectively. Meanwhile,  $z_t$  is a  $(3 \times 1)$  vector formed by the variables  $Kf$ ,  $A$  and  $g$ , and  $D_t$  is a vector formed by the intervention dummies  $\delta_i$  and  $\phi_i$  that control for changes in regulations on foreign borrowing and for supply shocks associated with the

<sup>29</sup> Indeed, it is well known that a linear combination of non-stationary variables may be stationary and therefore cointegrated. As suggested in the literature, the correct way to proceed is to use a multivariate analysis and test for the presence of cointegration vectors.

TABLE 2

Colombia: Augmented dickey-fuller tests of unit roots<sup>a</sup>

VARIABLE	Lag length	T-STATISTIC									
		T-tao		3		T-mu		1		T	
		Coef- ficient	Critical value	Coef- ficient	Critical value	Coef- ficient	Critical value	Coef- ficient	Critical value	Coef- ficient	Critical value
Cash capital flows <sup>b</sup>	3	-2.24	-3.45	2.72	6.49	-2.32	-2.89	2.71	4.71	-1.89	-1.95
Diff [Cash capital flows]	2	-10.35	-3.45								
Interest rate differentials											
36-month credits (A36) <sup>b</sup>	6	-3.08	-3.45	5.32	6.49	-1.79	-2.89	1.68	4.71	-1.64	-1.95
Diff [ A36 ]	3	-4.84	-3.45								
18-month credits (A18) <sup>b</sup>	6	-2.75	-3.45	4.06	6.49	-1.64	-2.89	1.42	4.71	-1.69	-1.95
Diff [ A18 ]	3	-4.84	-3.45								
Imports of capital goods <sup>b</sup>	2	-1.40	-3.45	1.16	6.49	-0.92	-2.89	-1.38	4.71	0.04	-1.95
Diff [ Imports of capital goods]	1	-11.66	-3.45								

Source: Prepared by the authors.

<sup>a</sup> Indicates that the null hypothesis of presence of unit root cannot be rejected.

<sup>b</sup> Diff [...] denotes first difference of the variable.

Critical values from Dickey and Fuller (1981), as reproduced in Harris (1995), for a sample size of T=100 and 5% significance level.

Lag lengths for the test were chosen using the BIC information criterion.

international financial environment, respectively.<sup>30</sup> Lastly,  $\varepsilon_t \sim niid(O, \Sigma)$ .<sup>31</sup>

The results are summarized in tables 3 and 4. Table 3 reports the  $\lambda$ -trace and  $\lambda$ -max tests for the reduced rank hypothesis in the full VAR model.<sup>32</sup> The first three equations in this table make use of interest rate differentials, including the cost of reserve requirements for 36-month loans, while the remaining equations (4 to 6) use the cost of reserve requirements for 18-month loans. According to these tests, one cointegration relationship was found between private capital flows ( $Kf$ ), interest rate differentials ( $A$ ) and imports of capital goods ( $g$ ) in each of the different equations estimated. For interpretation purposes, the cointegration vector or long-run relationship is normalized by the coefficient

associated with capital flows, so that the relevant equation for capital flows becomes:

$$[9] \quad \Delta Kf_t = \Gamma_{11} \Delta Kf_{t-1} + \Gamma_{12} \Delta A_{t-1} + \Gamma_{13} \Delta g_{t-1} + \tilde{\alpha}_1 \left[ Kf_{t-1} + \left[ \frac{\beta_2}{\beta_1} \right] A_{t-1} + \left[ \frac{\beta_3}{\beta_1} \right] g_{t-1} \right] + \Psi_{11} D_t + \varepsilon_t$$

where  $\tilde{\alpha}_1 = \alpha_1 \beta_1$  measures the average speed of adjustment to long-run equilibrium (see appendix for more details).

Estimates for equation 9 are reported in table 4, columns 1, 2, 4 and 5. At first glance, the estimates suggest a strong and statistically significant relationship between cash capital flows and interest rate differentials,<sup>33</sup> however, this will be analysed in more detail later. Also, the parameters of the error correction mechanism term,  $\tilde{\alpha}_1$ , indicate that disequilibria in the

<sup>30</sup> It may appear to some readers that many dummies imply uncertainty about the specification of the model. However, this is not a universally shared view and is probably not shared by British econometricians such as David Hendry. We thank Ken West for pointing this out.

<sup>31</sup> See appendix for a more detailed derivation of the system estimated.

<sup>32</sup> The lag lengths for the unrestricted VAR models were all chosen using the BIC information criterion. Moreover, as shown in the appendix, the VECM estimates use this number of lags minus one.

<sup>33</sup> The effects are also as expected— i.e., increases in both the activity variable and the interest rate differential tend to increase capital flows. Nonetheless, because of the way long-run cointegration relations are usually specified (i.e., in vector notation), the signs show up as negative in table 4.

TABLE 3

Colombia: Rank test for cointegration vectors<sup>a</sup>

	Eigen value	L-max	Critical value	L-trace	Critical value	Ho:	
						b	c
Equation 1	0.4194	64.2	21.0 <sup>d</sup>	77.2	29.7 <sup>d</sup>	r = 0	p-r = 3
	0.0635	7.8	14.1	13.0	15.4	r = 1	p-r = 2
	0.0434	5.2	3.8	5.2	3.8	r = 2	p-r = 1
Equation 2	0.4145	63.2	21.0 <sup>d</sup>	72.8	29.7 <sup>d</sup>	r = 0	p-r = 3
	0.0636	7.8	14.1	9.6	15.4	r = 1	p-r = 2
	0.0159	1.9	3.8	1.9	3.8	r = 2	p-r = 1
Equation 3 <sup>e</sup>	0.4105	62.4	21.0 <sup>d</sup>	62.4	29.7 <sup>d</sup>	r = 0	p-r = 1
Equation 4	0.4072	61.7	21.0 <sup>d</sup>	74.3	29.7 <sup>d</sup>	r = 0	p-r = 3
	0.0754	9.3	14.1	12.6	15.4	r = 1	p-r = 2
	0.0279	3.3	3.8	3.3	3.8	r = 2	p-r = 1
Equation 5	0.3990	60.1	21.0 <sup>d</sup>	70.9	29.7 <sup>d</sup>	r = 0	p-r = 3
	0.0783	9.6	14.1	10.8	15.4	r = 1	p-r = 2
	0.0102	1.2	3.8	1.2	3.8	r = 2	p-r = 1
Equation 6 <sup>e</sup>	0.3969	59.7	21.0 <sup>d</sup>	59.7	29.7 <sup>d</sup>	r = 0	p-r = 1

Source: Prepared by the authors.

<sup>a</sup> Cointegration vectors are presented in table 4. Critical values from Osterwald-Lenum (1992) as reproduced in Harris (1995). Lags in all Var-models: 2. Number of observations: 116.

<sup>b</sup> Number of cointegration vectors.

<sup>c</sup> Number of unit roots in the system.

<sup>d</sup> Indicates rejection of null hypothesis at 5% statistical significance level.

<sup>e</sup> Equation conditioned by weak exogeneity. See table 4 for more details.

long-run relationship are rapidly and exclusively adjusted by cash capital flows. In fact, the numerical and statistical insignificance of the coefficients associated with interest rate differentials and imports of capital goods in the error correction mechanism in the first five equations in table 4 suggests that these two variables could be treated as weakly exogenous to the system. With this in mind, a likelihood ratio test on the loadings for these variables was performed.<sup>34</sup> Also, a complementary likelihood ratio test for the exclusion of interest rate differentials and imports of capital goods from the cointegration vector was performed. The results of both tests are reported in the lower part of table 4. The first test confirms the initial view that it is necessary to estimate a conditioned model for capital

inflows – i.e., that interest rate differentials and imports of capital goods should be modeled as weakly exogenous variables. However, the second test indicates that these variables cannot be excluded from the cointegration vector.<sup>35</sup>

Given these results, the new system conditioned by weak exogeneity becomes:

$$\begin{aligned}
 [10] \quad \Delta Kf_t = & \tilde{\Gamma}_0 \Delta A_t + \tilde{\Gamma}_0 \Delta g_t + \tilde{\Gamma}_1 \Delta Z_{t-1} \\
 & + \tilde{\alpha}_1 \left[ Kf_{t-1} + \left[ \begin{array}{c} \beta_2 \\ \beta_1 \end{array} \right] A_{t-1} + \left[ \begin{array}{c} \beta_3 \\ \beta_1 \end{array} \right] g_{t-1} \right] + \Psi_{11} D_t + \varepsilon_t
 \end{aligned}$$

<sup>35</sup> A joint test for both restrictions on the cointegration vector and weak exogeneity is also reported in table 4. As indicated, the null hypothesis for joint restrictions was rejected.

<sup>34</sup> See appendix for further details regarding this test.

TABLE 4

**Colombia: Determinants of private capital flows<sup>a</sup>**  
(January 1990 - December 1999)

	Johansen maximum likelihood cointegration analysis											
	Equation 1	Equation 2	Equation 3 <sup>b</sup>	Equation 4	Equation 5	Equation 6 <sup>b</sup>	Equation 1	Equation 2	Equation 3 <sup>b</sup>	Equation 4	Equation 5	Equation 6 <sup>b</sup>
	Coefficient	std.err.	Coefficient	std.err.	Coefficient	std.err.	Coefficient	std.err.	Coefficient	std.err.	Coefficient	std.err.
<i>Normalized cointegration vector</i>												
- Cash Capital Flows	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
- Interest rate differential (36 months credits)	-498.83	214.01	-597.96	206.16	-640.90	192.74	-419.38	214.01	-558.09	206.16	-569.87	213.42
- Imports of capital goods (18 months credits)	-0.71	0.12	-0.61	0.11	-0.61	0.10	-0.78	0.12	-0.68	0.11	-0.67	0.11
<i>Error correction term (alpha coefficient)</i>												
- Cash Capital Flows	-0.73	0.09	-0.74	0.09	-0.74	0.08	-0.69	0.09	-0.70	0.09	-0.71	0.08
- Interest rate differential (36 months credits)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Imports of capital goods (18 months credits)	-0.03	0.03	0.02	0.05	0.04	0.05	0.04	0.05	0.03	0.05	0.03	0.05
<i>Exogenous dummies</i>												
March 1992 - June 1992	58.66	44.04			59.26	44.79			44.80	44.79		
October 1993 - January 1994	12.52	43.64			43.54	44.25			85.84	44.25		
April 1994 - July 1994	-23.40	44.15			-8.94	44.24			-56.56	44.24		
September 1994 - December 1994	-66.61	43.76	84.55	43.34	98.36	40.81	69.85	44.63	88.97	44.46	104.40	42.06
January 1995 - January 1996	-125.91	28.17	-108.22	26.77	-101.86	25.07	-126.97	28.53	-107.77	27.26	-104.00	25.63
January 1997 - March 1997	-13.77	76.32			-33.53	81.65						
May 1997 - December 1997	-32.94	32.68			-46.49	32.95						
December 1996	833.64	84.42	842.00	84.46	879.30	79.83	837.40	85.84	844.80	86.49	879.89	10.73
Crises (November 1997 - December 1999)	-59.95	38.28	-43.41	21.64	-37.91	20.25	-70.23	24.23	-56.56	22.76	-52.89	21.49
Brazil (January 1999 - May 1999)	-67.22	26.00	-79.84	42.51	-55.30	41.71	-63.66	43.72	-77.99	43.64	-58.64	43.05
<b>Constant</b>	-104.60	16.00	-89.43	13.47	-97.41	13.37	-102.18	16.24	-87.61	14.24	-92.99	13.47
<b>Information criteria (SC)</b>	10.46		10.11		9.29		10.51		10.15		9.35	
<b>R-squared</b>	0.75		0.75		0.78		0.75		0.74		0.77	
	Chi-sq(2)						p-value					
- <b>LR test for weak exogeneity</b>	0.81 <sup>c</sup>						0.67					
Ho: <sup>a</sup> Interest differentials = $\beta_{Imports}$ of capital goods = 0							0.41 <sup>c</sup>					
- <b>LR test for restrictions on beta-vector</b>	20.09 <sup>d</sup>						17.65 <sup>d</sup>					
Ho: <sup>b</sup> Interest differentials = $\beta_{Imports}$ of capital goods = 0							19.69 <sup>e</sup>					
- <b>LR joint test for restrictions on beta-vector and for weak exogeneity</b>	23.39 <sup>e</sup>						0.00					

Source: Prepared by the authors.

<sup>a</sup> 2 lag in all VECM models. Number of observations: 118. See table 3 for rank tests on cointegration vectors.

<sup>b</sup> Equation is conditioned by weak exogeneity of interest rate differentials and imports of capital goods. See text and appendix for more details.

<sup>c</sup> Null hypothesis of weak exogeneity cannot be rejected.

<sup>d</sup> Null hypothesis of coefficients equal to zero is rejected.

<sup>e</sup> Null hypothesis of coefficients equal to zero is rejected. Test is Chi-Sq(4).

The estimates for the conditioned models using the two alternative measures for the interest rate differentials are reported as equations 3 and 6 in table 4. According to these equations, over 70% of the long-run disequilibrium is adjusted with a one-month lag, indicating that regulations on capital inflows, which alter the long-run equilibrium by inducing changes in interest rate differentials, will have a rapid effect on the dynamics of cash capital flows. These results also indicate that interest rate differentials Granger-cause capital flows. Therefore, more restrictive regulations will trigger a strong and immediate contraction of capital inflows. This indicates, in turn, that price-based controls on capital inflows rapidly reduce pressures on fundamental macroeconomic variables.

In addition to the estimates, a test for the constancy of the long-run parameters was performed. The plot of the test for the constancy of the cointegration space between September 1993 and December 1999 is reported in figure 3. According to the test, which was scaled by the 95% quantile in the  $\chi^2$ -distribution so that unity corresponds to a test with a 5% significance level, it was not possible to reject the null hypothesis of parameter constancy for the period investigated for either equation 3 or equation 6 in table 4 (see appendix). In this regard, an important related question is whether the sensitivity of cash capital flows to interest rate differentials increased following the September 1993 liberalization. In fact, Ocampo and Tovar (1997) found evidence pointing in this direction. However, for the sake of exposition, we will return to this issue in a later section. For now, it is enough to note that despite the possibility of a structural change in the long-run relationship, the test for parameter constancy indicates that that relationship was statistically stable in the post-September 1993 period.

The estimated effects of interest rate differentials on capital flows and the net effect attributable to reserve requirements are reported in table 5. Using the long-run coefficient for interest rate differentials associated with 36-month loans (equation 3), it is shown that capital inflows would have been significantly higher in the absence of controls. The effect of controls was particularly marked between April and August 1994 (capital flows were reduced on average by US\$ 73 million per month), between September 1994 and January 1996 (US\$ 102 million per month) and from January to March 1997 (US\$ 70 million per month).

As shown by the error correction mechanism estimates, the price effect of controls on the volume of financial flows will tend to disappear quite rapidly.

Therefore, it is necessary to examine other channels through which controls may affect the volume of capital inflows. The exogenous dummies in table 4 capture the discrete effects of policy changes in regulations. The results show that stock adjustments appear to have followed the February 1992 and September 1993 liberalization reforms, but the findings in this regard were not conclusive (see equations 1 and 4 in table 4).

The estimates also suggest that there was speculative behaviour prior to the shift to a tighter policy stance in August 1994, which had the undesirable effect of increasing capital inflows over the following four months (by an average of more than US\$ 98 million per month). In any case, this policy change had a delayed effect, as reflected by the reduction of capital inflows by over US\$ 101 million per month between January 1995 and January 1996. Therefore, the net discrete effect of these particular regulations was a reduction of capital inflows by over US\$ 921 million over the 17 months it was in place; i.e., between August 1994 and January 1996. Furthermore, if the discrete effects of the August 1994 change are added to those induced by the higher cost of foreign borrowing (as calculated in table 5), then the net effect of reserve requirements was far from negligible: US\$ 2.2 billion for the whole period for which this regulation was in place – a reduction equivalent to 27% of the international reserves held at the central bank in December 1995.

Other regulations that had some discrete effects were those introduced in January 1997, when the explicit Tobin tax was put in place, and in May 1997. However, these effects are statistically insignificant.

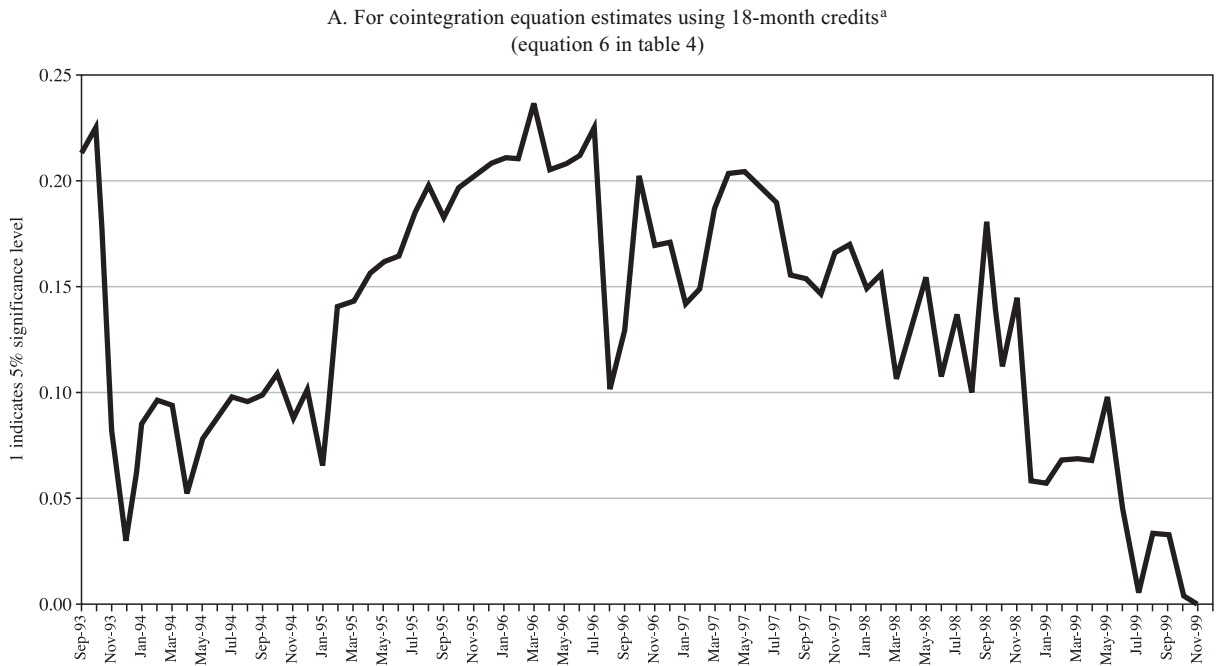
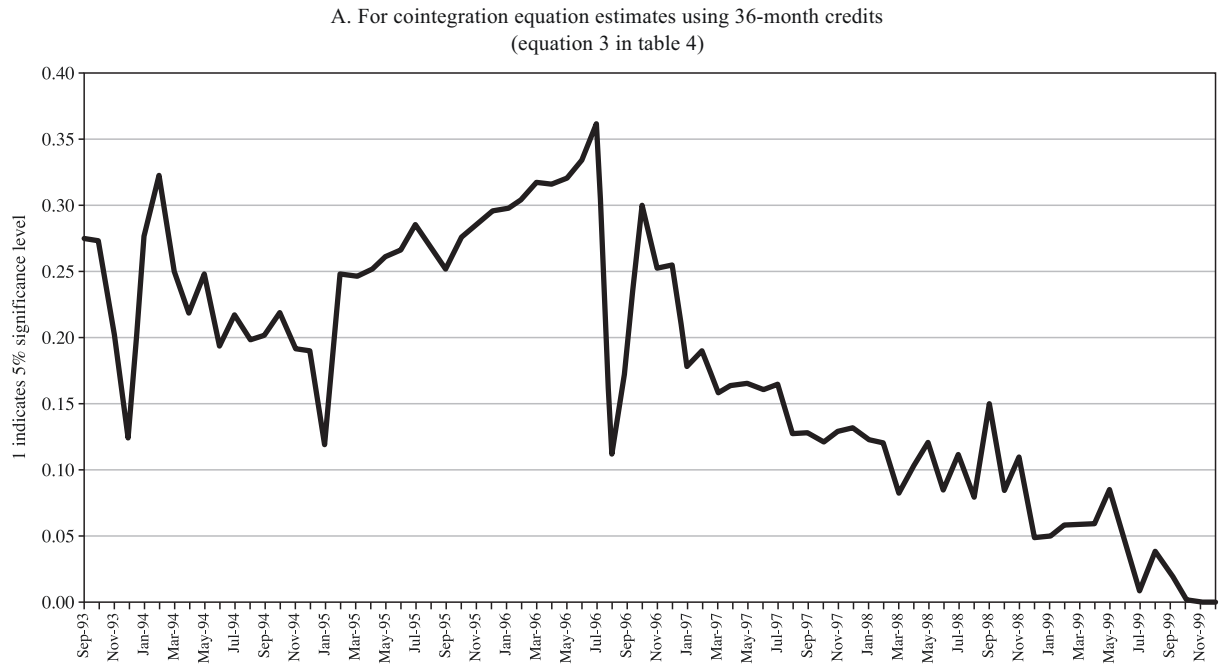
The estimates also controlled for discrete changes associated with international financial crises.<sup>36</sup> Interestingly, a dummy for the period November 1997-December 1999 as a whole, which controls for the supply effect associated with the international financial disturbances, is statistically significant and has non-negligible effects. Indeed, estimates suggest that, on average, monthly capital inflows fell by US\$ 38 million. Estimates also show an adverse and significant “neighbourhood” effect associated with the Brazilian crisis, which reduced monthly cash capital inflows by more than US\$ 55 million between January and May 1999.

<sup>36</sup> An attempt was made to use Latin bond indexes to capture the international financial environment, but no satisfactory results were obtained.



FIGURE 3

**Colombia: Test for constancy of the cointegration space**



Source: Calculations based on data from the Central Bank of Colombia (Banco de la República).

<sup>a</sup> Test statistic has been scaled by the 95% quantile in the chi-sq. distribution so that unity corresponds to a test with 5% significance level.

TABLE 5

**Colombia: Estimated effects of interest rate differentials  
on cash capital flows**  
(Monthly averages)

	Interest rate differentials (percentages)			Estimated cash capital flows using the estimated cointegration vector <sup>a</sup> (Millions of United States dollars)			Estimated cash capital flows using the Kalman filter estimates (Millions of United States dollars)		
	Excluding reserve require- ments	Including reserve require- ments	Net effect require- ments	Excluding reserve require- ments	Including reserve require- ments	Net effect require- ments	Excluding reserve require- ments	Including reserve require- ments	Net effect require- ments
January 1990 - February 1992	7.3			46.5			4.5		
March 1992 - September 1993	9.3			59.4			24.9		
October 1993 - March 1994	13.7	9.8	3.9	87.9	62.7	25.1	53.2	37.8	15.4
April 1994 - August 1994	18.6	7.3	11.3	119.2	46.7	72.5	76.0	22.4	53.6
September 1994 - January 1996	15.2	-0.8	16.0	97.5	-4.8	102.3	63.7	-5.7	69.4
February 1996 - December 1996	15.5	6.4	9.2	99.6	40.7	58.9	98.5	43.9	54.6
January 1997 - March 1997	14.4	3.5	10.9	92.2	22.6	69.6	124.5	30.2	94.3
April 1997 - May 1997	11.0	4.2	6.8	70.5	27.0	43.5	91.9	35.9	56.0
June 1997 - December 1997	-1.3	-6.0	4.7	-8.3	-38.2	29.9	-7.9	-52.2	44.3
January 1998 - September 1998	4.3	-0.4	4.7	27.8	-2.2	30.0	27.4	-3.0	30.4
November 1998 - December 1999	-1.1	-3.7	2.7	-6.9	-24.0	17.1	-8.0	-33.7	25.7

Source: Prepared by the authors.

<sup>a</sup> Estimates based on equation 3 of table 4.

Therefore, since late 1997 net capital inflows to the Colombian economy were reduced by nearly US\$ 807 million as a result of international contagion.

#### 4. Temporary and discrete effects of interest rate differentials

As an alternative exercise to estimate the effects of capital flow controls, a Kalman filter was applied to equation 7. Figure 4 graphically displays the temporary and discrete effects of interest rate differentials on capital flows for 36-month loans (panel A). The former are associated with changes in interest rate differentials due to variations in the cost of reserve requirements, while the latter are associated with adjustments in the volume of capital flows. As shown, regulations were effective in reducing capital inflows when they were tightened, particularly in August 1994, January 1997 and May 1997. In turn, capital flows increased when regulations were loosened in February 1996 and January 1998. As shown in panel B of figure 4, which compares the estimated effects of interest rate differentials

including and excluding the cost of reserve requirements, the effect of interest rate differentials on capital flows is mainly attributable to capital controls, since the difference between the two series is mainly attributable to the cost of reserve requirements.

Furthermore, the estimated effects of interest rate differentials using the Kalman filter methodology follow a dynamic parallel to the one estimated using the Johansen cointegration framework (see table 5). However, it is worth mentioning that prior to January 1997 the net effects of reserve requirements appear weaker with the Kalman filter than with the cointegration methodology and slightly stronger after that date.

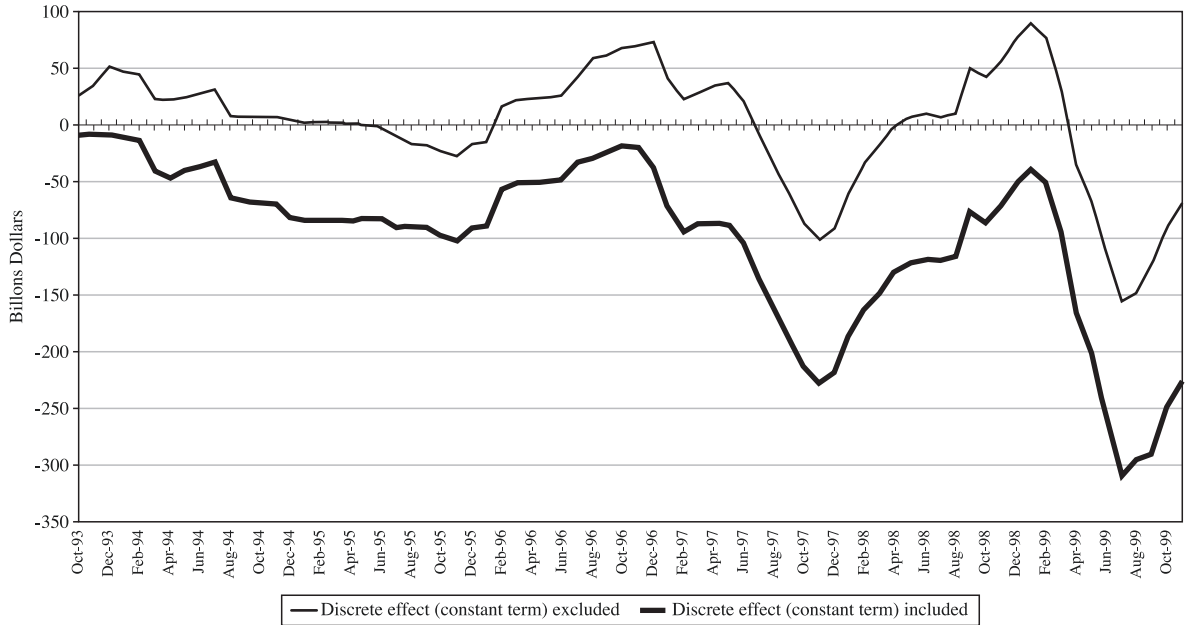
These results indicate that controls on capital flows were effective in reducing the volume of these inflows, owing both to the increased cost of shorter-term borrowing and to the discrete effects of the regulations, associated with the imperfect substitution of borrowing at different maturities. In particular, the strict controls imposed in August 1994 (with a lag related to the speculative behaviour observed before the regulations



FIGURE 4

**Colombia: Estimated effects of price-based capital controls on cash capital flows**

**A. Temporary and discrete effects of interest rate differentials  
(including costs of forced deposits)**



**B. Overall effects of interest rate differentials  
(excluding and including costs of reserve requirements)**



Source: Calculations based on data from the Central Bank of Colombia (Banco de la República).

were introduced) and the January and May 1997 restrictions had the desired effects. The results also indicate that temporary adjustments in the volume of net capital flows may have taken place following the February 1992 and September 1993 liberalization measures.

### 5. Testing for structural change

An important issue regarding price-based capital controls is that they are designed for countries that choose to be integrated in international capital markets. Therefore, whether the transition from old-style exchange controls to price-based capital account regulations effectively liberated of the capital account constitutes a central question to be addressed. Or, to put it differently, an effective liberalization should reflect an increased sensitivity of cash capital flows to interest arbitrage incentives. Table 6 presents the results of a simple OLS regression analysis<sup>37</sup> conducted to capture the change in the sensitivity of cash capital flows to interest arbitrage following the September 1993 reform of the capital account regime. The main difference between this exercise and the cointegration procedure reported above is that although both measures of interest rate differentials are interacted with two dummy variables, one of them captures the pre-liberalization period (January 1990-September 1993) and the other, the post-liberalization period (October 1993-December 1999).

Table 6 reports six different regressions. The main differences between them lie in the interest rate differentials used; i.e., 18-month or 36-month credits. Furthermore, in each case three different exercises are reported. Equations 1 and 2 report simple regressions without controlling for changes in the volume of net capital flows associated with policy shifts or with the international environment after the financial crises. The remaining equations report different specifications that do control for these factors. In addition, for each regression a Chow test for structural change in the sensitivity of capital flows to interest rate differentials is reported.

The results show a significant increase in the sensitivity of cash capital flows to interest rate arbitrage following the September 1993 reform, indicating that this reform effectively liberalized the capital account

regime. The different specifications used illustrate the robustness of this conclusion. Indeed, the Chow test for structural change indicates that the null hypothesis of equal sensitivity of cash capital flows to interest rate differentials before and after the 1993 liberalization reforms are rejected under all specifications. Furthermore, the results show that, whereas capital flows were highly sensitive to interest rate differentials after September 1993, such an interest arbitrage effect is not statistically robust for the pre-liberalization period, as reflected in the implicit t-statistics of the estimated coefficients.

### 6. Term structure of external debt

The econometric results presented above show that capital controls had a significant impact on the volume of net capital inflows. An additional issue in evaluating their effectiveness is whether they have induced a more favourable term structure in Colombia's foreign debt. This is of particular interest because, as we have seen, the literature on financial crises has pointed out that excessive reliance on short-term debt increases a country's vulnerability and exposure to such crises. Based on annual data, panel A of figure 5 presents the term structure of private foreign debt. As shown, the share of short-term debt out of total private debt fell significantly in Colombia during the 1990s. Indeed, this share, which had represented over 60% of foreign private debt at the beginning of the 1990s, had fallen to less than 20% by the end of the decade. This drastic reduction was achieved between 1994 and 1998, which coincides with the intensive use of price-based controls on capital flows. Moreover, the stability of the share of short-term debt after 1997 suggests that the May 1997 regulation, which introduced peso-denominated reserve requirements on foreign debt for all loan maturities, did not constitute a perfect substitute for the previous system of controls based on dollar-denominated reserve requirements on foreign loans under a minimum maturity. This finding is supported by the evidence presented below.

Figure 5, panel B presents additional evidence on how reserve requirements have affected the term structure of external debt, based on monthly averages of central bank registrations of foreign-currency loans extended by financial institutions.<sup>38</sup> The figure shows

<sup>37</sup> Owing to the cointegrated nature of the series involved, the spurious regression risk is eliminated.

<sup>38</sup> It is important to take into account that 0- to 18-month loans are basically associated with import and export financing, which has been exempt from reserve requirements since March 1996.

TABLE 6

**Colombia: Sensitivity of private capital flows<sup>a</sup>**  
(January 1990 - December 1999)

	OLS ESTIMATION												
	Equation 1		Equation 2		Equation 3		Equation 4		Equation 5		Equation 6		Mean independent variable
	Coef-f	std.err.	Coef-f	std.err.	Coef-f	std.err.	Coef-f	std.err.	Coef-f	std.err.	Coef-f	std.err.	
<i>Dependent variable: Cash capital flows</i>													
- Interest rate differential * dummy <sup>b</sup>													
(36-month credits)													
• Pre-liberalization of capital account (January 1990 - September 1993)	525.49	273.31			322.51	202.42			398.41	202.56			0.030
• Post-liberalization of capital account (October 1993 - July 1997)	1253.70	202.25	1081.24	205.86					775.54	165.29			0.018
(18-month credits)													
• Pre-liberalization of capital account (January 1990 - September 1993)			358.80	278.10			203.70	203.90					0.054
• Post-liberalization of capital account (October 1993 - July 1997)			1418.95	255.60			1175.35	241.88					-0.004
• Imports of capital goods	0.48	0.11	0.59	0.12	0.49	0.10	0.59	0.10	0.56	0.08	0.64	0.09	324.716
<i>Exogenous dummies</i>													
March 1992 - June 1992					55.41	46.56							
October 1993 - January 1994					-41.62	48.22							
April 1994 - July 1994					-84.82	47.39							
September 1994 - December 1994					96.67	47.73							
January 1995 - January 1996					-108.77	33.93							
January 1997 - March 1997					123.28	51.95							
May 1997 - December 1997					1.30	41.29							
December 1996					824.47	87.10							
Crises (November 1997 - December 1999)					-20.29	32.68							
Brazil (January 1999 - May 1999)					-140.34	49.72							
Constant	-106.74	43.48	-107.54	44.72	-92.73	31.83	-96.09	32.28	-106.86	31.18	-104.60	31.62	
<i>Chow test for structural change</i>													
H <sub>0</sub> : B <sub>Interest differentials pre-1993</sub> =													
B <sub>Interest differentials pos-1993</sub> = 0													
F (1, 114)	5.26	8.19	7.91	9.59					2.71	4.86			
Prob > F	0.02	0.01	0.01	0.00					0.10	0.03			
Adjusted R-squared	0.30	0.27	0.62	0.68					0.65	0.64			
Mean dependent variable	77.10	77.10	77.10	77.10	77.10	77.10	77.10	77.10	77.10	77.10	77.10	77.10	

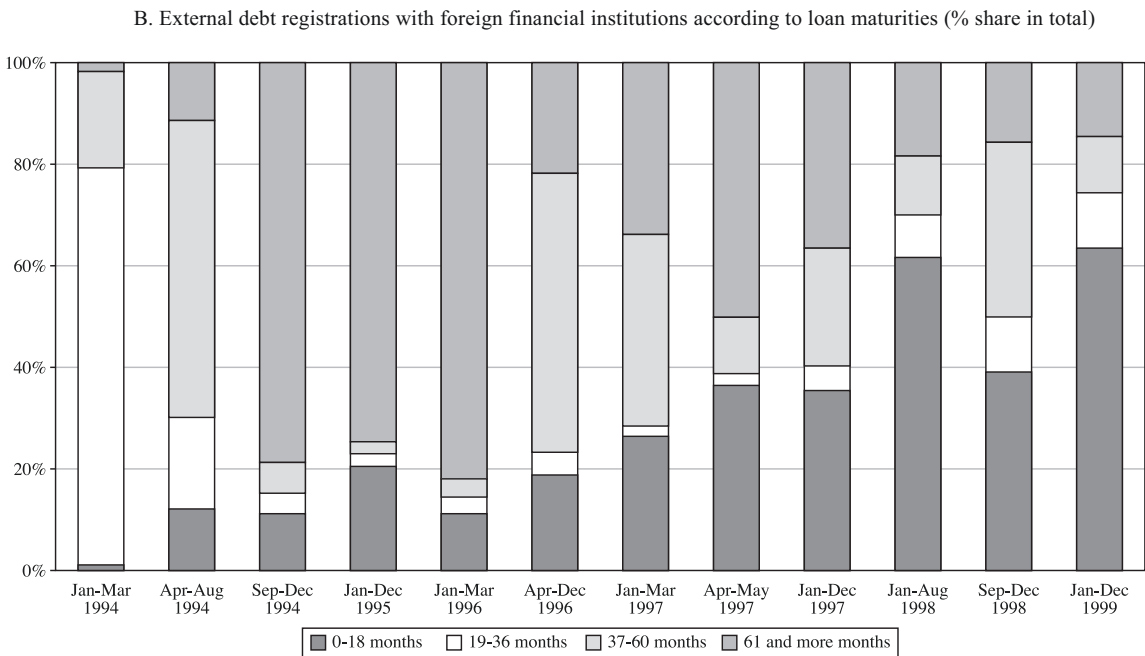
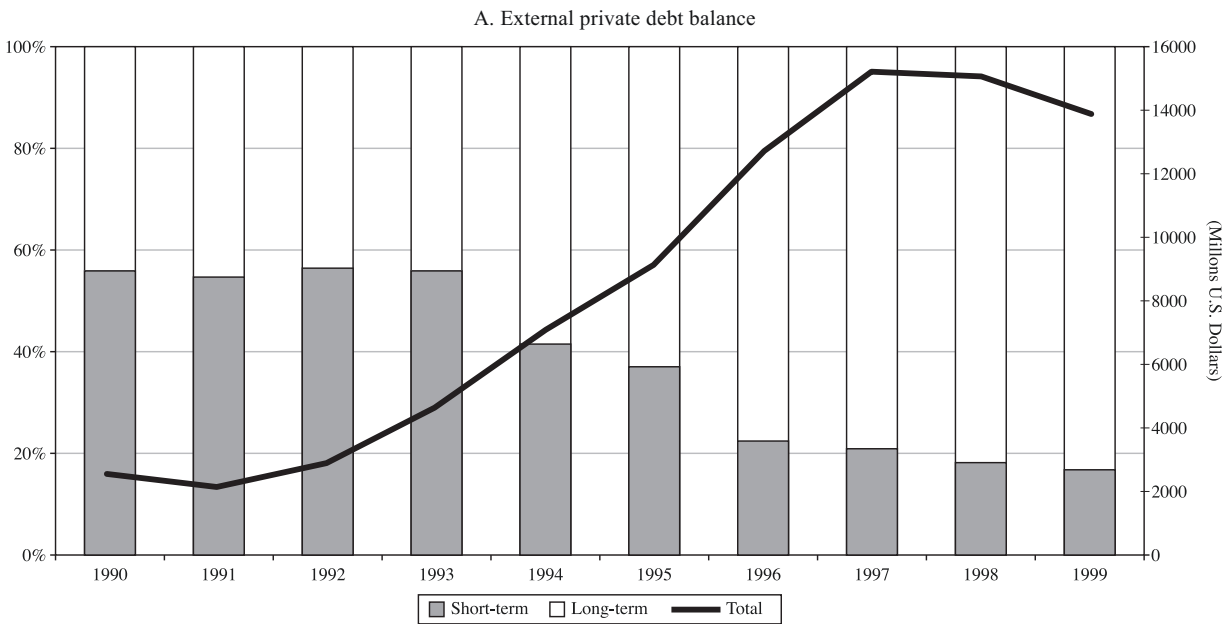
Source: Prepared by the authors.

<sup>a</sup> Number of observations: 118.

<sup>b</sup> Interest rate differential interacted with dummy for the subperiod indicated.

FIGURE 5

Colombia: Term structure of external private debt



Source: Calculations based on data from the Central Bank of Colombia (Banco de la República).

that the regulations implemented in March and August 1994 had a major impact on the term structure of foreign borrowing, as foreign debt registrations shifted towards a longer-term maturity structure. It is also evident that the liberalization policies of early

1996 shifted the term structure towards shorter maturities, while the tighter policies of January 1997 and March 1997 had the opposite effect. Lastly, the May 1997 regulations had an intermediate effect in this regard.

## V

### Conclusions

This paper has explored the effectiveness of price-based controls on capital inflows in Colombia in the 1990s. The effects of these controls are channeled through two different mechanisms. One is the interest rate differential, which reflects the higher cost of foreign borrowing. The other is associated with the discrete effects of changes in the regulatory system, which may be basically associated with the imperfect substitution between long-term and short-term borrowing.<sup>39</sup>

The econometric results support the conclusion that capital inflows are sensitive to interest rate differentials and, therefore, that price-based regulations on capital inflows effectively reduced the volume of capital inflows in Colombia. Also, the evidence presented indicates that these regulations improved the term structure of Colombia's external borrowing. The results also confirm that the September 1993 change in the capital account regime effectively liberalized the capital account by increasing the sensitivity of capital flows to interest arbitrage incentives.

The econometric evidence also indicates that reserve requirements did not have the same outcomes once the dollar-denominated requirements on loans under a certain minimum maturity were replaced, in May 1997, with a flat peso-denominated rate unrelated to the maturity of the loan. This suggests that the latter system was not a perfect substitute for previous regulations. In particular, the pre-May 1997 system had

stronger effects on the term structure of external borrowing. Also, the dollar-denominated system produced an interesting stabilizing effect on the cost of foreign borrowing in the face of nominal exchange rate fluctuations, whereas this effect was lost in the peso-denominated system.

Overall, the analysis suggests that price-based capital controls effectively play a dual policy role when a country experiences capital surges. On the one hand, they allow authorities to gain monetary and exchange rate control when under stronger pressure from capital inflows. This effect has also been confirmed in parallel research by Villar and Rincón (2003), using a different methodology. On the other hand, price-based regulations also constitute an effective "liability policy" that improves the term structure of external liabilities, thereby reducing liquidity risks.

This dual effect makes capital controls a desirable policy tool for reducing a country's vulnerability to sudden reversals of capital inflows. Their usefulness is enhanced by the fact that they are easily implemented, non-discretionary and preventive (prudential) in nature, since they penalize short-term foreign-currency liabilities more heavily.<sup>40</sup>

Lastly, it should be recalled that price-based capital controls, though effective in reducing capital inflows and improving the debt profile, are not a substitute for sound macroeconomic policies or for policies aimed at improving the prudential regulation and supervision of domestic financial systems.

<sup>39</sup> A number of studies on Chile and that of Cárdenas and Barrera (1997) on Colombia argue that controls on capital flows have been effective in altering the term structure of foreign debt but not the overall volume of capital inflows. This interpretation seems inconsistent, as it presupposes that long-term and short-term flows are perfect substitutes.

<sup>40</sup> Ocampo (2003a) compares these price-based controls to quantitative controls such as those employed in Malaysia during the Asian crisis.

## APPENDIX

Following Hansen and Juselius (1995), suppose the following  $p$ -dimensional vector autoregressive model of the type:

$$[A.1] \quad z_t = A_1 z_{t-1} + \dots + A_k z_{t-k} + \mu + \Psi D_t + \varepsilon_t \quad t = 1, \dots, T.$$

where  $z_t$  is a  $p \times 1$  vector of stochastic variables,  $z_{t-k+1}, \dots, z_0$  are fixed,  $\varepsilon_1, \dots, \varepsilon_t$  are iid  $(0, \Sigma)$  and  $D_t$  is a vector of nonstochastic variables, such as intervention dummy variables.

This unrestricted vector autoregression model (VAR) involving  $k$ -lags of  $z_t$  may be transformed into a vector error correction model (VECM):

$$[A.2] \quad \Delta z_t = \Gamma_1 \Delta z_{t-1} + \dots + \Gamma_{k-1} \Delta z_{t-k+1} + \Pi z_{t-k} + \mu + \Psi D_t + \varepsilon_t$$

$\varepsilon_t \sim \text{niid}(0, \Sigma)$

The hypothesis of cointegration in equation A.2 can be formulated as a reduced rank test of the  $\Pi$ -matrix:

$$H_0(r): \Pi = \alpha\beta'$$

where  $\alpha$  and  $\beta$  are  $p \times r$  matrices of full rank and  $r$  indicates the number of cointegration vectors. Furthermore, the hypothesis  $H_0(r)$  implies that the process  $\Delta z_t$  is stationary,  $z_t$  is nonstationary, but  $\beta' z_t$  is stationary.

In our specific case, according to equation 8,  $z_t$  is a  $3 \times 1$  vector formed by the variables  $Kf$ ,  $A$  and  $g$ , while  $D_t$  are intervention dummies  $\delta_t$  and  $\lambda_t$  that control for changes in the regulations on foreign borrowing and for supply shocks such as the tequila, Asian, Russian and Brazilian crises, respectively.

In order to understand the interpretation of the model, it is useful to expand some terms. Assuming, for simplicity's sake, that there are no deterministic components and that there is only one cointegration vector (i.e.,  $r = 1$ ), we can write:

$$\Pi z_{t-1} = \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \end{bmatrix} [\beta_1 \quad \beta_2 \quad \beta_3] \begin{bmatrix} Kf \\ A \\ g \end{bmatrix} = \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \end{bmatrix} [\beta_1 Kf + \beta_2 A + \beta_3 g]_{t-1}$$

and, therefore, rewrite the full system as:

$$[A.3] \quad \begin{bmatrix} \Delta Kf_t \\ \Delta A_t \\ \Delta g_t \end{bmatrix} = \Gamma_1 \begin{bmatrix} \Delta Kf_{t-1} \\ \Delta A_{t-1} \\ \Delta g_{t-1} \end{bmatrix} + \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \end{bmatrix} [\beta_1 \quad \beta_2 \quad \beta_3] \begin{bmatrix} Kf \\ A \\ g \end{bmatrix}_{t-1} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \end{bmatrix}$$

In general, it is useful to normalize the cointegration vector by the variable of interest, which in our case is private capital flows,  $Kf$ . This is done simply by multiplying the  $\beta$  vector by  $1/\beta_1$ . For that reason,  $\Delta Kf_t$ , the equation of interest, can be written in the error correction form described by equation A.2:

$$[A.4] \quad \Delta Kf_t = \Gamma_{11} \Delta Kf_{t-1} + \Gamma_{12} \Delta A_{t-1} + \Gamma_{13} \Delta g_{t-1} + \tilde{\alpha}_1 \left[ Kf_{t-1} + \begin{bmatrix} \beta_2 \\ \beta_1 \end{bmatrix} A_{t-1} + \begin{bmatrix} \beta_3 \\ \beta_1 \end{bmatrix} g_{t-1} \right] + \varepsilon_t$$

where  $\tilde{\alpha}_1 = \alpha_1/\beta_1$ .

The cointegration relation A.4 (equation 9 in the text) is a stationary series, which is interpreted as a long-run equilibrium relation between the three variables  $Kf$ ,  $A$  and  $g$ . If  $\beta' z_{t-1} \neq 0$ , then it is interpreted as a long-run equilibrium error. On the other hand,  $\tilde{\alpha}_1$ , which is called the loading, measures the average speed of adjustment or convergence towards long-run equilibrium.

This analytical framework makes it possible to test whether a variable is weakly exogenous. For instance, the variable representing imports of capital goods,  $g$ , is said to be weakly exogenous for  $\beta$  if  $\alpha_3 = 0$  (see equation A.3), and therefore implies that the equation  $\Delta g_t$  does not contain information about the long-run parameters  $\beta$ . In general, it is advantageous to condition the model on weakly exogenous variables as a means of improving the stochastic properties of the model. Furthermore, it is likely that the rest of the system will perform better statistically (see Hansen and Juselius, 1995; Enders, 1995; Harris, 1995).

### Tests used

The test for the constancy of  $\beta$  is a test of the hypothesis

$$[A.5] \quad H\beta_\tau: \tilde{\beta} \in \text{sp}(\beta_\tau) \quad \tau = T_0, \dots, T.$$

where  $\tilde{\beta}$  is a known matrix. In our case,  $\tilde{\beta}$  is the cointegration vector estimated in equations 3 and 6 of table 4.

The test statistic is given by:

$$[A.6] \quad -2 \ln(Q(H_{\beta\tau} | \hat{\beta}(\tau))) = \tau \sum_{i=1}^r (\ln(1 - \hat{\rho}_i(\tau)) - \ln(1 - \hat{\lambda}_i(\tau)))$$

$\tau = T_0, \dots, T.$

where  $\hat{\rho}_i(\tau)$  are the solutions of:

$$[A.7] \quad \rho \tilde{\beta} S_{kk}(\tau) \tilde{\beta} - \tilde{\beta} S_{k0}(\tau) S_{00}^{-1}(\tau) S_{0k}(\tau) \tilde{\beta} = 0 \quad \tau = T_0, \dots, T.$$

and  $\hat{\lambda}_i(\tau)$  are the  $r$  largest eigenvalues in the unrestricted eigenvalue problem:

$$[A.8] \quad |\lambda S_{kk}(\tau) - S_{k0}(\tau) S_{00}^{-1}(\tau) S_{0k}(\tau)| = 0 \quad \tau = T_0, \dots, T.$$

The test statistic (A.6) is asymptotically distributed as  $\chi^2$  with  $(d_k - r)r$  degrees of freedom (Hansen and Juselius, 1995). In our case,  $d_k = 5$  (3 variables, a constant and the row for the deterministic variables) and  $r = 1$  (the number of cointegration vectors), hence the test is distributed  $\chi^2(4)$ .

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# The unremunerated reserve *requirement and net capital* flows: Chile in the 1990s

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In the 1990s, Chile suffered the effects of a surge in external capital inflows that came to a sudden stop towards the end of the decade, despite its concentration in flows considered to be stable, implying that an appropriate composition of capital flows is not by itself adequate protection against capital flow volatility. The surge in capital flows responded to push factors associated with the supply of foreign financing that narrowed the spread between domestic and external returns. The unremunerated reserve requirement (known as *encaje*) helped to offset the push factors by widening the spread and restraining net capital inflows, particularly short-term, thus gaining additional room for monetary-policy manoeuvre. An early elimination of the *encaje* during the capital inflow surge would have boosted the inflows still further, thus aggravating macroeconomic imbalances. An intensification of the *encaje*, however, would have had limited marginal effectiveness due to circumvention and the bound imposed by short-term inflows, already close to zero. A more effective strategy would have been to apply the *encaje* on a wider basis, thus avoiding circumvention, or to complement its application with additional restraint on fiscal policy.

# I

## Introduction

Unrestricted liberalization of financial flows is an orthodox economic-policy recommendation that invokes a parallel between financial integration and its counterpart in international trade. Nonetheless, repeated experiences of financial crisis among developing countries that have embraced financial openness have raised major doubts as to the validity of this parallel. Renowned scholars such as J. Bhagwati,<sup>1</sup> and prestigious publications known for their support of liberal economic policies, such as *The Economist* (2003a and 2003b), have called for a review of the orthodoxy to acknowledge that some temporary restrictions on financial integration are justified in the light of practical experience. Far from promoting financial openness as an end in itself, in recent years the International Monetary Fund (IMF) has conducted studies projecting a more balanced attitude towards the benefits and costs of financial integration, and has recommended prudence in moving towards this.<sup>2</sup> Other authors have undertaken major studies of sudden stops of capital inflows and of how problems arising in the functioning of financial markets cause macroeconomic imbalances and costly recessions.<sup>3</sup> Without proposing outright restrictions on capital flows, their policy recommendations, nonetheless, imply public intervention in the free operation of financial markets.

A growing international financial integration is clearly beneficial only if it is compatible with the maintenance of macroeconomic equilibria, including a sustainable external-account position. Sudden stops of capital inflows, and the concomitant recessions and crises, impose major costs that may wipe out the benefits of integration altogether. To ensure the sustainability of the economy's external situation, it is

essential that the trend growth of domestic aggregate demand be kept in line with the growth of potential gross domestic product (GDP), in order to stabilize the current-account deficit in a sustainable range and thereby forestall the effects of future reversals in external financing flows.<sup>4</sup>

From 1990 through 1997, the net inflow of foreign capital to Chile was exceptionally large, surpassing what would be considered a sustainable level of external financing. At the same time, real private expenditure, which accounts for over 75% of domestic aggregate demand, doubled as a result of a 10% annual average growth that outstripped the expansion of public expenditure and both actual and potential GDP. Although this vigorous expenditure growth was to some extent driven by national income, which grew at about 8% per year thanks to favourable terms of trade, it also represented a response to massive capital inflows.<sup>5</sup>

Neither monetary nor fiscal policy could have been the origin of the explosion of private expenditure. Escalating private expenditure led the Central Bank of Chile to apply a relatively tight monetary policy in which real interest rates were kept at high levels. In fact, the real 90-day lending rate averaged 8.8% in 1990-1997, and peaked around 15% in the first quarter of 1990.<sup>6</sup> Moreover, as it was private expenditure that over-expanded, fiscal policy cannot be considered as the origin of such behaviour, especially since the growth of tax revenue kept pace with the expansion of private

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<sup>1</sup> See Bhagwati (2003).

<sup>2</sup> See Kose, Prasad and others (2003).

<sup>3</sup> See Calvo and Reinhart (2000), and Caballero (2003).

<sup>4</sup> Keeping the current-account balance within sustainable bounds should avert the need for precipitous expenditure adjustments in response to sudden stops in capital flows. The policy framework defined by the Chilean authorities in the early 1990s originally considered a current-account deficit target of between 3% and 4% of GDP, but this was later widened to a range of 3% to 5% of GDP. International experience shows that deficits larger than 5% of GDP are likely to result in abrupt adjustments (Agosin and French-Davis, 2001; Milesi Ferreti and Razin, 1996).

<sup>5</sup> A Granger causality test provides evidence that capital flows cause private domestic spending, but causality is rejected in the opposite direction.

<sup>6</sup> The buoyancy and high level of profitability of the real economy in the 1990s made it possible to reconcile rapid expansion of private expenditure with high real interest rates during the period studied.

spending. Nonetheless, fiscal spending acquired a procyclical bias, which made monetary management more difficult and led to higher interest rates than would have been necessary under a cyclically neutral fiscal policy.<sup>7</sup>

As a way of preventing interest-rate hikes from attracting even larger foreign capital inflows, thereby diluting the effect of monetary tightening and pressuring towards currency appreciation, in June 1991 the Central Bank imposed an unremunerated reserve requirement (URR), also known as the *encaje*, on certain types of foreign capital inflow. This formed part of a system of regulations aimed at restricting the volume of capital inflows and shifting their composition towards more stable flows. These regulations, in turn, formed an integral part of a macroeconomic policy framework based on a crawling-band exchange-rate system, gradually falling annual inflation targets, budget surpluses, trade openness, open markets and a central role for the private sector in economic activity—particularly investment.

The URR was selectively applied to certain categories of capital inflow and consisted in a compulsory non-interest-bearing deposit in foreign currency to be lodged with the Central Bank for one year, in an amount proportional to the size of the inflow (the rate was set at 30% for most of the period of application). This deposit created an additional cost to external financing, the URR financial cost (CFE), thereby discouraging external financing entering through channels covered by the URR mechanism. The policy was designed essentially to restrain short-term borrowing. Between 1990 and 1996, it was strengthened in various ways, such that the financial cost associated with the URR peaked in the third quarter of 1996 at 350 basis points. To prevent the URR from losing effectiveness over time, steps were taken to hinder its circumvention through exempted channels of external financing, with the last of such measures being introduced in the last quarter of 1996.<sup>8</sup> When capital-inflow pressures eased, the URR rate was reduced to zero in two stages in 1998, and the mechanism was

subsequently eliminated, along with the remaining foreign capital controls, in 2001.

The unremunerated reserve requirement represented a restriction to international financial integration and, like any other measure of this type, it had both benefits and costs. The controversy surrounding the URR has generated a wide-ranging literature, including empirical works that have attempted to measure its effects. The URR defence has been based on its macroeconomic-policy effects, including giving greater room for manoeuvre to monetary policy, and averting the amplification of the business cycle that could result from massive but transitory external capital inflows. Underlying this idea is the belief that the probability of sudden stops in capital flows and the damage they cause are likely to be lower, since the intensity with which foreign financing is used is lower.<sup>9</sup> Against this, the URR's detractors claim that it was ineffective in achieving its objectives, particularly in regards to limiting the size of total capital flows, and that it generated microeconomic costs by making it harder for some local agents to obtain foreign financing and thereby raising its cost.

The core of this paper is to study the macroeconomic effectiveness of the URR as applied in Chile during the 1990s. It does not analyse the advisability or otherwise of its current or future use, either in Chile or elsewhere. Clearly, the instrument's effectiveness is one of the key factors to be considered when evaluating its future application, but it is not the only one. Other relevant considerations include the conditions of the supply of external financing, the capacity of the economy and local financial system to cope with the volatility of capital flows, the legal and regulatory infrastructure within which the URR policy would be applied, and the limitations imposed by international treaties and other legal instruments. In short, application of the *encaje* today is a different issue, with wide-ranging complications pertaining to each particular case; this subject is not addressed in this paper.

Econometrics using macroeconomic data is far from a purely objective method of analysis (even though many of its practitioners act as if it were so), and prior

<sup>7</sup> Although the fiscal balance was in surplus through 1990-1997, the elasticity of public expenditure with respect to the output cycle was significantly positive, and similar in value to the response of public revenues to the output cycle. Both the surplus and the procyclical behaviour of expenditure went into reverse as from 1998, when the economy entered a downswing; but public expenditure continued to expand, partly compensating the slowdown in activity.

<sup>8</sup> An analysis of the coverage of the *encaje* and the way the regulations evolved is provided in Le Fort and Sanhueza (1997).

<sup>9</sup> The policy strategy followed in Chile, including the regulation of capital flows, is described in Massad (1998) and in Zahler (1996). Studies by the International Monetary Fund (IMF) have viewed the *encaje* as a positive factor for the stability of the financial system, as it discourages excessive dollarization of liabilities and financial intermediation. See Gulde-Wolf, Hoelsher and others (2003).

beliefs play a major role in model specification.<sup>10</sup> The authors of this paper were directly involved in designing the application of the URR and related measures in Chile; and the null hypothesis of our study is that it was an effective mechanism, despite the existence of channels that were not covered and were used as ways to circumvent it. A good indicator of the macroeconomic effects of the policy is reflected in the annual revenue obtained by the central bank from the URR (between 0.2% and 0.3% of GDP), and in the systematic spread in favour of assets denominated in pesos compared to those denominated in foreign currency that was registered while the *encaje* was in force.

Clearly, the URR was not entirely effective for otherwise the excessive growth of private expenditure would not have occurred, nor the widening of the current-account deficit that Chile suffered by 1997. But less-than-full effectiveness does not mean it was ineffective or did not make a significant contribution. In an attempt to evaluate the URR's effectiveness, we pose the following two questions to be answered empirically: (i) What would have happened to capital inflows and private spending if the URR had been eliminated earlier at the height of the surge in capital

inflows?, and (ii) Could a more intensive application of the URR have avoided the inflow surge and associated macroeconomic imbalances, or should it have been complemented with other policies?

The article is organized as follows. Section II studies the characteristics of the surge in capital inflows, assesses its origins, and examines the role of the URR in absorbing foreign financing shocks, in particular, whether the reserve requirement helped to drive a wedge between domestic and external interest rates, thereby giving additional room for monetary-policy manoeuvre. Section III estimates a simple econometric model that aims to analyse the effects of the *encaje* on net capital flows and domestic demand. In particular, it studies whether the mechanism managed to reduce capital flows and thus helped moderate the expansion of private spending. Section IV simulates first, the effect of eliminating the URR in the period when the surge of capital flows took place, and second, the different adjustment scenarios for dealing with the surge in inflows, including a more intensive use of the URR supported by countercyclical fiscal policy. Section V summarizes the main results and conclusions of the study.<sup>11</sup>

## II

### Characteristics of capital flows and external shocks

The scale of the net capital inflows that took place in Chile between 1990 and 1997 is indicative of a long-lasting foreign-financing shock, the so-called capital-inflow surge, which came to a sudden stop in 1998 (see table 1). Total net capital flows into Chile averaged more than 7% of GDP in 1990-1997, and only 0.5% of GDP in 1999-2000. While short-term flows were highly volatile and lacking in any clear trend, the flow of medium and long-term capital trended upward on a sustained basis, growing by an average of around 23% in 1990-1997; but beginning in 1998 the capital inflow slackened in all categories (short-, medium- and long-term). The sudden stop was verified as total net capital flows

declined by over five percentage points of GDP in 1998 (to 4.5%) and again in 1999 (to -1.2%).<sup>12</sup>

It is broadly accepted that an economy's vulnerability to an interruption of external financing is greater, the more such financing is concentrated in short-term flows, the most volatile and least persistent type of capital flows. Nonetheless, it has also been

<sup>10</sup> See Leamer (1983).

<sup>11</sup> Appendix A provides a glossary of the variables used in this paper; and appendix B contains graphs tracking the behaviour of the main variables.

<sup>12</sup> Short-term capital flows are the most volatile and the least persistent category of capital flow, as measured by the autocorrelation coefficient. See Le Fort and Lehmann (2000); however the sudden stop affected also medium- and long-term flows, including net foreign direct investment.

TABLE 1

**Chile: Foreign capital flows, 1990-1999**  
(Percentage of GDP)

	Gross medium- and long-term inflows			Net short-term flows	Medium- and long-term outflows	Total net flows
	Direct investment	Portfolio investment	Loans			
1990	2.2	1.2	7.4	4.0	5.2	9.6
1991	2.7	0.8	4.1	1.0	5.8	1.8
1992	2.5	1.1	3.9	4.5	4.7	6.7
1993	2.9	2.7	4.4	2.9	5.9	7.1
1994	5.4	3.3	5.6	2.8	6.6	10.5
1995	5.3	1.9	5.2	0.4	9.4	3.5
1996	7.2	2.7	7.8	0.4	10.3	7.8
1997	7.3	4.8	8.2	-2.1	8.4	9.8
1998	7.3	1.8	8.3	-1.5	11.5	4.5
1999	14.8	4.7	6.2	-8.0	18.7	-1.2
Average 1990-1997	5.6	2.2	5.8	1.7	6.9	7.3

Source: Prepared by the authors using data from the Central Bank of Chile.

shown that concentrating external financing in medium- and long-term flows does not necessarily eliminate the risk of a sudden stop. The capital inflow surge that took place in Chile between 1990 and 1997 was concentrated in medium- and long-term flows, with short-term inflows reduced to a minimum; but even so, total net capital flows came to a halt as from 1998. Even when using exclusively medium- and long-term external financing a sudden stop can take place; investors holding medium- and long-term liability positions in foreign currency can access the foreign-exchange markets, spot or forward,<sup>13</sup> to hedge their exchange-rate risk. This hedging implies the acquisition of foreign-currency denominated assets, thus generating short-term capital outflows that in fact originated from medium- and long-term external liabilities.

### 1. Surge of capital inflows: External push or domestic pull?

The capital inflows surge may be an endogenous response to domestic conditions that result in a high interest rate, which, in turn, “pulls” a heavy inflow of

external capital by demand or arbitrage conditions.<sup>14</sup> Under this option, the widening of the spread of expected returns between domestic and foreign assets that result from changes in domestic macroeconomic conditions (e.g. structural reforms that increase the rate of return on real investment and thus raise the domestic interest rate, or expansionary fiscal policy) attracts or “pulls” capital into the country. The endogenous surge involves a positive correlation between capital inflows and the domestic interest rate, or between capital inflows and the spread of returns between domestic and external assets (*Spread*).

$$Spread = rc90 - (libo90 - E[\pi^* + ss]) - E[T\hat{C}R]$$

The *spread* of expected asset returns<sup>15</sup> is measured as the differential between the domestic and external real interest rates, corrected for expectations of devaluation and Chile’s sovereign risk ratio (calculated on the basis of the Chilean government bond issued in April 1999);<sup>16</sup> *rc90* is the domestic real interest rate on

<sup>13</sup> A unified “spot” market for foreign exchange free of restrictions exists in Chile since early 1996, when the gradual elimination of exchange restrictions was completed; investors are able to use this market to acquire and remit foreign exchange abroad. Moreover, a quite deep “forward” foreign-exchange market, in operation since the early 1990s, has been intensively used for buying or selling foreign exchange against Chilean pesos with delivery or compensation at a future date.

<sup>14</sup> See Kruger (1998) and Le Fort (1998).

<sup>15</sup> The definition of the *Spread* is presented in the equation. Appendix A presents additional details on the definitions and the sources of the variables used in the paper.

<sup>16</sup> The sovereign spread or country risk on Chilean debt from 1992 to 1998 is estimated by splicing series representing the spread on Chilean corporate bonds, calculated on the basis of 10-year bonds issued by the National Electricity Corporation (Endesa/Enersis). For the period 1985-1992, this is spliced with the risk index for Chile calculated by Euromoney.

TABLE 2

**Chile: Correlations of capital inflows and asset returns**  
(1990.1 to 2000.4) <sup>a/</sup>

	Expected spread ( <i>spread</i> )	Observed spread ( <i>spread_2</i> )	Dom. interest rate ( <i>rc90</i> )
Total net flows (FKN)	-8% (4.22)	11% (5.57)	13% (5.98)
Net short-term flows (FKNCP)	28% (0.46)	19% (0.48)	7% (0.02)
Gross medium- and long-term flows	-18% (5.10)	-31% (6.28)	-9% (7.95)
Net medium- and long-term flows (FKM&LP)	-38% (3.76)	-8% (4.93)	5% (6.11)

Source: Prepared by the authors using data from the Central Bank of Chile.

<sup>a/</sup> Figures in parentheses correspond to t-statistics.

90-day loans<sup>17</sup>; *libo90* is the Libor rate on three-month loans in dollars, *ss* is Chile's sovereign spread,  $E[\pi]^*$  is the expected external inflation rate represented by the variation in the wholesale price index in the United States, and  $E[T\hat{C}R]$  represents the expected real depreciation of the Chilean peso, and is defined as the difference between the equilibrium real exchange rate (Soto and Valdés, 1998) and the observed real exchange rate. Alternatively,  $E[T\hat{C}R]_2$  is the expected real depreciation assuming perfect foresight, i.e. is equal to the observed future real depreciation. This second measure of the anticipated real depreciation is used in calculating the spread of actual returns (*spread\_2*).

Alternatively, the capital inflow surge may respond to the push of external factors not related to arbitrage but reflecting changes in international investors' perceptions and inclination to accept risks that cause them to modify the composition of their portfolios. These changes in portfolio composition modify the general conditions of supply of external financing to the country. Exogenous surges that result from the push of external factors are identified by negative correlation of capital inflows with domestic interest rates or with the spread of asset returns. Therefore, larger capital inflows mean a greater supply of financing from abroad, which moderates domestic interest rates and narrows the spread.

The surge of medium- and long-term capital inflows in Chile mostly had an exogenous nature (table 2). The correlations between gross medium- and long-term capital flows on one hand, and the expected spread of returns, actual spread of returns, and the domestic interest rate, on the other, are all negative:

-31% with respect to the actual spread, -18% in relation to the expected spread and -9% with the domestic interest rate. These negative correlations are statistically different from zero in all cases. When using the medium- and long-term net capital flows as opposed to the gross flows, the correlations with the spread of both expected and actual returns are also negative and statistically significant, being more marked in the first case. However, the correlation of the net flows with the real domestic interest rate is positive. The surge in medium- and long-term capital inflows thus seems to have been exogenously driven by external push factors, and has been associated with reductions in domestic interest rates and a narrowing of the expected and effective spread between domestic and external returns.<sup>18</sup>

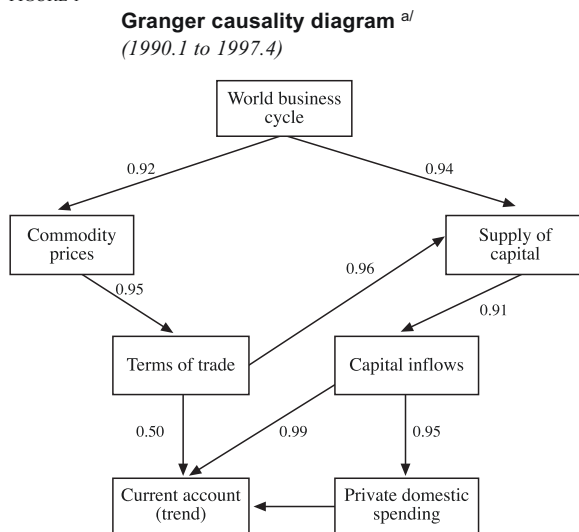
Contrary to medium- and long-term capital flows, short-term flows are positively associated with the returns spread, and as such represent endogenous responses to arbitrage. This type of flow is positively correlated with the domestic interest rate (7%), and with the spread of expected and effective returns (28% and

<sup>17</sup> Loans denominated in UF's, a widely used unit of account that has a daily adjusted value in Chilean pesos indexed to the CPI.

<sup>18</sup> These results, obtained on the basis of simple correlations, are also reflected in the multiple regressions reported in the following section for total net capital flows and net short-term flows. The spread of expected returns appears as a statistically significant attractor for short-term flows only.



FIGURE 1



Source: Authors' calculations using variables presented in appendix A.  
<sup>a/</sup> The arrows indicate the directions of significant Granger causality. The significance level is also presented.

32% respectively); but in neither case is the positive correlation statistically significant.

A possible link between external shocks on foreign financing and domestic aggregate demand should not come as a surprise. The most widely recognized transmission mechanism for external shocks to Chile arises from the effect of the world business cycle on commodity prices and thus Chile's terms of trade. But there is also a second channel for the transmission of external shocks, the supply of foreign financing. The results of the causality analysis are presented in figure 1.<sup>19</sup> The supply of foreign financing (OFCA) is (according to Granger) caused by the world business cycle and the terms of trade.<sup>20</sup> The supply of foreign financing, in turn, causes capital flows to Chile, and this affects private domestic spending.<sup>21</sup> Lastly, the current account

<sup>19</sup> Appendix C displays causalities and correlations.

<sup>20</sup> The variable that measures the supply of external financing (OFCA), is defined on the basis of sovereign debt spreads and net capital flows to the main Latin American countries, excluding Chile. Net flows to Argentina, Brazil and Mexico are added weighted by the ratio between their own sovereign spread and that of Chile. In this way, the indicator of the supply of foreign financing to Chile rises if capital flows to the region increase, or if Chile's sovereign spread falls relative to those of other countries in the region.

<sup>21</sup> Econometric estimations recognise a favourable structural break in the supply of foreign financing as from 1995, likely related to advances in financial development and openness in Chile, and the

at trend prices<sup>22</sup> is caused by private spending, capital inflows, and, to a lesser extent, the terms of trade.

## 2. Effects of the URR on the spread of returns

The unremunerated reserve requirement imposed on capital inflows sought to raise the cost of using external financing, in order to partially discourage it and gain additional room for monetary-policy manoeuvre. This additional room would be reflected in the arbitrage conditions and, hence, the spread of returns or its key domestic components, the domestic real interest rate or the expected real depreciation. The financial cost of the URR (CFE) arises from having to maintain a non-interest bearing foreign-currency deposit, and its value is determined by the reserve requirement rate, the maturity of the deposit, the relevant external interest rate, taxes on intermediation, and the currency in which the URR is constituted.<sup>23</sup> The mechanism acts as a wedge that raises the cost of obtaining external financing —analogous from a financial standpoint to a rise in the external interest rate— by an amount equal to the value of the CFE. Given the associated higher cost of external financing, this wedge depreciates the local currency, thus reducing expectations of future depreciation, or else makes it possible to raise the domestic interest rate. Either way, the spread of expected returns widens.

An initial empirical analysis of the effects of the URR is made by examining its potential impact on the spread of effective returns and on two key macroeconomic variables that are closely linked to its component elements: the real domestic interest rate and the real exchange rate. The first column of table 3 shows the results of a simple econometric exercise consisting of regressing by ordinary least squares (OLS) the actual spread of asset returns, *spread\_2*, against a variable representing the supply of external capital (LOFCA, the logarithm of OFCA) and the financial cost of the URR (CFE).<sup>24</sup> The estimation shows that the CFE resulted in a widening of *spread\_2*, while the supply of foreign

differentiation of Chile from other emerging economies following the Mexican crisis. This break was reversed from 1998 onwards.

<sup>22</sup> See Guajardo and Le Fort (1999).

<sup>23</sup> The series for the financial cost of the *encaje* was derived in Le Fort and Sanhueza (1997). For further details see appendix A.

<sup>24</sup> Appendix D presents the unit root test for the variables considered. Of the variables included in this relation, the spread and LOFCA appear not to be integrated of order one. The relation cointegrates according to the Engle Granger test, Appendix E.

TABLE 3

**Chile: Effects of the financial cost of the *encaje* (CFE) on financial  
arbitrage variables<sup>a/ b/</sup>**  
(1990.1-2000.4)

Variable explained Method	=> =>	<i>Spread</i> <sub>2</sub> OLS <sup>c/</sup>	<i>Rc90</i> 2SLS <sup>d/</sup>	LTCR 2SLS <sup>d/</sup>
<i>Explanatory variables:</i>				
Constant		0.0799 (0.224)	0.1272 (0.000)	4.6409 (0.000)
CFE +REXT-rc90		– (–)	– (–)	2.2624 (0.006)
LDDA-LPIB		– (–)	– (–)	-2.2657 (0.000)
CFE		2.1826 (0.157)	0.5633 (0.001)	– (–)
DUM98		– (–)	0.0093 (0.011)	– (–)
EdTCR+REXT		– (–)	0.0362 (0.420)	– (–)
LOFCA		-0.0163 (0.298)	-0.0121 (0,000)	-0.0360 (0.019)
Adjusted R <sup>2</sup>		0.0125	0.821	0.3585
Durbin-Watson statistic		2.133	1.195	1.125
F-statistic		1.272	45.840	11.407

Source: Prepared by the authors.

<sup>a/</sup> Figures in parentheses are P-values.

<sup>b/</sup> Instruments: CFE LFIN(-1), LOFCA FKN(-1), GAPHPY(-1), LFBKF(-1), LPIB(-1), LTI TIEMPO DUM98 RC90(-1), LIBO90 SPREAD(-1), LRSTD(-1), LGOB FKNAY(-1), LTRIB(-1), LTCR(-1), REXT EDTR(-1).

<sup>c/</sup> Ordinary least squares.

<sup>d/</sup> Two-stage least squares.

financing (LOFCA) tended to reduce it. The results are barely significant.<sup>25</sup>

The specification shown in the second column of table 3 is based on the same arbitrage relation, but with the real domestic interest rate as dependent variable, and the other components of the *Spread* (external interest rate and expectations of real depreciation) included among the explanatory variables.<sup>26</sup> The instrumental variables method is used considering that the expected depreciation is an endogenous variable. The results show that the CFE generates statistically significant effects on the real interest rate, although the

parameter associated with the real external interest rate (REXT) and expected real depreciation (EdTCR) appear as non-significant, and the results are affected by serial autocorrelation. The CFE generates a positive effect on the domestic interest rate which is statistically different from zero at the 99% confidence level, acting in the opposite direction to the supply of foreign financing (measured by LOFCA or by DUM98), which significantly reduces the real domestic interest rate. The variable DUM98 represents the reversal of capital flows, taking the value 0 during periods of strong capital inflow and 1 as from 1998, when the sudden stop of flows occurred. The estimation shown in the third column of table 3 seeks to measure potential effects of the financial cost of the reserve requirement on the real exchange rate. The estimation controls for the supply of external capital (which, as expected, lowers the real exchange rate) and for the difference between aggregate demand and outputs representing the excess demand for goods, which also tends to depress the real exchange rate. It is shown that the financial cost of the *encaje* acts by

<sup>25</sup> The coefficient measuring the effect of the CFE on *Spread*<sub>2</sub> is significant only at the 84.5% confidence level, and is not statistically different from one. This restriction is not rejected by the data at the 10% significance level; value of F-statistic (0.8), value of the likelihood ratio (0.8).

<sup>26</sup> All the variables included in this relation are integrated of order one (except LOFCA), and the relation between them cointegrates according to the Engle Granger test (Appendices D and E).



compensating one-for-one the negative effect exerted on the real exchange rate by the difference between the domestic and external interest rates.<sup>27</sup>

The results of estimations for the spread and the real interest rate lend some empirical support for the idea that the URR was effective in modifying international interest-rate arbitrage conditions, thereby giving monetary policy some additional room for manoeuvre. An initial measurement of this is obtained as the effect of the CFE at its peak (350 basis points) on *Spread\_2*. As noted earlier, the estimated parameter is not statistically different from one, so the additional margin would be up to 350 basis points, although the limits of a confidence interval for this are very wide, given the low significance level of the corresponding

parameter. If room for monetary-policy manoeuvre is calculated on the basis of the equation presented for the real interest rate, the financial cost of the *encaje* at its peak would have allowed a real domestic interest rate that was between 90 and 300 basis points higher, according to a 95% confidence interval. Based on the equation for the real exchange rate, the maximum level of the CFE would have allowed monetary policy flexibility equivalent to a real exchange rate that was 9% more depreciated. To the extent that the *encaje* increased the room for monetary-policy manoeuvre, it had to limit net capital inflows. The following section presents the results of a simple econometric model to empirically analyse the effect of the *encaje* on capital flows.

### III

## Empirical model for capital flows

Various studies have considered the effects of the *encaje* on capital inflows to Chile. Forbes (2003) presents information on the microeconomic costs for small firms, arising from the partial coverage of the deposit requirement and the fact that exempt capital flows made it possible to obtain financing under conditions that essentially favoured larger firms. Several other studies have measured the macroeconomic effectiveness of Chile's URR, but none of them considered the supply of foreign financing as a relevant factor when analysing the intensification of capital inflows during the 1990s. The paper by Valdés and Soto (1996), for example, concentrates exclusively on short-term flows and shows that the effect of the reserve requirement on such flows has been negative but small, while the effect on the real exchange rate has been nil. Chumacero, Labán and Larraín (2000) also find a negative effect for the *encaje* on short-term flows and a non-significant one on long-term flows. Soto (1997) reports an effect on capital flows which is statistically significant but lacking in economic relevance. Laurens and Cardoso (1998), meanwhile, find

no evidence for any effect on capital flows. Nadal-De Simone and Sorsa (1999) claim that there is no evidence yet regarding the effect of the *encaje* on the Chilean economy. De Gregorio, Edwards and Valdés (2000) and Gallego, Hernández and Schmidt-Hebbel (2002) highlight the fact that the policy has enabled the Chilean economy to maintain a higher interest-rate differential with respect to rates abroad, but the effect of this on the exchange rate is inconclusive. Nonetheless, it is acknowledged that the *encaje* induces a change in the composition of financing, by increasing the proportion of medium- and long-term foreign financing.

The results of this paper show that the *encaje* policy played a major role in restraining capital inflows into Chile, particularly short-term flows, during the 1990s. Unlike earlier papers, the empirical study we present here aims to describe the effect of the policy on the macroeconomic framework. The model recognizes the link between private demand and capital flows, and seeks to understand the role played by the URR in the behaviour of these variables in Chile during the 1990s. Unlike the empirical studies commented on above, the model presented below includes the supply of foreign financing as a relevant factor in explaining external capital flows. In addition to pull factors associated with the demand for external financing that arise from the current-account deficit and are driven by domestic demand, the study takes account of elements that represent the availability

<sup>27</sup> The restriction that the parameter associated with the financial cost of the *encaje* is equal to that of the difference between the external and domestic real interest rates is not rejected by the data (value of F-statistic: 0.03). This third relation between the arbitrage variables, the cost of the *encaje* and variables representing the supply of capital does not cointegrate (appendix E).

of external financing, recognizing the structural change that occurred as from 1998 when capital flows towards emerging economies in general retreated sharply.

In an earlier paper (Le Fort and Lehmann, 2000) the authors attempted to measure the effect of the *encaje* on gross capital flows, and of these on private expenditure, in a type of feedback model where the reserve requirement affects gross capital inflows but not outflows, and net flows affect aggregate demand. That specification was developed using balance-of-payments and national-accounts series with 1986 as the base year, and the results could not be satisfactorily reapplied using the new series based on 1996. Using the new macroeconomic data series, this paper estimates behavioural functions for net capital flows and the two main components of private-sector aggregate demand. Causality runs from the *encaje* to net flows and then to aggregate demand; but the model also recognizes the effect of aggregate demand on the demand for financing and capital flows. The URR is measured by its financial cost CFE and is considered an exogenous policy variable, as it seems impossible to adequately represent the way it was managed during the decade in a single behavioural function. Moreover, rather than actively regulating the intensity of the reserve requirement according to policy goals, the URR policy actions sought from time to time to compensate for the erosion of its effectiveness by the redirection of capital inflows to channels that were exempt.

## 1. Cointegration of capital flows

Table 4 shows cointegration relations for total net capital flows, short-term flows, and medium- and long-term flows, respectively; each of them are estimated using instrumental variables, since some of the explanatory variables are endogenous. In general, the variables are represented in natural logarithm form, which is indicated by an L preceding the name of the variable. Exceptions to the use of logarithms were net capital flows, which change sign in the sample, and variables expressed in rate form, such as interest rates, spread and the CFE. The results of these estimations satisfy the standard conditions of a cointegration relation, including the requirement that their residuals be stationary; in each case the unit root hypothesis is rejected at the 1% significance level.<sup>28</sup>

The evolution of total net capital flows (FKN) can be reasonably explained by (i) the supply of foreign

<sup>28</sup> Appendix E presents Engle and Granger unit roots tests for the residuals of the cointegration relations.

TABLE 4

### Chile: Cointegration estimations for total net capital flows, short-term flows and medium- and long-term flows<sup>a/ b/</sup>

Method: Two-stage least squares (1991.1-2000.4)

Explained Variable	FKN	FKNCP	FKNMYLP
<i>Explanatory variables</i>			
Constant	16514.34 (0.045)	18966.37 (0.063)	-15829.91 (0.097)
LTI	-3544.45 (0.054)	-4205.68 (0.061)	-2632.16 (0.211)
LDDA-LPIB	14644.23 (0.001)	15294.07 (0.005)	– (–)
Spread – CFE	6463.43 (0.059)	17917.80 (0.000)	– (–)
DUM98	-1508.24 (0.002)	-1031.57 (0.003)	-638.87 (0.059)
Time	30.39 (0.133)	– (–)	– (–)
LOFCA	– (–)	– (–)	105.5261 (0.303)
LFBKF	– (–)	– (–)	1977.47 (0.003)
Adjusted R <sup>2</sup>	0.356	0.143	0.153
Durbin-Watson statistic	2.010	1.303	1.747
F-statistic	7.241	5.029	3.067

Source: Estimations by the authors.

<sup>a/</sup> Figures in parentheses correspond to P-values.

<sup>b/</sup> Instruments: CFE LFIN(-1), LOFCA FKN(-1), GAPHPY(-1), LFBKF(-1), LPIB(-1), LTI, TIEMPO, DUM98, RC90(-1), LIBO90, SPREAD(-1), LRSTD(-1), LGOB, FKNAY(-1), LTRIB(-1), LTCR(-1), REXT, EDTCR(-1).

financing, represented by the dummy variable that measures the reversal of capital flows in Chile as from 1998 (DUM98);<sup>29</sup> (ii) the demand for external financing in the economy, represented by the ratio between domestic aggregate demand and GDP (LDDA-LPIB) and the terms of trade (LTI); and (iii) by arbitrage conditions, represented by the expected spread of returns between domestic and external assets (*spread*) and the financial cost of the URR (CFE). A trend variable is also included to capture the effects of economic growth, greater international financial

<sup>29</sup> DUM98 is a dummy variable that takes the value 0 at the start of the sample, and 1 as from the first quarter of 1998, when capital flows into Chile faltered abruptly. This variable gave better results than the capital-supply index LOFCA in the equation for total net flows and short-term flows. Using LOFCA to represent the supply of foreign financing produces qualitatively very similar results, but with a weaker fit, as shown in appendix G. LOFCA is a better explanatory variable for medium- and long-term capital flows.

integration and worldwide inflation on total net capital flows that are measured in current United States dollars. The effects of the demand for external financing and foreign financing-supply conditions on capital inflows are statistically different from zero at the 1% significance level, while the terms of trade and the spread minus the CFE, are significant at the 6% level.

The individual influence of each variable on capital flows is affected by the collinearity that exists between them and by the small size of the sample. In fact, the *encaje* was an attempt to compensate for differences between domestic and external interest rates, and it may have had some moderating effect on the real appreciation of the peso, a reason why the CFE can be seen as compensating for the value of the spread. In view of the above, the effects of the spread and the CFE on capital inflows were constrained to be of equal value but opposite sign. To test the effectiveness of the *encaje* on capital flows, the cointegration equation was re-estimated for total capital flows, with *spread* and CFE as independent variables; then the exclusion of the CFE was rejected at the 5% significance level.<sup>30</sup>

We should emphasize, however, that the negative effect of the financial cost of the *encaje* on FKN depends critically on including a variable that measures the supply of foreign financing (DUM98 or LOFCA). If one ignores the fact that there was an extraordinary increase in the supply of foreign financing while the URR was in force, and variables like DUM98 and LOFCA are omitted, then the *encaje* appears to be weakly related to capital flows. Inclusion of variables associated with the effect of the supply of foreign financing is fully justified given the nature of the problem under study. Exclusion of DUM98 and CFE from the FKN equation is clearly rejected by the data at the 1% level (appendix G, table G2), as it significantly undermines the explanatory power of the regression for FKN — the adjusted R<sup>2</sup> falls from 0.44 to 0.14 (appendix G, table G1).

If net capital flows are broken down into their short-term (FKNCP) and medium- and long-term (FKNMYLP) components, the estimation of cointegrating relations for each type of flow shows clearly distinguishable

behaviour patterns. In the estimation of short-term flows, presented in the second column of table 4, the response to the *encaje* is even more pronounced than in the case of total flows. The coefficient of *spread-CFE* in the FKNCP regression is more than double that corresponding to the estimation of total flows and is significant at the 1% level.

In the case of medium- and long-term flows (FKNMYLP), the results for which are shown in the third column of table 4, neither the effect of the *encaje* nor that of the *spread* was significant. Accordingly, both variables were omitted, accepting that returns arbitrage was not a dominant force driving medium- and long-term net capital flows to Chile in the 1990s. The evolution of FKNMYLP relates more directly to domestic investment and the evolution of foreign financing-supply conditions (LOFCA). It is, therefore, notable that the effectiveness of the *encaje* in influencing total capital flows is fundamentally determined by the response of short-term flows to the CFE. This confirms earlier results concerning the effect of the reserve requirement on the composition of external financing, namely that it favours a heavier relative use of medium- and long-term foreign financing, but not that it increased FKNMYLP.

## 2. Error-correction model for net capital flows

The short-term adjustment process represented by error-correction equations is estimated by ordinary least squares. Contemporary changes in the model's endogenous variables are not included, and lagged variables can be considered exogenous. To denote the first time-difference of the variable used in the cointegration estimations, the letter D is placed before the original name of the variable, and the number of lags is shown in parentheses.<sup>31</sup>

The results of the error-correction estimation for total net capital flows, shown in the first column of table 5, highlight the rapid and statistically significant error correction response of net capital flows, that is to the residual in the cointegration equation for FKN lagged by one period, RESIDFKN(-1). Total net capital flows also respond to arbitrage variables and to macroeconomic variables, including lagged changes in the terms of trade

<sup>30</sup> In the unrestricted estimation, the parameter associated with CFE in the cointegration equation for capital inflows was -26,712, and was significant at the 95% confidence level; whereas the parameter for *spread* was 2,505, and not significantly different from zero even at 25%. An F-statistic of 4.16 is obtained in the equivalence test for the two configurations that include and exclude the financial cost of the *encaje*, which shows that the hypothesis of *encaje* exclusion is rejected with 95% confidence.

<sup>31</sup> DX(-i) represents the "i"th lag of the first difference of variable X. In the case of variables expressed in log form (e.g. LTI), the first difference of the logarithm is expressed as if it were that of the original variable (e.g. DTI).

TABLE 5

**Chile: Error-correction estimations for total net capital flows, short-term flows and medium- and long-term flows<sup>a/</sup>**  
**Method: Ordinary least squares**  
*(1991.2 - 2000.4)*

Variable explained =>	DFKN	DFKNCP	DFKNMYLP
<i>Explanatory variables</i>			
C	-45.540 (0.300)	-89.425 (0.342)	–
DCFE	–	-73185 (0.000)	44082 (0.002)
DCFE(-1)	–	48807 (0,004)	–
DCFE(-4)	-17925 (0.029)	–	-44082 (0.002)
DCFE(-7)	-24118 (0.003)	–	–
DREXT(-5)	-18234 (0.002)	-34928 (0.002)	–
DREXT(-6)	–	-32400 (0.003)	–
DREXT(-1)	–	–	-24663 (0.018)
Drc90(-2)-DREXT(-2)	–	21010 (0,000)	–
DTI(-3)+DTI(-4)	-2287.3 (0.006)	-2287.3 (0.006)	-2521.6 (0.06)
DTI(-6)	-6375.2 (0.000)	-4449.8 (0.018)	-2521.6 (0.06)
DTI(-7)+DTI(-8)	2890.4 (0.001)	–	(–)
DLOFCA(-2)+DLOFCA(-4)	51.53 (0.083)	–	142.37 (0.010)
DLOFCA(-2)+DLOFCA(-3)	–	214.51 (0.001)	142.37 (0.010)
DLOFCA(-8)	108.68 (0.000)	113.57 (0.029)	–
DDDA(-4)-DPIB(-4)	11861 (0.000)	–	–
Dy (-4)	0.19736 (0.004)	–	–
Dy (-7) + Dy (-8)	-0.18124 (0.014)	–	0.30663 (0.08)
Drc90(-3)-DCFE(-3)	–	–	24160 (0.000)
RESIDY(-1)	-0.80752 (0.000)	-0.44856 (0.002)	-0.918 (0.000)
Adjusted R <sup>2</sup>	0.934	0.775	0.781
Durbin-Watson statistic	1.995	2.119	2.001

Source: Estimated by the authors.

<sup>a/</sup> RESIDY(-1) represents the residuals of cointegration equation  $y$  (FKN, FKNCPC or FKNMYLP) with a one-period lag, while Dy(-1) is the corresponding explained variable in the error-correction model, with  $i$  lags.

(DTI), in the demand for external financing represented by the difference between the changes in aggregate demand and output (DDDA-DPIB), and in the supply of external capital (LOFCA). Arbitrage-related variables include changes in the financial cost of the *encaje* (DCFE) and changes in the external 90-day real interest rate (DREXT), also with different lags. All the parameters associated with the explanatory variables are statistically different from zero at 5% significance or less according to the “t statistic test”. Exclusion of arbitrage-related variables, DREXT(-4), DCFE(-4) and DCFE(-7), is rejected by the data, as is the exclusion of the variables related to the *encaje*, DCFE(-4) and DCFE(-7).<sup>32</sup>

The error-correction estimation for short-term capital flows, shown in the second column of table 5, provides similar results to the estimation made for total flows, but the response of short-term flows to the reserve requirement is more immediate and clearly stronger than that of total flows. Estimation of the error-correction model for medium- and long-term flows provides different results, which are shown in the third column of table 5. Firstly, the response of such medium- and long-term flows to the *encaje* seems to be weak. Even more, on impact the reserve requirement increases medium- and long-term flows, many of which were not covered by the URR and were used as a vehicle for circumvention. With several quarters' lag the circumvention is compensated and the *encaje* generates some weak negative effect on medium- and long-term capital flows.

<sup>32</sup> Based on an unrestricted estimation of parameter values presented in appendix H, table H2.

## IV

### Simulations of policy responses to confront external capital flows

The equations for net capital flows discussed in this section, in conjunction with estimations for gross capital formation and the rest of private-sector aggregate demand presented in appendix C, comprise a model that can be used to evaluate the macroeconomic effects of the *encaje* policy. Estimations for the two behavioural functions representing private expenditure—capital formation and the rest of private-sector domestic demand—give conventional results. The only outstanding feature of those estimations is that private expenditure responds significantly to net capital flows. Cumulative annual total net capital flows expressed as a percentage of GDP (FKNAY) were included as an explanatory variable in the equations for private expenditure.

The policy-evaluation simulations use the cointegration and error-correction relations to represent the dynamics of the variables. The first of the simulations was carried out on the basis of departures from the baseline scenario in order to calculate total response (multiplier effects) to changes in key variables. The second simulation was directed to answer whether or not the application of the *encaje* in Chile made a significant contribution to the stabilization of domestic demand by moderating the expansionary trend of capital flows; it presents the effects of eliminating the reserve requirement in 1996, the year in which capital inflows intensified. Finally, the third simulation attempts to answer whether a more intensive application of the URR could have averted the overexpansion of private expenditure on its own, or whether it would have needed support from other complementary policies. The simulation evaluates the policy adjustments that were needed to reduce aggregate demand by around 1.5% in 1997, in order to limit the economy's exposure to a sudden stop of capital flows.

#### 1. Multipliers of key variables

Presented below are the response elasticities for domestic aggregate demand and net capital flows to changes in the *spread*, the CFE, the domestic interest rate, cumulative annual net capital flows as a percent

of GDP (FKNAY) and government expenditure, sustained for two years (table 6). The exercise was carried out considering changes of 100 basis points in the real domestic interest rate, the *spread* and the CFE, and changes equivalent to 1% of GDP in cumulative annual net capital flows (FKNAY) and total government expenditure. The results confirm that the effects of changes in the CFE on aggregate demand and capital flows are quantitatively important.

Changes in the real interest rate directly affect private expenditure by altering the cost of domestic financing for consumption and investment. A sustained 100 basis-point rise in the domestic real interest rate reduces domestic demand by 1.06% after two years. If the returns spread were to rise in parallel with the interest rate, the total effect on aggregate demand would be moderated, but still be negative. A 100 basis-point increase in the spread would generate a cumulative annual increase in net capital flows equivalent to 0.24% of GDP; the capital inflow, in turn, has an expansionary effect on private-sector spending, such that a 100-basis point widening of the *spread* is associated with a 0.26% increase in private expenditure after two years. An increase in the reserve requirement can offset the spread's expansionary effect on capital flows and private expenditure. The 100 basis-point rise in the CFE—roughly equivalent to a 10 percentage-point rise in the *encaje* rate or extending the period of the required deposit for about four months—causes capital flows

TABLE 6

**Chile: Proportional response of capital flows and total domestic demand in *t*+7 to a sustained change in the explanatory variable introduced in *t***

	Variation of FKNAY (Percentage of GDP)	Variation of domestic demand (%)
+1% <i>rc</i> 90	—	-1.06%
+1% <i>spread</i>	0.24%	0.26%
+1% CFE	-0.77%	-0.67%
+1% FKNAY	1.00%	0.42%
+1% LGOB	0.00%	0.21%

Source: Prepared by the authors.



to contract by 0.77% and reduces aggregate demand by 0.67%. A parallel and equal increase in both the *spread* and the CFE ends up reducing capital flows and aggregate demand, according to the estimation.<sup>33</sup> Lastly, a 1% increase in government expenditure raises aggregate demand by 0.21%, despite not affecting capital flows.

## 2. *Encaje*, early elimination scenario

To identify the macroeconomic consequences of discontinuing the URR during the capital flow surge, a simulation exercise is presented, using the results of the estimation discussed in the previous section. The simulation attempts to approximate the behaviour of net capital flows, gross capital formation and domestic aggregate demand if the reserve requirement on capital inflows had been lifted; i.e. if the CFE had been lowered to zero as from the first quarter of 1995. With the *encaje* having no effect, lowering the CFE to zero would not alter the value of other macroeconomic variables, particularly capital flows and domestic demand. As shown in figure 2, the simulation based on the estimations presented in the previous section neither shows that the URR was totally ineffective, nor that its effect on total capital flows and aggregate demand was irrelevant.

Without the URR, domestic demand would have expanded even more strongly in 1996 and 1997, surpassing the baseline scenario by 1.6% of GDP in 1997. As shown in figure 3, abolition of the reserve requirement in 1995 would have amplified the cycle. From the third quarter of 1996 to the fourth quarter of 1998 domestic demand is between one and two percentage points of baseline GDP higher than in the baseline scenario. Holding everything else constant, this additional expenditure would have caused the current account deficit in 1997 to widen to about 7%, instead of fluctuating around 5% of GDP as it did that year, thereby making the economy more vulnerable to a sudden stop in capital flows.

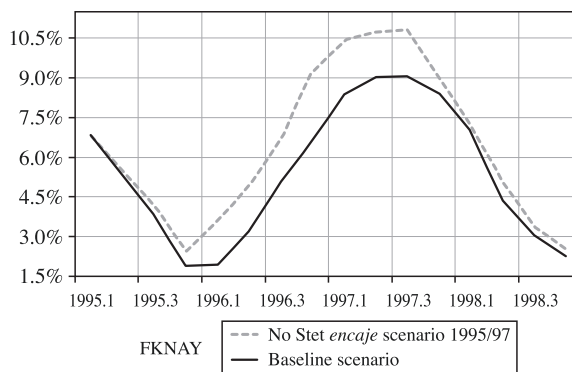
It can be concluded that although the URR policy was unable to avoid the overexpansion of private-sector spending in 1996 and 1997, it still had a significant

<sup>33</sup> That is the effect of the CFE on capital flows appears to be larger than that of the spread. It is important to have in mind that the underlying assumption in calculating the CFE is that all flows have a maturity of one year. For shorter maturities, the increase in the URR has a larger impact on the effective financial cost.

FIGURE 2

### Chile: Simulation of *encaje* elimination, 1995-1997

Cumulative annual net capital flow (FKNAY), as a percentage of GDP

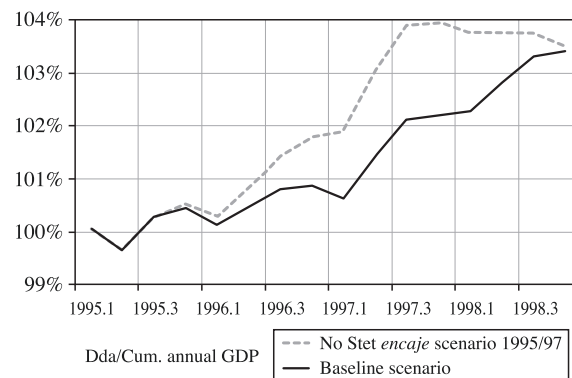


Source: Prepared by the authors.

FIGURE 3

### Chile: Simulation of *encaje* elimination, 1995-1997

Aggregate demand



Source: Prepared by the authors.

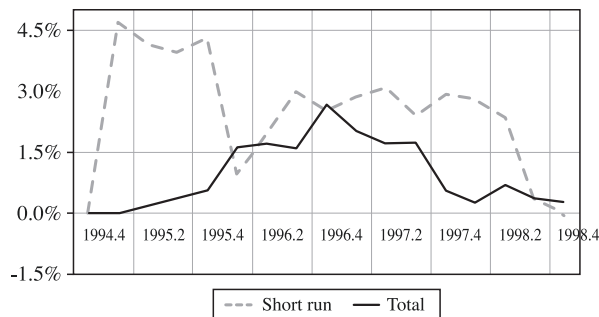
macroeconomic effect; in the absence of the URR, the excess expenditure would have been either considerably larger, or else required the introduction of other compensatory measures, such as a much tighter fiscal policy, simply to keep aggregate expenditure at the original level.

Figure 4 shows the deviations of total net capital flows and short-term flows from the baseline scenario in the no-*encaje* scenario. The simulation clearly shows that short-term flows respond more than twice as much as total flows to the elimination of the reserve requirement. Short-term capital flows increase by up to 4.5% of GDP, while total flows expand by 1.5% of

FIGURE 4

**Chile: Simulation of *encaje* elimination, 1995-1997. Deviations of capital flows from baseline scenario**

(Cumulative annual deviation, as a percentage of GDP)



Source: Prepared by the authors.

GDP, only. The counterpart of this difference would be a decrease in medium- and long-term flows in response to abolition of the *encaje*. This shows the strong effect of the URR on short-term flows and, consequently, its effectiveness in shifting the composition of external financing toward medium- and long-term flows.

Naturally, a different combination of policies than those actually applied if the *encaje* had been lifted completely can be envisaged, but that would have meant overcoming other problems. If, along with abolition of the URR the domestic interest rate had been lowered by an amount equivalent to the CFE reduction, the lower interest rate could have caused a narrowing of the *spread*, which would have at least partly averted the additional capital inflow stemming from the lower CFE. Still, for that to happen, it must be assumed that lowering the domestic interest rate would not have affected the exchange rate, and the expected real depreciation, otherwise the *spread* may have failed to fall in order to compensate the reduction in the CFE. But even in this favourable case, the lower cost of domestic financing associated with the lower real interest rate would have by itself boosted aggregate demand, thus aggravating the existing macroeconomic imbalance.

### 3. Macroeconomic adjustment scenarios

A second simulation exercise involves applying the results of the estimation to define policy actions that would have made it possible to curb spending growth in 1996 and 1997. A reduction in the level of aggregate demand equivalent to 1.5% of GDP in 1997 would have

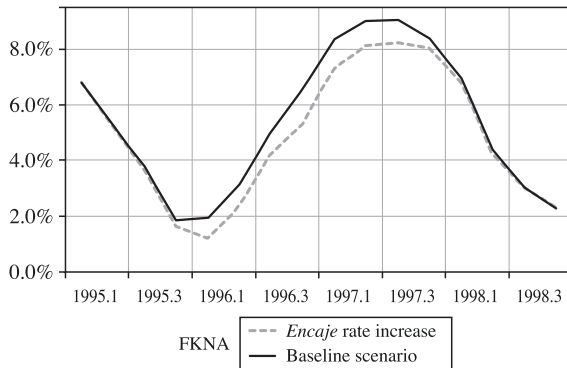
been sufficient to reduce the current account deficit to around 4% of GDP. Possible ways of achieving this include hikes in the URR rate and in the interest rates. In 1996 and 1997, the exchange rate remained close to the floor of its flotation band, so there was rigidity preventing the peso from appreciating in response to contractionary monetary policy. Consequently, an interest-rate hike in a situation of exchange-rate rigidity would have widened the expected spread of returns, and this would have stimulated additional capital inflows. Nonetheless, lacking an empirical relationship to explain the behaviour of the *spread*, for the purposes of the simulation exercise the CFE rate alone will be varied, with the *spread* and the domestic interest rate left unaltered. A 150 basis-point rise in the financial cost of the *encaje*—achieved, for example, by extending the term of the special deposit from 12 to 18 months—would have reduced total cumulative annual capital flows (FKNAY)<sup>34</sup> by 1.2% of GDP in 1996, and by 0.4% in 1997 (figure 5). With net capital flows declining in response to the higher CFE, aggregate expenditure would have shrunk, but only by 0.2% of GDP in 1996 and 0.75% of GDP in 1997. Therefore, a 150 basis-point increase in the CFE would not have been sufficient to generate the adjustment desired for aggregate demand, yet consideration of even larger increases raises problems of effectiveness. The existence of channels for capital flows that are not covered by the URR causes medium- and long-term loans to barely falter in response to increases in the CFE. Accordingly, once short-term flows converge to zero as a result of the rise in the financial cost of the reserve requirement, the marginal effectiveness of the URR in contracting total net flows and, hence, private expenditure, becomes exhausted. The reason for this is that while it is reasonable to expect the *encaje* to restrain capital inflows, it cannot be assumed to generate net short-term capital outflows. As shown in figure 6, in this scenario with a 150 basis-point rise in the CFE, net annual short-term capital inflows would have been negative for much of the 1995-1997 period. This points to the exhaustion of the *encaje* mechanism in terms of additional influence on total flows and private expenditure.<sup>35</sup>

<sup>34</sup> Accumulated annually, such that the representative value for each year in the figure corresponds to the final quarter of that year.

<sup>35</sup> This argument is analogous to the effect of an increase in customs tariffs: no matter how high an import duty is set, it will never turn an import substitute into an exportable good.

FIGURE 5

**Chile: Simulation of adjustment scenario for capital flows; 150 basis-point rise in the financial cost of the *encaje*, 1995-1997**  
(Cumulative annual net capital flows, as a percentage of GDP)



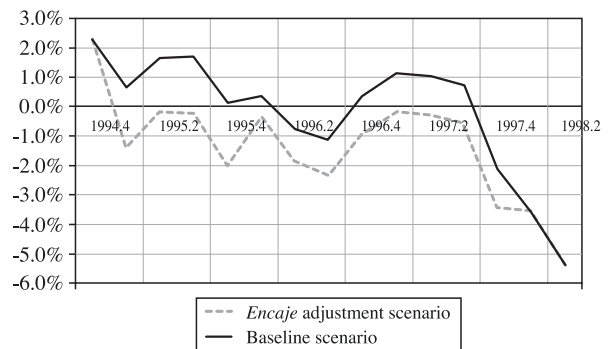
Source: Prepared by the authors.

The marginal effectiveness of the *encaje* policy was seriously restricted by the selectiveness of its application. To prevent the circumvention that undermined its effectiveness, it would have been necessary to cover by the URR exempted flows, including direct commercial credit (from foreign suppliers or export buyers), and certain forms of portfolio investment. Nonetheless, the political feasibility of these type of extension was nil as it aroused strong resistance in the private sector and proposals along these lines found virtually no support in the public sector. The interesting point is that extending the reserve requirement to capital flows that were not covered not only would have increased its macroeconomic effectiveness but also would have reduced the microeconomic costs stemming mainly from differential financing costs between agents who could or could not avoid the URR.<sup>36</sup> Unfortunately, it is difficult to simulate how capital flows would have responded to an extension of the URR application. It is not enough to assume that a generalization of the mechanism would have caused medium- and long-term flows to behave like short-term flows. By design, the CFE that would have affected medium- and long-term flows brought within the coverage of the URR would have been much lower than the CFE affecting short-term flows. Absent the

<sup>36</sup> Even direct investment was used as a channel for avoiding the *encaje*, by disguising flows that actually represented financial or portfolio investment. Le Fort and Sanhueza (1997) examine evasion channels and argue in favour of a generalization of the mechanism.

FIGURE 6

**Chile: Simulation of adjustment scenarios for short-run flows, 1995-1997; 150 basis-point rise in the financial cost of the *encaje***  
(Cumulative annual flows, as a percentage of GDP)



Source: Prepared by the authors.

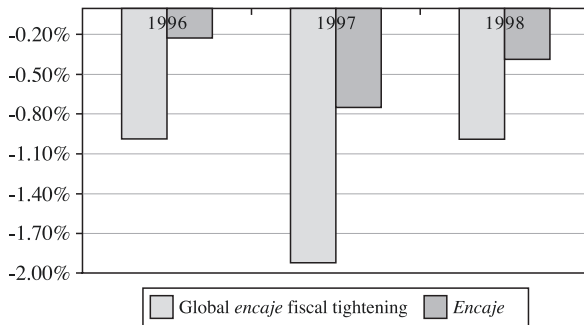
possibility of wider URR coverage, the most appropriate complement for an increase in the CFE to control the expansion of aggregate demand, would have been to consider the use of countercyclical fiscal policy. This type of policy would have consisted in accepting a higher fiscal balance, even surplus, in periods of rapid expansion of domestic activity and expenditure, and a lower balance, even deficit, in periods of slower or non-expansion of activity. As a result, the expansion of public expenditure would occur in line with the trend growth of public revenues rather than following its cyclical fluctuations.<sup>37</sup> For the purposes of simulating countercyclical fiscal policy, a scenario involving a real expansion of government spending of 5% per year in 1996-1997 is proposed, instead of the 7% average expenditure growth actually recorded during those two years. Complementing that fiscal adjustment with a higher financial cost of the *encaje*, it would have been possible to obtain a reduction in aggregate demand, compared to the baseline scenario, of 1.0% of GDP in 1996 and 1.8% in 1997 (figure 7). By virtue of this overall adjustment—*encaje* and fiscal—the current account deficit could have been below 4% of GDP in 1997, thereby reducing the potential effects of a sudden stop of capital flows.

<sup>37</sup> See the analysis of countercyclical fiscal policy in Budnevich and Le Fort (1997).



FIGURE 7

**Chile: Adjustment scenarios simulation.  
Increase in the financial cost of the *encaje*,  
and slower growth in government spending,  
1996, 1997 and 1998**



Source: Prepared by the authors.

It should be noted that there was another possible course of action available to moderate capital inflows, but, unlike the other alternatives, this required accepting a greater real currency appreciation. Allowing a larger real appreciation of the peso would have reduced the spread of returns by raising expectations of future real

depreciation, thereby reducing capital inflows and private expenditure. Nonetheless, such a course of action entails risks that are hard to anticipate. The real appreciation might not have immediately resulted in expectations of future depreciation, as assumed regularly as well as in this model. Under especially uncertain conditions, a greater appreciation might encourage expectations of further appreciation, at least for a while; and this would have caused a profound misalignment of the exchange rate, with serious effects on resource allocation and macroeconomic stability. Apart from the expansionary or contractionary effect of the variable driving the real appreciation, there is some empirical evidence that such an appreciation is associated with an expansion of private spending. The first reason being that the Chilean private sector has a net liability position in foreign currency (Chile's external debt is held predominantly by the private sector), the real value of which falls with the real appreciation; and the second that the vast majority of consumers are wage-earners whose real income is essentially a non-tradable good whose relative price rises with a real appreciation.<sup>38</sup>

## V

### Conclusions

The foregoing analysis of the period of heavy capital inflows into Chile offers a set of lessons concerning the behaviour of capital flows and their relation to macroeconomic variables.

Firstly, Chile suffered from the effects of a massive capital flow surge from 1990 to 1997, and its subsequent sudden stop as from 1998. The capital inflow surge was concentrated in medium- and long-term flows, which was desirable given that these flows are less volatile and more persistent than short-term flows. But concentrating external financing in medium- and long-term flows was not sufficient protection, since it failed to prevent the sudden stop. This underscores the importance of total external financing in determining the likelihood of a reversal of capital inflows.

Secondly, the intensification of medium- and long-term flows had the characteristics of an exogenous supply shock rather than an endogenous arbitrage response to high domestic interest rates. The intensification is linked particularly to a reduction in

the domestic interest rate and, hence, to a structural increase in the supply of foreign financing.

Thirdly, only short-term flows appear to be driven by returns arbitrage and attracted by higher domestic interest rates than those prevailing abroad. There are signs that the *encaje* helped to compensate for this effect, by allowing additional room for monetary-policy manoeuvre. In fact, the real domestic interest rate, and to some extent the actual spread appear to show a certain positive response to increases in the CFE, and a negative response to increases in the supply of foreign financing.

<sup>38</sup> It is also possible that the real appreciation would cause income to be redistributed towards groups with a higher marginal propensity to consume, thereby resulting in higher private expenditure, following the well known Diaz Alejandro effect. The real appreciation would boost real wages and reduce profits. If the marginal propensity to consume is greater among workers than among people who receive income from capital, then the real appreciation is expansionary for consumption.

Fourthly, the URR was effective in reducing total net capital flows and in altering their composition in favour of medium- and long-term flows. The cointegration and error-correction estimations reveal statistically significant responses by capital flows to the CFE when the supply of foreign financing is included as a determinant of capital flows. Elimination of the *encaje* during the surge of capital inflows would have produced non-negligible macroeconomic effects, including an increase in net capital flows of roughly 2% of GDP, and a serious worsening of the overexpansion of private spending that the Chilean economy was already suffering in the mid-1990s, involving an additional domestic-demand expansion of the order of 1.5% of GDP in 1997.

Fifthly, the marginal effectiveness of the *encaje* was limited, because there was little potential to continue reducing the short-term capital inflows on which the URR selectively acted. In contrast, there was no limit to greater circumvention through non-covered medium- and long-term flows, without extending the scope of URR application to close off exempt channels. A more effective strategy to control capital inflows and restrain domestic demand would have required additional strengthening of the *encaje*, not only raising its financial cost, but also expanding its application and supporting it with a countercyclical fiscal policy.

Sixthly, the effectiveness of the URR in restraining net capital flows stems from the compensation response to an intensification of capital inflows arising from an increase in the supply of foreign financing. If the latter is not recognized and foreign financing supply variables are excluded from the specification of the net capital flow equation, then the *encaje* has no statistically significant effect on capital flows. As the capacity of the model to explain capital flows also deteriorates sharply, exclusion of the *encaje* and foreign financing-supply variables is rejected by the data.

Lastly, the effect of monetary policy on domestic expenditure could be weakened by capital inflows if the exchange rate is unable to fluctuate freely in response to changes in the interest rate. If the currency cannot appreciate to offset the potential effects of higher domestic interest rates on the rates spread, additional capital inflows weaken the effect of contractionary monetary policy on domestic spending and complicate efforts to stabilize the exchange rate. Exchange-rate flotation restores the effectiveness of monetary policy; nonetheless, in the face of intensifying capital inflows, as occurred in 1996-1997, allowing the currency to float could generate a significant risk of exchange-rate overshooting, with potentially very harmful repercussions on resource allocation and external stability.

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## APPENDIX A

## Glossary of variables

*Spread of expected returns between domestic and foreign assets*

This variable represents the difference between the expected returns on assets denominated in pesos and those denominated in dollars. It is calculated using the following equation:

$$\text{Spread} = r - (i^* - \pi^* + ss) - \hat{ETCR}$$

where

$r$  : Real 90-365 day lending rate

$i^*$  : Libor in dollars

$\pi^*$  : Wholesale price index of the United States, projected rate of change

$ss$  : Country-risk or Chile's sovereign spread

$\hat{ETCR}$  : Expected real depreciation, calculated as the difference between the effective exchange rate and the equilibrium rate, according to Soto and Valdés (1998).

*Effective spread of returns between domestic and foreign assets (spread\_2)*

Same as the previous variable, except that the differential here corresponds to the effective return on peso- and dollar-denominated assets. It is calculated using the effective forward change of the real exchange rate

$$\text{Spread}_2 = r - (i^* - \pi^* + ss) - \hat{TCR}$$

$\hat{TCR}$  : Real effective forward or expected devaluation, under perfect foresight.

*Financial cost of the encaje (CFE)*

This variable is calculated assuming a loan with the same maturity as the required deposit, one year, and using the following equation:

$$\text{CFE} = \frac{\varepsilon (i^* + s)}{(1 - \varepsilon) (1 - t)}$$

where

$\varepsilon$  : Encaje rate for the period (30%)

$i^*$  : One-year Libor

$s$  : Average spread on short-term foreign credits to the Chilean private sector.

$t$  : Tax on foreign interest payments (4%).

Given that from the date of initial application of the encaje until December 1994 it was possible to make the special deposit in the operation's currency of origin, for that period the minimum CFE was obtained from those resulting by calculating the Libor in dollars, deutschmarks and yen, weighting them according to the weights in the currency

basket used to define the central parity exchange rate (*acuerdo*). Regulations in force since 1995 have required the *encaje* to be established in dollars; so, from that year onward, the CFE calculated with the Libor in dollars was used (Source: Le Fort and Sanhueza, 1997).

*Domestic interest rate on loans (rc90)*

Average interest rate of the banking system for loans denominated in "Unidades de Fomento" (UF), at 90-365 days. Source: Central Bank

*Nominal external interest rate (libo90 = i\*)*

Libor in dollars at 90 days. Source: Central Bank

*Real external interest rate (rext): rext = i\* - π\* + ss*

Real exchange rate, in logarithm form (LTCR = log TCR) Source: Central Bank

*Dummy variable for reversal of capital flows (DUM98)*

Takes the value 0 until the final quarter of 1997, and 1 as from the first quarter of 1998.

*Index of the supply of foreign capital, in log form (LOFCA = log OFCA)*

OFCA was constructed as the sum of capital flows destined for Argentina, Brazil, Mexico (according to IFS capital account figures) weighted by the respective sovereign spread relative to the spread on Chilean bonds. Prepared by the authors using data from J.P. Morgan.

*Net flow of short-term capital (FKNCP)* including errors and omissions, credit lines, short-term loans and change in external assets; *Net flow of medium- and long-term capital (FKNMYLP)*, including direct and portfolio investment and medium and long-term loans; and *Total Net capital flow (FKN+FKNCP)*. Source: Balance of Payments, Central Bank.

*Cumulative annual net capital flow as a percentage of GDP (FKNAY)*

Source: Prepared by the authors using cumulative annual FKN data expressed as a percentage of GDP.

*Output gap (Gaphpy)*

Source: Variable constructed by applying the Hodrick-Prescott filter to real quarterly GDP, cumulative for the last four quarters, and expressed in log form. The gap is defined as filtered GDP minus actual GDP. Quarterly GDP Source, National Accounts, Central Bank

*Depth of the financial system in log form (LFIN)*

Trend of stock market capitalization in Chile as a percentage of GDP.

Source: Lehmann (1998).

*Euromoney risk index for Chile (IRE)*

Index constructed by Euromoney in the range 0-100. Economic and sociopolitical factors are weighted to determine the country-risk rating for each economy. The higher the index, the less risky the country. Source: Euromoney.

*Gross domestic product, in log form (LPIB = log PIB)*

Source: Central Bank

*Domestic aggregate demand in log form (LDDA = log DDA)*

Source: Central Bank

*Gross fixed capital formation, in log form (LFBKF = log FBKF)*

Source: Central Bank

*Remainder of domestic aggregate demand, in log form (LRESTD=log RESTD)*

RESTD includes domestic aggregate demand other than gross capital formation, consumption and inventory accumulation. RESTD = DDA-FBKF

Source: Central Bank

*Index of the terms of trade, in log form (LTI = log TI)*

Source: Central Bank.

*Government spending, in log form (LGOB=log GOB)*

Source: Ministry of Finance

*Government expenditure on capital formation (GOFBK)*

Source: Ministry of Finance

*Other government expenditure (GOBRST)*

Source: Ministry of Finance

*Private gross fixed capital formation, in log form (LFBKPR)*

FBKPR = FBKF - GOFBK.

*Remainder of private-sector domestic aggregate demand, in log form (LRSTPR)*

RSTPR = RESTD - GOBRST.

*Tax revenue, in log form (LTRIB)*

Source: Ministry of Finance

*Worldwide GDP growth ( $g_{World}$ ) and United States GDP growth ( $g_{USA}$ )*

Source: Bloomberg

APPENDIX B

Graphs of the main variables

Figure B1: Spread

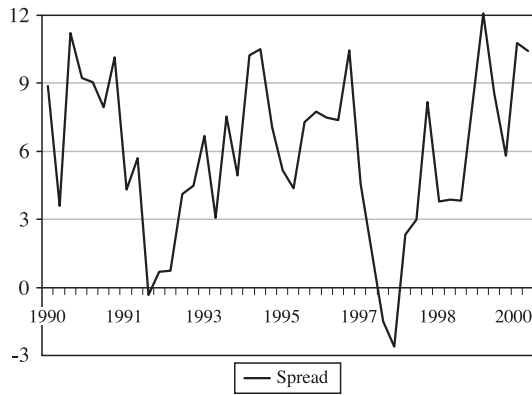


Figure B2: Spread\_2

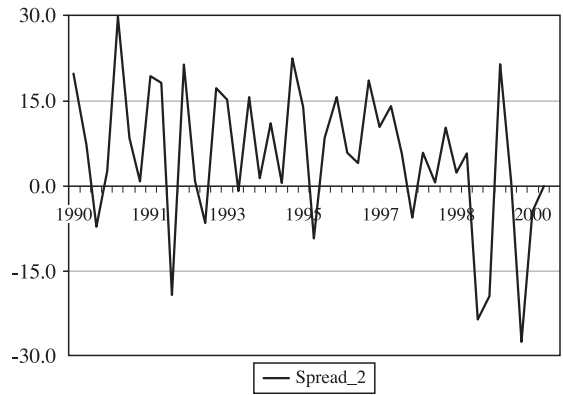


Figure B3: Financial cost of the *encaje*

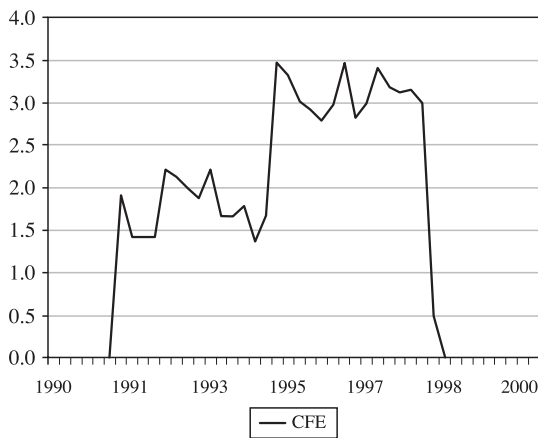


Figure B4: rc90

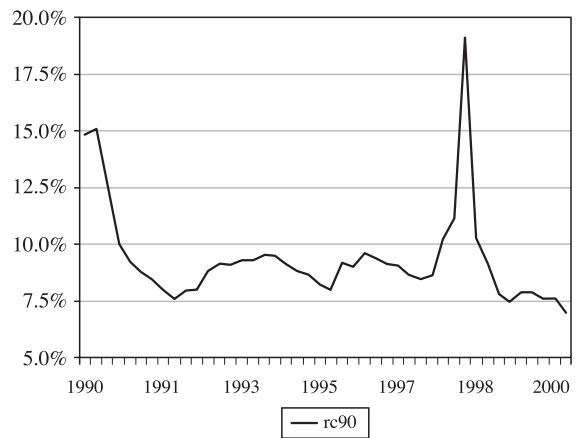


Figure B5: Libo90

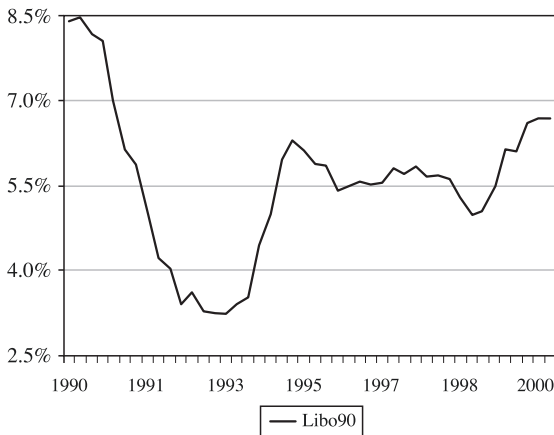


Figure B6: REXT

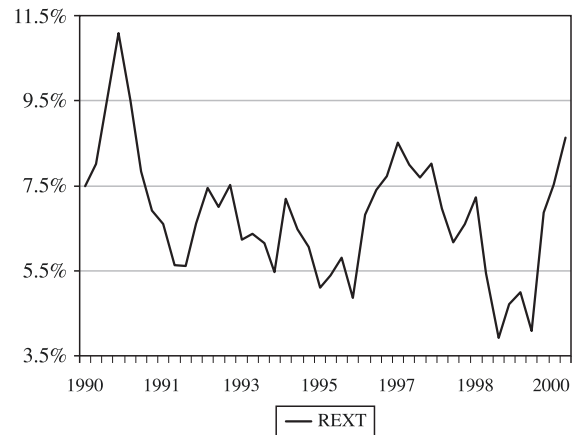


Figure B7: LTCR

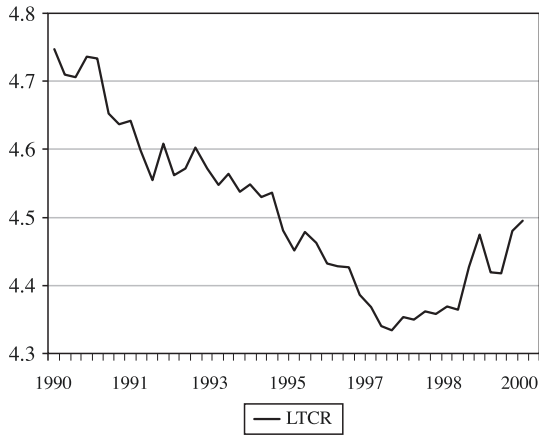


Figure B8: Dum98

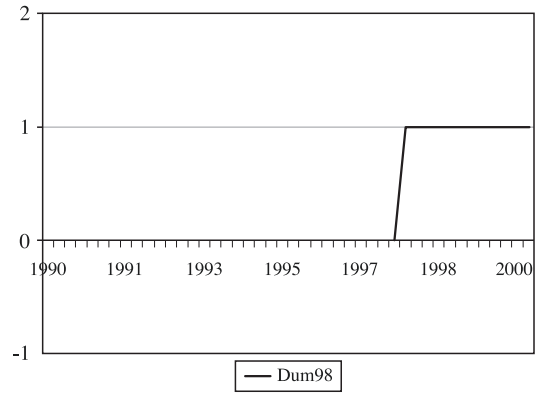


Figure B9: LOFCA

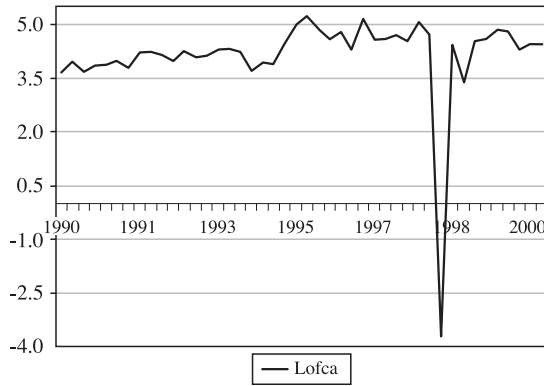


Figure B10: FKN

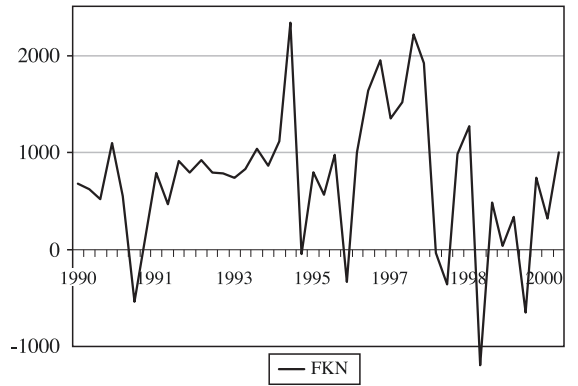


Figure B11: FKNCP

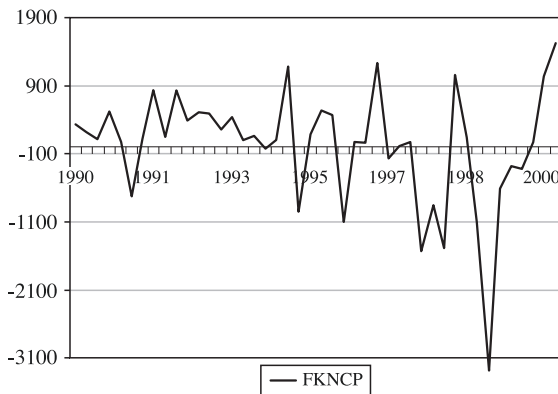


Figure B12: FKNMYLP

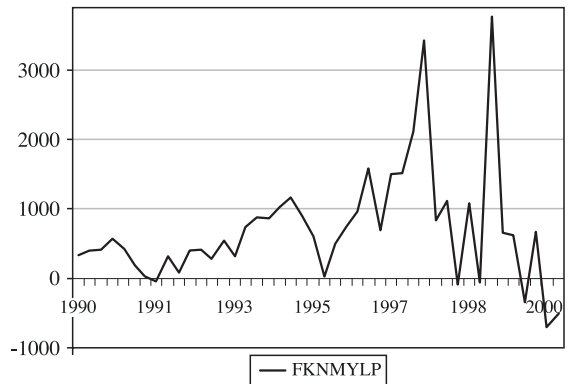




Figure B13: FKNAY

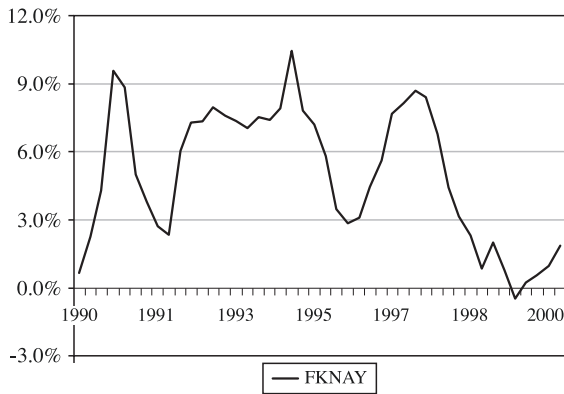


Figure B14: LFBKF

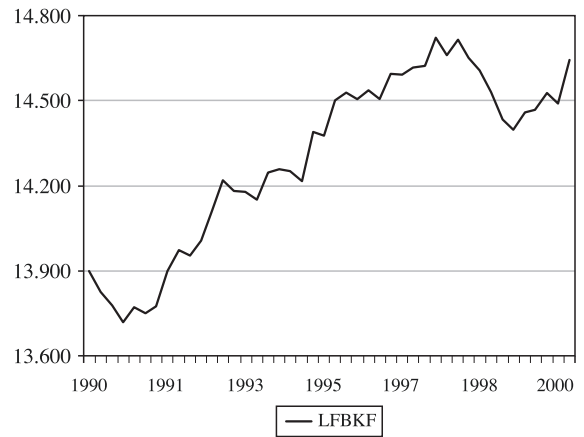


Figure B15: LDDA

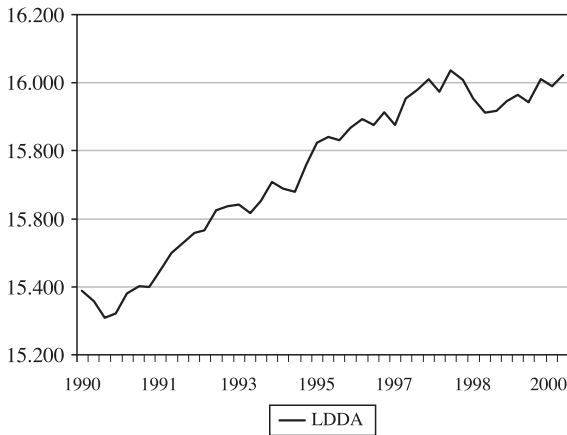


Figure B16: LPIB

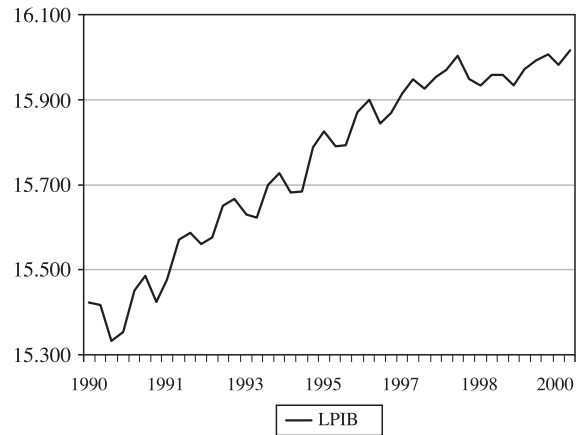


Figure B17: GAPHPY

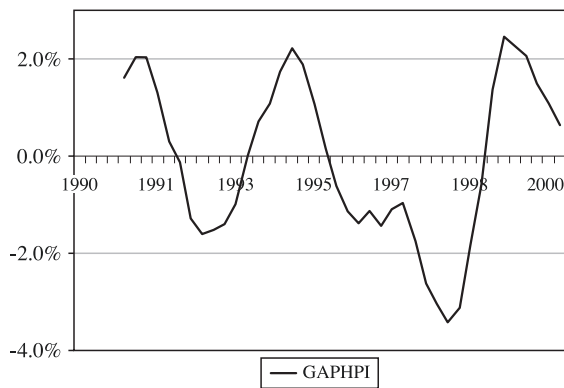


Figure B18: LFIN

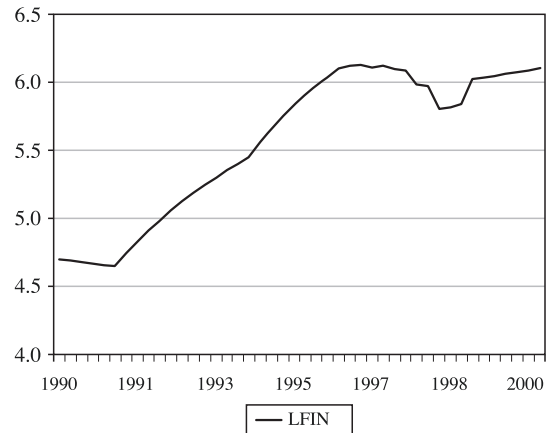


Figure B19: LGOB

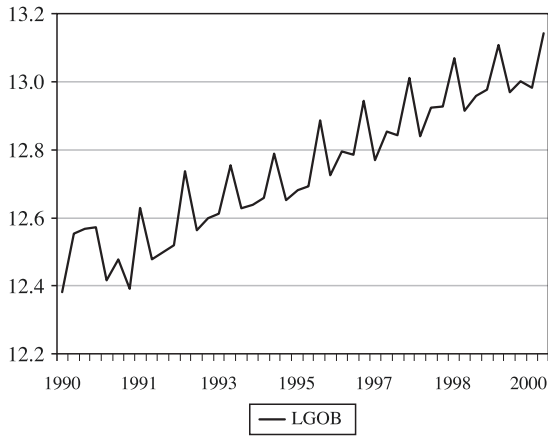


Figure B20: LTRIB

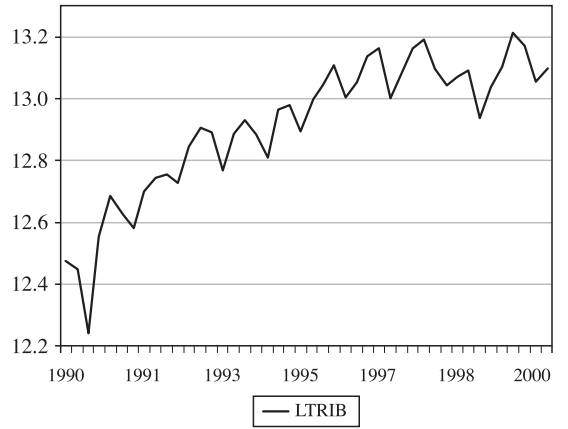


Figure B21: LRSTPR

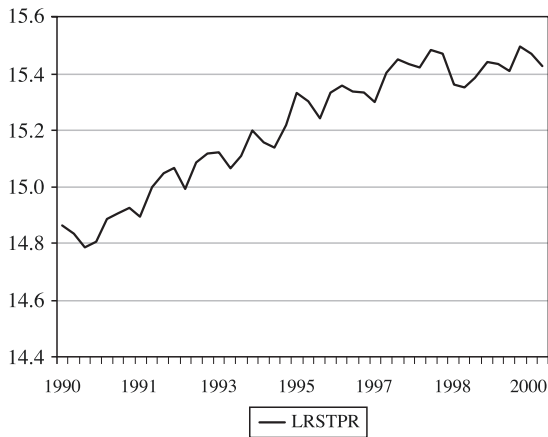
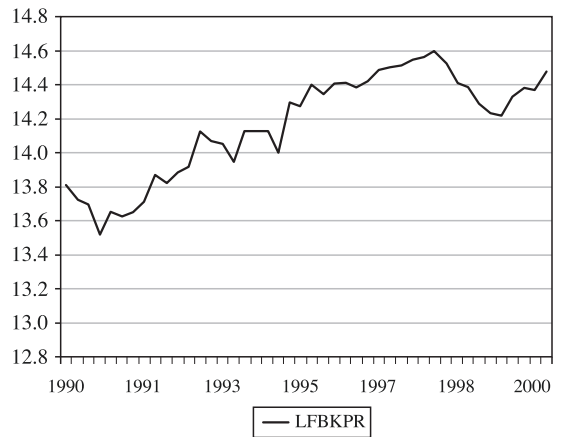


Figure B22: LFBKPR



Source: This set of graphs was prepared by the authors.

## APPENDIX C

## Private expenditure estimated equations

TABLE C1

**Chile: Cointegration for private gross fixed capital formation (LFBKPR) and for other private aggregate demand (LRSTPR)** <sup>a/ b/</sup>  
*Method: Two-stage least squares (1990.1 Stet - 2000.4)*

Variable explained	LFBKPR	LRSTPR
<i>Explanatory variables</i>		
Constant	10.0561 (0.000)	12.2253 (0,000)
LTI	0.4369 (0.039)	– (–)
FKNAY*(1-DUM98)	1.4031 (0.034)	– (–)
FKNAY*DUM98	2.7691 (0.030)	– (–)
GAPHPY <sup>c/</sup>	-4.4007 (0.000)	-1.1039 (0.006)
LFIN <sup>d/</sup>	0.3348 (0.000)	0.3099 (0.000)
Time	0.0071 (0.040)	30.39 (0.133)
LPIB-LTRIB	– (–)	0.4679 (0.000)
rc90*(1-DUM98)	– (–)	-0.8976 (0.000)
Adjusted R <sup>2</sup>	0.954	0.961
Durbin-Watson statistic	2.184	1.693
F-statistic	135.381	243.106

Source: Prepared by the authors.

<sup>a/</sup> Figures in parentheses correspond to P-values.

<sup>b/</sup> Instruments: CFE, LFIN(-1), LOFCA, FKN(-1), GAPHPY(-1), LFBKF(-1), LPIB(-1), LTI, TIEMPO, DUM98, RC90(-1), LIBO90, SPREAD(-1), LRSTD(-1), LGOB, FKNAY(-1), LTRIB(-1), LTRC(-1), REXT, EDTCR(-1), LRSTD(-1), LGOB2, LGOBRST, LGOBFBK.

<sup>c/</sup> Defined as the difference between potential GDP represented by a Hodrick-Prescott filter applied to cumulative annual GDP, and actual cumulative annual GDP.

<sup>d/</sup> See Lehmann (1998).

Fixed capital formation of the private sector (LFBKPR) is explained by variables relating to the return of investment projects, such as the terms of trade (LTI) that affect profitability of export-oriented projects, and the output gap (GAPHPY), that affect the profitability of projects oriented to domestic demand. In addition, variables representing the effect of financing conditions on investment were also included, such as cumulative annual net capital flow (FKNAY) and stock market capitalization (LFIN). The availability of foreign credit (FKNAY) has a positive effect on capital formation, and this effect becomes more intensive during the period of weakening capital inflows (DUM98=1), which also coincides with the period of least exchange-rate intervention

and thus more direct association between foreign credit and domestic spending.

The rest of the private-sector aggregate demand encompasses consumption and changes in inventories. The explanatory variables for this equation include a version of private-sector disposable income (LPIB-LTRIB) and stock market depth (LFIN), the output gap (GAPHPY) and the real interest rate, which affects the rest of private demand only in the period of high availability of external financing (DUM98=0). Estimation of the error-correction model for private demand is shown in table C2. The variables considered, including variations in the interest rate, terms of trade and output gap, all have the expected signs and are significantly different from zero.

TABLE C2

**Chile: Error-correction estimations for fixed capital formation and the rest of private-sector domestic demand** <sup>a/</sup>  
*Method: Ordinary least squares (1991.2 - 2000.4)*

Variable explained =>	DFBKPR	DRSTPR
<i>Explanatory variables</i>		
C	–	0.01399 (0.014)
DTI(-1)+ DTI(-2)	0.44155 (0.000)	–
DTI(-5)+ DTI(-6)	0,15923 (0,055)	–
Drc90(-1) + Drc90(-4)	-0.76841 (0.000)	–
Drc90(-3) + Drc90(-4)	–	-0.56164 (0.019)
Drc90(-6) + Drc90(-7) + ( Drc90(-8)	-0.9811 (0,000)	–
Drc90(-6) + Drc90(-7)	–	-0.37952 (0.054)
Drc90(-5)	-1.8633 (0.000)	–
DDFKNAY(-1)+ DDFKNAY(-2)	0.72855 (0.000)	–
DFKNAY(-5)	–	0.71187 (0.018)
DDGAPHPY(-1)	-6.7357 (0.000)	–
DGAPHPY(-1) + DGAPHPY(-7)	-1.3635 (0.114)	–
DPIB(-1)	–	1.10349 (0.000)
DPIB(-2)	–	0.85115 (0.001)
DTRIB(-2)	–	-0.22269 (0.020)
DDy(-3)	-0.35612 (0.000)	–
Dy(-1) + Dy(-3)	0.29376 (0.000)	–
Dy(-5) + Dy(-6)	–	-0.31973 (0.003)
Dy(-6) + Dy(-8)	0.07005 (0.096)	(0.056)
Dy(-4)	–	0.3204
Dy(-1)+Dy(-2)	–	-0.48674 (0.001)
RESID(-1)	-0.72414 (0.000)	-0.63242 (0.000)
Adjusted R <sup>2</sup>	0.928	0.781
Durbin-Watson statistic	1.968	2.249

Source: Prepared by the authors.

<sup>a/</sup> Figures in parentheses are P-values. RESID(-1) represents the residuals of the corresponding cointegration equation, with a one-period lag. D represents the first difference of the variable and DD the second difference. Dy (-i) is the explained variable with i lags.

## APPENDIX D

## Chile: Augmented Dickey-Fuller (ADF) unit root test

Variable	ADF / EGR	Constant	Trend	Constant and trend
FKN	-5.0 <sup>a/</sup>	Yes	No	-5.0 <sup>a/</sup>
dFKN	-3.3 <sup>b/</sup>	Yes	No	-7.2 <sup>a/</sup>
LTI	-2.1	Yes	No	-2.8
dTI	-8.8 <sup>a/</sup>	Yes	No	-8.7 <sup>a/</sup>
<i>Spread</i>	-2.5	Yes	No	-2.3
d <i>Spread</i>	-4.5 <sup>a/</sup>	Yes	No	-4.6 <sup>a/</sup>
<i>Spread_2</i>	-6.9 <sup>a/</sup>	Yes	No	-7.4 <sup>a/</sup>
d <i>Spread_2</i>	-5.7 <sup>a/</sup>	Yes	No	-5.8 <sup>a/</sup>
CFE	-1.6	Yes	No	-1.6
dCFE	-5.3 <sup>a/</sup>	Yes	No	-5.2 <sup>a/</sup>
LTCR	-2.1	Yes	No	-0.7
dLTCR	-6.6 <sup>a/</sup>	Yes	No	-7.1 <sup>a/</sup>
RC90	-3.3	Yes	No	-3.2
DRC90	-5.4 <sup>a/</sup>	Yes	No	-4.2 <sup>a/</sup>
LIBO90	-2.1	Yes	No	-2.9
dLIBO90	-2.5 <sup>b/</sup>	No	No	-2.5
REXT	-2.3	Yes	No	-2.2
dREXT	-5.8 <sup>a/</sup>	No	No	-5.8 <sup>a/</sup>
EdTCR	-2.7	Yes	No	-2.7
dEdTCR	-7.8 <sup>a/</sup>	No	No	-7.7 <sup>a/</sup>
LFIN	-2.0	Yes	No	-1.1
dFIN	-3.0 <sup>b/</sup>	No	No	-3.5 <sup>a/</sup>
LOFCA	-6.5 <sup>a/</sup>	Yes	No	-6.4 <sup>a/</sup>
dLOFCA	-11.5 <sup>a/</sup>	No	No	-11.4 <sup>a/</sup>
LPIB	-2.7	Yes	No	-2.1
dPIB <sup>a/</sup>	-1.9	Yes	No	-2.9
LDDA	-0.9	Yes	No	-1.5
dDDA	-6.5 <sup>a/</sup>	Yes	No	-6.6 <sup>a/</sup>
LFBKPR	-1.1	Yes	No	-2.7
dFBKPR	-8.0 <sup>a/</sup>	Yes	No	-7.9 <sup>a/</sup>
LRSTPR	-2.0	Yes	No	-1.9
dRSTPR	-8.5 <sup>a/</sup>	Yes	No	-4.9 <sup>a/</sup>
FKNCP	-4.6 <sup>a/</sup>	Yes	No	-4.6 <sup>a/</sup>
dFKNCP	-6.6 <sup>a/</sup>	Yes	No	-6.6 <sup>a/</sup>
FKNMYLP	-4.8 <sup>a/</sup>	Yes	No	-4.8 <sup>a/</sup>
dFKNMYLP	-12.5 <sup>a/</sup>	Yes	No	-12.4 <sup>a/</sup>
FKNAY	-1.9	Yes	No	-2.2
dFKNAY	-4.9 <sup>a/</sup>	Yes	No	-5.0 <sup>a/</sup>
GAPHPY	-4.4 <sup>a/</sup>	Yes	No	-4.2 <sup>a/</sup>
dGaphpy	-4.5 <sup>a/</sup>	Yes	No	-4.4 <sup>a/</sup>
LTRIB	-3.5 <sup>b/</sup>	Yes	No	-1.9
dTrib	-3.3 <sup>b/</sup>	Yes	No	-4.0 <sup>a/</sup>

Source: Prepared by the authors.

<sup>a/</sup> Rejected at 1%. <sup>b/</sup> Rejected at 5%.

<sup>a/</sup> Using the Phillips-Perron test, the unit root hypothesis is rejected at the 1% significance level, whether including a constant and trend, or a constant alone.

## APPENDIX E

**Engle-Granger unit root test for residuals (EGR)<sup>a/</sup>**  
*(Without constant or trend)*

Variable	EGR
RESIDFKN	-7.0 <sup>a/</sup>
RESIDFKNCP	-4.2 <sup>a/</sup>
RESIDFKNMYLP	-5.5 <sup>a/</sup>
RESIDFKBPR	-6.4 <sup>a/</sup>
RESIDRSTD	-5.6 <sup>a/</sup>
RESIDSpread 2	-7.4 <sup>a/</sup>
RESIDrc90	-4.7 <sup>a/</sup>
RESIDLTCR	-2.0

Source: Prepared by the authors.

<sup>a/</sup> Rejected at 1%. Critical value of EGR: at 1%, -3.73; at 5%, -2.91.

<sup>b/</sup> See Enders (1995), p. 383.

## APPENDIX F

**Chile: Variables characterization matrix<sup>a/</sup>**  
*(1990.1 - 1997.4)*

	World growth	Supply of capital	Capital inflows	Price of copper	Terms of trade	Trend current a/c
World growth	2.15/0.91	0.26	0.23	0.5	0.52	0.057
Supply of capital	0	68.62/70.7	0.02	-0.03	0.24	-0.35
Net flows	2 ==> 1	0	0.24/0.05	0.25	0.16	-0.345
Price of copper	0	0	0	106.21/22.76	0.85	-0.014
Terms of trade	0	1 ==> 2	0	2 ==> 1	125.27/11.48	-0.089
Trend current a/c	0	0	2 ==> 1	0	0	0.76/0.88

Source: Prepared by the authors.

<sup>a/</sup> The diagonal contains the mean and standard deviation of each variable. The cells above the diagonal show the correlation coefficient between the variables. The cells below the diagonal indicate the result of the Granger causality test. Identifier numeral "1" refers to the variable that appears in the corresponding row, and "2" to the variable in the column.

The results show that world growth causes net capital flows to Chile; the terms of trade cause the supply of capital; and capital inflows cause the trend current account (or

expenditure). The supply of capital responds positively to the terms of trade, but not to the copper price.

## APPENDIX G

TABLE G1

**Chile: Cointegration of total net capital flows<sup>a/ b/</sup>**  
**(Alternative specifications)***Method: Two-stage least squares (1991.1 - 2000.4)*

Variable explained	FKN (1)	FKN (2)	FKN (3)	FKN (4)	FKN (5)
<i>Explanatory variables</i>					
Constant	13104.97 (0.101)	9336.26 (0.161)	13616.61 (0.107)	8263.05 (0.384)	7795.05 (0.377)
LTI	-2671.56 (0.139)	-1819.65 (0.220)	-3102.50 (0.108)	-1554.11 (0.489)	-1433.58 (0.464)
LDDA-LPIB	16503.11 (0.000)	13788.89 (0.001)	16457.78 (0.001)	17725.94 (0.001)	18099.08 (0.000)
Spread	2920.02 (0.443)	– (–)	3233.07 (0.419)	4285.85 (0.355)	3987.97 (0.333)
Spread_2	– (–)	-360.21 (0.720)	– (–)	– (–)	– (–)
CFE	-26282.12 (0.054)	-26811.84 (0.024)	-26927.32 (0.067)	2011.64 (0.881)	– (–)
DUM98	-1887.17 (0.000)	-1932.33 (0.000)	– (–)	– (–)	– (–)
LOFCA (1-DUM98)	– (–)	– (–)	378.53 (0.002)	– (–)	– (–)
Time	33.45 (0.085)	35.58 (0.060)	22.71 (0.225)	-24.05 (0.103)	-25.31 (0.034)
Adjusted R <sup>2</sup>	0.419	0.486	0.358	0.135	0.159
Durbin-Watson statistic	2.200	2.269	2.072	1.699	1.681
F-statistic	7.238	7.389	6.232	3.789	4.866

*Source:* Prepared by the authors.<sup>a/</sup> Figures in parentheses are P-variables.<sup>b/</sup> Instruments: CFE, LFIN(-1), LOFCA, FKN(-1), GAPHPY(-1), LFBKF(-1), LPIB(-1), LTI, TIME, DUM98, RC90(-1), LIBO90, SPREAD(-1), LRSTD(-1), LGOB, FKNAY(-1), LTRIB(-1), LTCR(-1), REXT, EDTCR(-1).

Each of the five specifications reports a negative and statistically significant effect for the CFE on total net capital flows. The only exception is when variables representing the supply of foreign financing are excluded from the specification.

In addition to the five alternative specifications, we present the results of the coefficient restriction test. In the first case the effect of the spread is restricted to be equal to

that of the CFE, but with opposite sign. The test is applied to specification (1), which is an unrestricted version of the cointegration equation for the FKNs used in this paper; the restriction is not rejected by the data at the 10% significance level. The test of CFE exclusion applied to specification (1) is also rejected by the data, this time at the 5% significance level, along with the test for exclusion of CFE and DUM98, which is rejected at the 1% level.

TABLE G2

**Variable restriction and exclusion tests in the cointegration  
of total net capital flows**

Wald test:

Equation EQFKN

Statistical test	Value	df	Probability
F-statistic	2.406231	(1, 33)	0.1304
Chi-squared	2.406231	1	0.1209

Summary of null hypothesis:

Normalized restriction (= 0)	Value	Standard error
C(4) + C(5)	-23362.10	15060.63

Redundant variables: CFE

F-statistic	4.160857	Probability	0.049440
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Dependent variable: FKN

Method: Two-stage least squares

Sample: 1991.1 2000.4

Number of observations: 40

Variable	Coefficient	Standard error	t-statistic	Probability
C	15881.50	8179.707	1.941573	0.0605
LDDA-LPIB	13412.14	4091.269	3.278235	0.0024
LTI	-3426.204	1837.548	-1.864552	0.0709
SPREAD	5919.967	3844.308	1.539931	0.1328
DUM98	-1350.852	425.1714	-3.177193	0.0032
TIME	28.58302	19.70826	1.450306	0.1561
R <sup>2</sup>	0.436849	Mean of dependent variable		724.1099
Adjusted R <sup>2</sup>	0.354033	Standard deviation of dependent variable		758.3639
Standard error of the regression	609.5127	Sum of the squares of the residuals		12.631.195
F-statistic	6.935445	Durbin-Watson statistic		2.109922
Probability (F-Statistic)	0.000147			

Redundant variables: CFE, DUM98

F-statistic	7.782162	Probability	0.001703
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Variable	Coefficient	Standard error	t-statistic	Probability
C	7609.241	8822.429	0.862488	0.3943
LDDA-LPIB	17984.64	4357.349	4.127427	0.0002
LTI	-1391.464	1959.591	-0.710079	0.4824
SPREAD	3807.827	4307.973	0.883902	0.3828
TIME	-25.22153	11.47011	-2.198891	0.0346
R <sup>2</sup>	0.249573	Mean of dependent variable		724.1099
Adjusted R <sup>2</sup>	0.163810	Standard deviation of dependent variable		758.3639
Standard error of the regression	693.4739	Sum of the squares of the residuals		16.831.710
F-statistic	4.747603	Durbin-Watson statistic		1.681684
Probability (F-statistic)	0.003633			



## APPENDIX H

**Error-correction model: Total net capital flows**

TABLE HI

**Chile: Alternative specifications***Method: Ordinary least squares (1991.2 - 2000.4)*

Variable explained	DFKN (1)	DFKN (2)	DFKN (3)
<i>Explanatory variables</i>			
DCFE(-4)	-20628.87 (0.114)	-20547.31 (0.016)	-21714.33 (0.007)
DREXT(-4)	-20796.53 (0.014)	-20547.31 (0.016)	-21714.33 (0.007)
DSPREAD(-3)	4311.87 (0.011)	— (—)	6891.60 (0.007)
DTI(-3)+DTI(-4)	-2837.73 (0.024)	-2714.69 (0.054)	-4226.93 (0.003)
DLOFCA(-2)+DLOFCA(-4)	51.44 (0.100)	72.39 (0.037)	71.69 (0.026)
DDDA(-4)-DPIB(-4)	9674.33 (0.0003)	9556.90 (0.002)	11302.25 (0.000)
DFKN(-4)	0.35347 (0.0015)	0.289513 (0.008)	0.37741 (0.000)
RESIDY(-1)	-0.80899 (0.000)	-0.77950 (0.000)	-0.63882 (0.000)
Adjusted R <sup>2</sup>	0.788	0.718	0.751
Durbin-Watson statistic	2.081	2.186	2.246

*Source:* Prepared by the authors.

<sup>a/</sup> Figures in parentheses are P-values. RESIDY(-1) represents the residuals from the corresponding cointegration equation, with a one-period lag.

Specification (1) presents an alternative version of the error-correction model associated with the cointegration relation for selected FKNS. The second column presents an error-correction model based on alternative specification (4) for FKN cointegration, using the observed spread (*Spread*<sub>2</sub>) instead of the expected spread. The third is based on the cointegration specification for FKN (5) which uses LOFCA instead of DUM98 to represent the supply of capital.

The first restriction consists of excluding all arbitrage-related variables from the selected error-correction model. This restriction is rejected at the 1% significance level, according to F-tests and the likelihood ratio. The second restriction excludes only variables associated with the *encaje*; in this case the restriction is also rejected at the 1% level, according to the F-test and the likelihood ratio.

TABLE H2

## Test of restrictions in the error-correction model for FKN

Redundant variables: DCFE(-4), DCFE(-7), DREXT(-5)

F-statistic	12.55910	Probability	0.000046
Loglikelihood ratio	34.92271	Probability	0.000000

Dependent variable: DFKN

Method: Least squares

Sample: 1992.2 2001.1

Variable	Coefficient	Standard error	t-statistic	Probability
C	-14.07508	64.33351	-0.218783	0.8285
DTI(-3)+DTI(-4)	-1372.601	1104.481	-1.242757	0.2250
DTI(-6)	-5480.374	1309.262	-4.185850	0.0003
DTI(-7)+DTI(-8)	3100.855	1130.278	2.743444	0.0109
DLOFCA(-2)+DLOFCA(-4)	64.93306	26.13234	2.484778	0.0197
DLOFCA(-8)	71.60060	39.47195	1.813961	0.0812
DDDA(-4)-DPIB(-4)	10852.28	2684.125	4.043136	0.0004
DFKN(-4)	0.304481	0.083557	3.643988	0.0012
DFKN(-7)+DFKN(-8)	-0.156841	0.097817	-1.603423	0.1209
RESIDFKN(-1)	-0.828273	0.146451	-5.655622	0.0000
R <sup>2</sup>	0.885404	Mean of dependent variable		-15.16610
Adjusted R <sup>2</sup>	0.845736	Standard deviation of dependent variable		972.2218
Standard error of the regression	381.8540	Akaike information criterion		14.95809
Sum of the squares of the residuals	3.791.125	Schwarz criterion		15.39795
Log likelihood	-259.2456	F-statistic		22.32045
Durbin-Watson statistic	1.912767	Probability (F-statistic)		0.000000

Redundant variables: DCFE(-4), DCFE(-7)

F-statistic	8.064264	Probability	0.002219
Loglikelihood ratio	19.12887	Probability	0.000070

Dependent variable: DFKN

Method: Least squares

Sample: 1992.2 2001.1

Variable	Coefficient	Standard error	t-statistic	Probability
C	-52.82989	53.71039	-0.983606	0.3347
DREXT(-5)	-23913.63	6444.825	-3.710517	0.0010
DTI(-3)+DTI(-4)	-1482.778	904.9873	-1.638451	0.1139
DTI(-6)	-5957.520	1079.886	-5.516802	0.0000
DTI(-7)+DTI(-8)	2302.837	950.2834	2.423316	0.0230
DLOFCA(-2)+DLOFCA(-4)	51.37420	21.71047	2.366334	0.0260
DLOFCA(-8)	88.04781	32.62752	2.698575	0.0123
DDDA(-4)-DPIB(-4)	10517.75	2199.977	4.780848	0.0001
DFKN(-4)	0.287082	0.068588	4.185573	0.0003
DFKN(-7)+DFKN(-8)	-0.202594	0.081049	-2.499642	0.0194
RESIDFKN(-1)	-0.927187	0.122861	-7.546624	0.0000
R <sup>2</sup>	0.926101	Mean of dependent variable		-15.16610
Adjusted R <sup>2</sup>	0.896542	Standard deviation of dependent variable		972.2218
Standard error of the regression	312.7143	Akaike information criterion		14.57492
Sum of the squares of the residuals	2444755	Schwarz criterion		15.05878
Log likelihood	-251.3486	F-statistic		31.33011
Durbin-Watson statistic	2.156734	Probability (F-statistic)		0.000000

# Unfinished business *in the international* dialogue on debt

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From November 2001 to April 2003, the International Monetary Fund grappled with a radical proposal, the Sovereign Debt Restructuring Mechanism, for handling the external debt of insolvent governments of developing and transition economies. That proposal was rejected, but new “collective action clauses” that address some of the difficulties in restructuring bond debt are being introduced. In addition, IMF is developing a pragmatic and eclectic approach to assessing debt sustainability that can be useful to governments and creditors. However, many of the problems in restructuring sovereign debt remain and this paper suggests both specific reforms and modalities for considering them.

# I

## Introduction

A new sense of calm descended on the international markets for emerging-economy debt in mid-2003. The calm was seen in rising international market prices of sovereign bonds of emerging economies in the first half of the year and good sales of new bond issues, in particular those of Brazil and Mexico, as well as the successful completion of Uruguay's bond exchange offer. Market nervousness before then had been set off by two developments in 2001: the Argentine Government's slide into the largest default ever and the fear of contagion in other countries, and the proposal in November by Anne Krueger, the First Deputy Managing Director of the International Monetary Fund (IMF), to create a new international insolvency regime for governments that could no longer service their foreign debt.

The IMF proposal, coupled with the Argentine crisis, was read by the financial markets as a message that the IMF and the major industrialized countries were setting definite limits on their willingness to extend international liquidity to emerging economies in balance-of-payments crisis. Large amounts of funds could still be mobilized in support of policy reforms for countries deemed to be cooperating in resolving their difficulties, especially where there was a major global security interest, as had been the case in Turkey during the same period. Even in security-sensitive situations, however, default had to be considered a realistic possibility, as the Russian crisis had shown in 1998. The IMF proposal thus said, in essence, that if defaults were going to happen, then a better mechanism was needed to restructure the debt, especially as there would be limits to the financial efforts to prevent them.

In fact, modest changes have been made in how future sovereign insolvencies will be treated, and the

international financial markets and government issuers alike have accepted them. They address certain concerns about how the external bond debt of crisis countries is restructured, although some market participants discount the likelihood that those concerns were any more than theoretical difficulties. This paper will argue that the changes that were adopted leave unresolved the basic concerns that made the IMF proposal so important, namely its implicit recognition that an adequate, timely and fair restructuring of external debt should be an assured part of the international policy to assist insolvent countries. The hard part is figuring out how to do that.

The international financial markets have for the time being discounted the concern that something is missing in the international mechanisms for treating problem debt, as they are looking with increasing favour on emerging economies in 2003.<sup>1</sup> While the Argentine debt situation was still unresolved as of the time of writing in August 2003, Argentina's economy had begun to recover behind more effective macroeconomic policies. Perhaps most significantly, the market no longer feared that other large sovereign debtors would newly seek to restructure their debt at this time. In other words, the change in government in Brazil had been smooth and the IMF proposal for radical reform of the debt relief process did not gain the broad support necessary for its enactment.

Indeed, the IMF proposal had generated significant opposition among developing-country governments, especially in Latin America, and in financial markets that lend heavily to this region. The United States Government gave the *coup de grâce* to the proposal at the April 2003 meeting of the Fund's International Monetary and Financial Committee when it declined to support further work on it. Nevertheless, economic policy in response to default has not changed at all and the existing debt workout mechanisms remain a haphazard collection of not necessarily coherent

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□ Views expressed herein are those of the author and not necessarily of the United Nations. This paper carries forward a discussion originally prepared for the Intergovernmental Group of Twenty-four on International Monetary Affairs Technical Meeting in Port of Spain, Trinidad and Tobago, on 13 and 14 February 2003 (see Herman, 2003). Comments of participants in that meeting have helped shape this paper and are gratefully acknowledged, as are those of an anonymous referee of an earlier draft paper.

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<sup>1</sup> This notwithstanding, market professionals have not been expecting developing countries to see more than a modest net increase in flows in 2003 (Institute of International Finance, 2003).

processes. If the IMF proposal was not an adequate way to achieve the desired outcome, neither are the modest changes that were adopted.

The discussion that follows seeks to outline the essential characteristics of default on external sovereign debt (section II) and why debt restructuring is inescapably difficult (section III). Section IV then

discusses the IMF proposal and its shortcomings. Section V describes changes that have been introduced in 2003 in relation to sovereign bond restructuring and how these have left open many important questions. Section VI concludes by suggesting how to work towards a more adequate, timely and fair process for restructuring the external debt of countries in crisis.

## II

### Insolvency and the nature of the policy intervention

Any debt crisis represents a failure. All borrowers solemnly pledge to repay their loans with interest according to a fixed schedule in a contract. Default violates the contract. Pledged collateral may cover more or less of the debtor's obligations to the creditor, but unsecured loans, as to governments, leave the creditors fully exposed to loss. What can or should the creditors do to recover their funds? What rules should they operate under and who should make those rules?

In the eighteenth century in Europe and the United States, defaulters went to prison. This usually did not help the creditors recover their loans, although it was believed to discourage default. Prison under harsh conditions was the ultimate policy to deal with the "moral hazard" that people might take on excessive debt without adequate consideration of their obligation to repay. However, with the spread of "limited liability" corporations as a means of undertaking business activity, creditors of defaulting corporations could collect only the remaining assets of the insolvent company to cover their unsecured loans. Creditors could not touch the personal wealth of the owners or managers, let alone send them to prison, although insolvent companies ceased to exist. This effectively limited creditor rights of recovery and in doing so fostered the larger accumulation of funds needed by the business entities that became the backbone of the industrialization of the now-developed world.

Corporate insolvency meant the assured death of the company, which was possibly too drastic, until a new idea took hold. This idea was that sometimes restructuring the firm under court supervision but with the "debtor in possession" could salvage it and thus protect more of the claims of the creditors, not to

mention the jobs of its employees, than closing down the firm, breaking it up and selling its assets. This approach began in the United States in the nineteenth century as an emergent practice to handle defaults of railroad companies, although it was later codified in the famous Chapter XI of the United States Bankruptcy Code.<sup>2</sup> Defaults by government borrowers have an even longer history than corporate defaults and have necessarily always been matters of restructuring.<sup>3</sup> Today, personal bankruptcies are also matters of debt restructuring, as there are no more debtors' prisons.

In each case in which debt restructuring is applied, whether personal, corporate or sovereign, the object of the restructuring is to help the bankrupt entity make a new start, sacrificing as many of the claims of the creditors as warranted but not more than is deemed necessary. Where to draw the line is, of course, the difficult part. The debtor should be expected to survive after the restructuring and not need subsequent relief under normal circumstances and sound management. Concepts of social justice place limits on how close to survival minimums the creditors should be allowed to put the debtor; e.g., indentured servitude (in effect, temporary slavery) is no longer allowed in personal bankruptcy. But should the debtor "prosper" on the back of creditor losses? In the case of sovereign bankruptcy,

<sup>2</sup> See Bolton (2002).

<sup>3</sup> It has even been argued that relations between sovereigns and their creditors have been an important factor in shaping the development of "Western civilization"; e.g., they are said to have been an important determinant in the growth of democracy (Schultz and Weingast, 2003; Macdonald, 2003).

the answer is yes. Poor countries, in particular, should have the opportunity to become rich countries even if they default at some point on their loan repayments and need to restructure their debt. At least, this is presumed to be a general principle.

In cases of personal and corporate insolvency, the domestic court system oversees the debt workout, as loans are legal contracts subject to court enforcement. This also gives some comfort to the debtor these days, as the courts operate under the legal and political apparatus of the State and are expected to apply constitutional principles and societal norms in their decisions. The first problem in the case of sovereign default on external loans is that there is no global court to oversee the process and ensure it is “fair” as might be defined in some form of international law.

The second problem in sovereign default also stems from the absence of any global bankruptcy court. Most debtors have obligations to multiple creditors. Any one creditor may not even know about the existence of the others, or the amounts owed to each or to all of them together. A bankruptcy court facilitates bringing all the creditors together and organizing their negotiations according to the principles and processes stipulated in the legislated guidelines of the relevant bankruptcy law.

In the case of defaulting sovereigns, there are only political understandings to govern the amount and allocation of debt relief, and *ad hoc* and informal practices to organize the actual negotiations. Debts owed to major government creditors are restructured in the Paris Club, largely represented by the interests of their export credit agencies. Paris Club members determine among themselves what terms to offer (on advice from IMF) and then press the debtor to obtain comparable terms from non-Paris Club official creditors and from private lenders (multilateral institutions being exempt from debt restructuring in most cases). Debts owed to commercial banks are usually renegotiated with an advisory committee (London Club), which reaches a tentative agreement with the government that it puts to the bank creditors for decision. Debts in the form of international bonds have been the hardest to restructure and have been the focus of the recent policy reforms, which aim to make reaching agreement easier than in the past (see below).

Each member of each of the main creditor groups and other creditors as well (e.g., unpaid suppliers to the government) are motivated to maximize their individual loan recovery, even at the expense of the other creditors. Nevertheless, the clubs of government and bank creditors and the bondholder arrangements under the new reforms can impose a measure of

discipline on members of their groups through contract or informal pressures. There is no formal mechanism to ensure that sacrifice is comparable or appropriate across the groupings of creditors or that overall relief is sufficient for realizing the presumed general goal, that the remaining debt not prevent the economy from being able to develop.

IMF usually plays an informal role in coordinating the creditors and assessing the adequacy of relief, as part of its broader engagement with debt-crisis countries. But while a bankruptcy judge at domestic level would follow legal guidelines and precedents, the staff of IMF follows political guidelines given by the International Monetary and Financial Committee at ministerial level and the IMF Executive Board at operational level. Moreover, each debtor country's overall programme has to be approved by the Executive Board, which also monitors its implementation. In other words, instead of a legal/judicial approach, IMF follows a political one, wherein the relative influence of different countries on the Board reflects the size of their shareholding in the Fund.

IMF also differs importantly from a court in that it is not a neutral party to the matter being decided. IMF is itself a creditor, moreover a “preferred” creditor that must be paid before non-preferred creditors. In the preferred creditor institutions (mainly IMF, the World Bank and the regional development banks), the main shareholders are said to be willing for their institution to lend to countries in crisis when other creditors will not because they are assured they will be first in line to be repaid. Thus, when IMF negotiates an adjustment programme with a defaulting government, all creditors understand that IMF will seek to ensure that there is sufficient hard currency cash flow to service the outstanding loans of itself and the other preferred creditors. The *quid pro quo* is that these multilateral creditors in fact extend new loans and the defaulted creditors will press to have those loans be as large as possible, indeed large enough to constitute a “bail-out” and erase prospective private creditor losses.

The required amount of debt relief (certainly its phasing over time) thus depends in part on the size of new lending by IMF and other multilateral creditors, besides any bilateral loans and grants that might be accorded by different departments of the same governments that are negotiating debt relief in the Paris Club. It also depends on other prospective financial flows into and out of the country, the exchange rate, and targets for the balance of trade in goods and services and the government's fiscal position, and

simultaneously for the growth of output and income in the crisis country. One may imagine an iterative process involving IMF as coordinator, the debtor country government, its official multilateral and bilateral creditors (including IMF as lender), and the various sets of defaulted private and official creditors, wherein alternative packages of domestic macroeconomic policies, new financial commitments and debt relief are considered, albeit not simultaneously, until a consistent package is accepted at least by all the major players. That package reflects the bargaining strength of each group and is not necessarily optimal from the perspective of any one of them, let alone of the people in the crisis country who bear the brunt of the economic adjustment that accompanies the debt workout.

### III

## The arcane analytics of debt sustainability

Instead of determining the debt relief package by negotiation, might it be determined by dispassionate analysis? The answer is no. Whether or not there is any such thing as an “optimal” debt relief package, there is no way to determine what that package is. The experience of IMF and the World Bank in trying over the years to determine how much debt relief is required for the heavily indebted poor countries (HIPC) illustrates the problem: even in these financially simpler cases in which almost all of the debt is owed to official agencies, much of the analysis and thus the decisions have to be judgemental. Decisions in such an environment are inevitably reached through negotiation. Debtors press for as much relief as possible and creditors—even official ones who might have been thought able to make the political decision to approach the situation from a broad development perspective, given the relatively small sums at stake—seek to give away as little as possible.

Before the HIPC Initiative was launched to lower such countries’ debts, creditor governments only gradually and reluctantly agreed on the need to accord increasingly large reductions in the stock of debt owed them by HIPCs, while no rescheduling, let alone reduction, of multilateral loans was even contemplated. In 1996, the World Bank and IMF launched the HIPC

Initiative, which required that creditor governments finally address the essential question of how much the debt had to be cut to leave the HIPCs with a “sustainable” debt level, understanding that for possibly about 40 countries this could mean extremely deep cuts in obligations to creditor governments and reduced obligations to the multilateral institutions, as well as to all other creditors.<sup>5</sup>

<sup>4</sup> For a detailed presentation, see Fritz and Hersel (2002). Major advocates for this approach include Jubilee Research (New Economics Foundation), Jubilee Germany (*erlassjahr.de*), International Cooperation for Development and Solidarity (CIDSE), Caritas Internationalis, and other organizations (important initial and continuing work on the idea has been done by Kunibert Raffer at the University of Vienna).

<sup>5</sup> The debt relief objective of the HIPC Initiative evolved from “reducing debt as part of a broader strategy to achieve long-run sustainability” in preliminary analytical work in 1995, to “reducing debt to sustainable levels and thus providing a *durable exit strategy* from the rescheduling process” in the original World Bank/IMF formulation of the Initiative in 1996, to “providing a *robust exit* from debt rescheduling and the *achievement of debt sustainability*” in 1998 in a Bank/Fund paper, to a “*permanent exit* from the rescheduling process and a *clear exit* from unsustainable debt” in the 1999 enhancement of the HIPC Initiative (World Bank, 2003, p. 12, italics in original).



For political reasons, the guidelines for how much relief to give each country needed to be relatively simple and comparable across countries. The HIPC Initiative thus established rules of thumb for what key debt and macroeconomic indicators should be after completion of all HIPC relief. The primary indicator was that the debt of each HIPC should be brought down to between 200% and 250% of its exports after debt reduction. The HIPC Initiative had planned for up to six years of country policy reform and monitoring, with calculation at an intermediate benchmark called the “decision point” of the relief that would be given at the “completion point”. In its initial form, the IMF and World Bank were to forecast from the decision point what the debt/export ratio would be at the completion point and thus how much debt relief was needed to meet the target. In the 1999 HIPC enhancement, both the target ratio and the means of calculating it were changed. The target ratio was reduced to 150% on the grounds that the HIPCs needed an “appropriate cushion”. Explanations aside, this was an admission that the higher ratio underestimated the necessary amount of relief. In addition, instead of a forecast, data at the time of the decision point were to be used to estimate the relief needed to meet the target. This would presumably help control for over-optimistic forecasts. Moreover, the amount of relief at the completion point could be “topped up” if it were decided that the country’s debt situation had changed “fundamentally” from the decision to completion points (i.e., if its post-relief debt/export ratio would otherwise remain significantly above the target).

Additional specifications had to be made before the seemingly simple debt/export indicator could actually be measured. Firstly, as was proposed in the HIPC enhancement, the denominator of the debt/export ratio should be the value of exports in the decision-point year. Uganda was the first country to qualify for HIPC relief and it complained that as its export prices had been at a cyclical peak, it would receive insufficient relief under such a calculation. Instead, Uganda argued for an average of the past six years’ exports. That was considered too pessimistic (too favourable to Uganda) and a three-year average was approved, which became the standard for the 1999 enhancement (World Bank, 2003, box. 4.1).

It was also decided that the numerator in the ratio should not be the nominal amount of debt, but the present value of the future debt-servicing stream. This is an appropriate calculation to make, as much of the debt of the HIPCs is concessional and the nominal debt

level would overstate the effective debt to be serviced. However, the net present value (NPV) of debt-servicing obligations depends on how it is calculated. The higher the discount rate is, the smaller will be the present value of any given stream of obligations over time. The discount rate should reflect the opportunity cost of hard currency funds for the government, assuming for convenience that the funds would be held in official foreign exchange reserves if not utilized for debt servicing. But what should that interest rate be? The “proper” rate is an unknown future interest rate over the debt-servicing horizon. The current practice is to take six-month historical averages of the yields on five-year government bonds for each currency of the debt (IMF, 2003b, pp. 19-21). However, the discount rate calculated this way in 2000 would have been significantly higher than that calculated in 2003, meaning more relief would be deemed necessary in 2003 than three years before to reach the same NPV/export ratio. Indeed, international interest rates are expected to rise again in ensuing years, which means the calculated NPV on an unchanged stream of debt servicing would correspondingly shrink.

One may thus see that there was room for dispute and negotiation by the creditor and debtor governments and staff of the Bretton Woods institutions on each element in the calculation of what is in the end a relatively arbitrary rule of thumb (e.g., it takes no account of the import side of the balance of payments). Moreover, IMF has recently proposed a general definition of “debt sustainability” that is itself a good argument against any rule of thumb, namely, “a situation in which a borrower is expected to be able to continue servicing its debts without an unrealistically large future correction to the balance of income and expenditure” (IMF, 2002a, p. 4). This is an attractive definition because it draws attention to the possible impact of “debt correction” on the people in a debt-crisis country. In essence, it takes account of the fact that sovereign defaults are political decisions about which government expenditure obligations to meet and which not to meet, rather than an absolute absence of funds. Indeed, governments could decide to squeeze their populations a great deal in order to avoid actual default, and that situation would be deemed “unsustainable” under the Fund’s definition.

While conceptually attractive, this definition of sustainability is not simple to make operational. Indeed IMF has adopted a complex framework for monitoring debt sustainability (IMF, 2002a and 2002b). The essential element, it implicitly argues, is not whether a

country gets to the “proper” debt/export ratio after its debt is restructured, but whether the country has a reasonable chance to keep whatever debt level it starts with from rising back to unsupportable levels. This depends, *inter alia*, on export growth (and for low-income countries, often an ability to diversify exports), terms-of-trade trends, broadening the tax base and efficiently managing public expenditure (recalling this is about sovereign debt), as well as trends in foreign direct investment, capital flight, whether there is a natural catastrophe or sustained civil unrest and, for low-income countries, how much of their financial assistance is provided in grant form, etc.

IMF has routinely undertaken exercises to assess debt sustainability in the context of its macroeconomic projections, but independent analysts such as the United States Government Accounting Office and the World Bank’s own Operations Evaluation Department (OED) have found the ones prepared on the HIPC countries in particular to be unclear and insufficiently documented. OED has thus called for “a more transparent, explicit, and consistent methodology for the debt projections that connects all the relevant components of the fiscal budget, national accounts, financial flows and the balance of payments” (World Bank, 2003, p. 24).

World Bank management accepted this recommendation, as did IMF implicitly when it began to bring together different aspects of its monitoring of member country performance and outlook into a more coherent framework of variables to track and forecast so that external and public-sector debt sustainability could be assessed over the medium term. It also decided to carry out standard sensitivity analyses on the forecasts (such as evolution under historical norms instead of the baseline forecast), along with “stress tests” (more extreme scenarios). It sees the purpose of this framework, which will evolve in the light of experience in use, as being “to make better informed judgements possible and to discipline those judgements

by laying bare the basis on which they are made, rather than to distil a single measure of sustainability that would eliminate the need for judgement” (IMF, 2002a, p. 24). As though to underline the point, the word “judgement” appears 22 times in the 40 pages of text in the IMF framework paper. Moreover, the Fund eschews any estimate of the probability that any of its scenarios will happen (perforce including the baseline), leaving that judgement also to the “user” (IMF, 2002a, p. 25).

The remaining question is who are the users? The IMF staff put this question to its Executive Board in reviewing the framework. As the Managing Director summarized the discussion: “Clearly there is a tension, in this regard, between the view that publication would enhance the credibility of the Fund’s sustainability assessments and strengthen its accountability (the staff view), and the concern that, given the sensitivity of the subject, publication could lead to misinterpretations by the public and adverse market impacts” (IMF, 2002a, p. 3).

As the IMF framework itself is already public, and as private creditors use similar methodologies in assessing the outlook in emerging economies, it seems that governments should welcome Fund publication of its assessment and a general debate about it. That debate should inform decisions by legislatures on budgets, analyses by journalists and academics who follow developments in the economy, civil society advocates and of course potential and actual creditors and investors.<sup>6</sup> Moreover, as sovereign debt restructuring is actually a political process, as argued here, it should allow for the broadest feasible debate on its terms by all the relevant stakeholders.

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<sup>6</sup> A case for a continuous mechanism for conversation between a government and its creditors, which could draw upon the Fund’s debt sustainability framework, is made in Herman (2003).

## IV

### The Sovereign Debt Restructuring Mechanism fails to solve the problem

The argument thus far is that debt crisis workouts are inescapably matters for negotiation among the relevant stakeholders rather than analytical solution, and that the court-supervised processes and guidelines that facilitate debt negotiations in a domestic context have only an informal, partial and political counterpart for the case of sovereign debt. When IMF proposed creating a Sovereign Debt Restructuring Mechanism (SDRM) in late 2001, it at first appeared that it was proposing a global bankruptcy court for governments. In fact, much less was being proposed, although it was far more than was politically acceptable.

The SDRM might have brought all the creditors of a government in external debt crisis together for a comprehensive set of debt negotiations. IMF did propose bringing all the classes of private creditors (commercial banks, bondholders, suppliers) into the SDRM and left open the question of whether bilateral government creditors would be incorporated as another class or would conduct a parallel negotiation.<sup>7</sup> As the Paris Club expressed the view that there was no need (desire) to change its operations, it was effectively dropped from the SDRM.<sup>8</sup>

Even restricted to private creditors, the IMF proposal would have been a major innovation. It proposed, in particular, creating a new international legal mechanism, the Sovereign Debt Dispute Resolution Forum (SDDRF), which would have had some of the responsibilities of an international

bankruptcy court. After being called upon by a defaulting government, it would have overseen the formation of different classes of the country's creditors into negotiating groups, validated the claims of individual creditors, and resolved disputes on the placement of individual creditors into the different classes. It would also have been able to prevent individual creditors from disrupting the SDRM process, although there was no agreement on whether SDDRF needed the ability to block legal actions in domestic courts against the debtor government (i.e., enforce a "stay on litigation") or whether a more limited set of powers would suffice.<sup>9</sup> Finally, it would have overseen creditor voting within each class, as on such matters as who should represent them in their negotiations or on the final agreement.

Each of the chosen group negotiators would then have been charged with developing with the government a precise restructuring proposal for their class of creditors. In addition, a steering committee of the various classes of creditors might have been formed to coordinate their various negotiations and check on the coherence of the overall financial package that emerged (one reason it would have been desirable to have the Paris Club inside the SDRM process). The government would then have formally proposed the component draft agreements to each class, which would have voted on them, all of this overseen by the SDDRF. The overall debt agreement would have been considered adopted when approved by 75% of the outstanding principal of registered claims in each class (IMF, 2002c, especially paragraphs 157-168 and 183-208).

While the negotiations would probably have begun with a draft IMF adjustment programme and a target overall level of debt relief, the steering committee would

<sup>7</sup> The SDRM was not intended to be used for HIPC's and so it was assumed that multilateral creditors would not be part of the debt negotiations *per se*.

<sup>8</sup> In its final report to the International Monetary and Financial Committee, the Fund staff left the exclusion of bilateral official claims in "square brackets", meaning not yet agreed and requiring further discussion (IMF, 2003a, paragraph 3d). Later in the year, the finance ministers of the Group of Seven (2003) decided that the Paris Club should modify its approach to restructuring, adopting an approach more comparable to that taken by private creditors when they agree to reduce the debt stock (as through bond swaps), in contrast to repeated traditional Paris Club rescheduling of debt servicing obligations.

<sup>9</sup> One alternative was the "hotchpot rule", which in essence would subtract from a successfully litigating creditor's share of a final group settlement whatever was won through its litigation, neutralizing its gain. Another proposal was to give SDDRF the power to enjoin enforcement of individual creditor court actions that would otherwise undermine the collective restructuring agreement (IMF, 2002c, paragraphs 124-141).

presumably have been able to raise questions in its own meetings about the overall adequacy of the programme and the envelope of presumed new multilateral and bilateral official financing.<sup>10</sup> The steering committee could conceivably even have reached the conclusion that the overall financial and policy package would not lead the country to a sustainable debt situation (owing to pessimistic export forecasts, say), in which case their post-agreement credits would have been of uncertain value, not to mention defeating the purpose of the debt restructuring exercise itself. In that case, the committee might have sought a way to urge the debtor government to reopen its discussions with IMF, and right here it may be seen that the closeness of IMF to the SDRM was a problem: where would that discussion have taken place? It does not appear that such concerns could have been addressed to the SDDRF, which was not intended to have a substantive role. Perhaps the only avenue open to the creditors would have been to reject the debt restructuring package by voting it down, ending the SDRM oversight. In other words, formalizing the debt renegotiation mechanism without a coherence mechanism would have omitted a necessary counterpart to the informal or even implicit iterations between government, creditors and IMF in the existing process.

In effect, IMF would have been “just behind the curtains” during the debtor government’s negotiations with the different classes of creditors, as it is today.<sup>11</sup> There was, however, an effort to create a space between IMF and the more legal side of SDRM. That is, the Fund proposed a complicated mechanism for selecting the SDDRF judges, by which relevant international organizations and professional associations would have advised the Managing Director of IMF on prospective candidates for a “selection panel” that would in turn have recommended names to him for selection as candidates for the pool of judges. The Managing Director would then have formed his list of candidates and submitted it for approval or rejection as a whole by the IMF Board of Governors (IMF, 2002c, paragraphs 233-244 and 2003a, paragraph 13a).

The reason such a tortuous process was proposed for selecting judges was tied to how IMF proposed

bringing the SDRM into being. As SDRM was presented as a “statutory” approach to sovereign debt restructuring, the idea was that it would become part of international law and have a number of mandatory features. The traditional way to create international law is through treaty, but IMF proposed a short cut, namely that SDRM be adopted as an amendment to the Fund’s Articles of Agreement, which is a treaty to which all Fund member countries are bound, whether or not they vote for the amendment. Needing to create the SDDRM in an amendment to the Fund’s Articles meant that it had to specify how to select the judges within IMF governance mechanisms. It would not have been feasible for IMF to engage or commit another international institution or body through an article of its own constitutional agreement. Were the SDRM to have been adopted by a stand-alone treaty, the process for selection of the SDDRF judges could have been designed in a more straightforward way. They could have been chosen by other credible international processes, utilizing say the United Nations or a separate governance body established under a free-standing SDRM treaty.

The question of how to design a statutory approach to sovereign debt restructuring was rendered moot by the April 2003 decision of the IMF’s ministerial committee. One may only speculate whether a “statutory approach” might have succeeded had it been approached differently, with IMF perceived as less at the centre or as striving less aggressively for quick closure on the process. Given how radical the reform was and how unprepared the international community had been to consider it, it might have been more fruitful first to open a process of dialogue and consensus-building among relevant stakeholders, followed later by formal negotiation, leading ultimately to a stand-alone treaty that could have gained the support of debtor as well as creditor governments. Given that there is an international consensus on the need for clear rules on insolvency and creditors’ rights in non-sovereign cases, in particular where there are cross-border issues (e.g., foreign obligations of a bankrupt firm, including taxes owed to foreign governments) and given the work that has been done on them in recent years, as in the United Nations Commission on International Trade Law (UNCITRAL) and the World Bank, it could have been agreed that global rules would also be helpful for cases of sovereign default. This is not to say that it would have been simple or quick to arrive at agreed processes, let alone that the world’s governments were ready to begin the consideration in 2002. A statutory approach

<sup>10</sup> As was the practice under the bank advisory committees in the 1980s, steering committees would probably have set up their own technical economic subcommittees to advise them.

<sup>11</sup> In fact, sometimes IMF takes a more forceful advocacy role on behalf of the government, as was the case in actively supporting Uruguay’s bond exchange offer in 2003 (IMF, 2003c, p. 204).

can take time, but be worth it, as the “Law of the Sea”, which took a decade to negotiate, seems to suggest.

An even bigger question is the degree to which IMF should be at the centre of any judicial-type process that might evolve in the future to better handle sovereign debt restructuring negotiations. As a public international institution, IMF should be mandated to always take independent positions in the best interest of its clients, which are ultimately the people in the borrowing countries. In practice, the Fund’s shareholders have diverse interests and the client governments of IMF are its minority shareholders. In other words, it is incumbent on the majority shareholders to protect the

independence of the Fund in striving for global financial stability (its original mandate) and development, a mandate it and its shareholders accepted in the Millennium Declaration (United Nations, 2000a) and the Monterrey Consensus (United Nations, 2002). Shareholders should thus avoid using IMF for domestic political or foreign policy purposes. Do they usually do this? Probably. Have they always done so? No. IMF is inescapably vulnerable to pressure from its major shareholders, who may in turn feel pressed to follow foreign policy, financial-sector or other agendas through influence over IMF. In short, a political institution is not likely to function well in a judicial role.

## V

### The limited contribution of collective action clauses

Although radical reform of the debt restructuring process is no longer being actively discussed in intergovernmental forums, a number of narrower reforms are being adopted through changes in specific clauses of sovereign bond contracts. The concern is to get the cooperation of individual bondholders when it is necessary to ease the financial terms of the bonds of a country in debt crisis. Specific clauses are needed because were holders of a bond issue free to participate or not in a restructuring of a bond, then any individual bondholder would have an incentive not to participate in the expectation that the participation of the others would free up enough financial resources to fully service the remaining original bonds. As a result, too many bondholders would try to be “free riders” and the restructuring would fail.

The solution to this “collective action” problem under New York law, which accounts for about 70% of international sovereign bonds, has been to require agreement of all bondholders to change any financial terms, although other clauses could be changed with specified majorities. This makes it extremely difficult to change the financial terms, which was a solution in earlier decades when most international commercial sovereign lending was by banks. That is, bonds generally continued to be serviced even when governments defaulted on their bank loans. Today, much more international lending is in the form of

bonds and a way was needed to facilitate collective action in cases of default.<sup>12</sup> Bonds issued in London under British law or in Japan already have the basic shape of the answer, as they do not require full consensus, but instead specify super-majorities needed to change the financial terms. If the specified majority agrees, the terms of the bond are changed for all holders, so there can be no holdouts.

The question thus became what, precisely, should be the content of the new “collective action clauses” (CACs)? Two sets of model clauses have been produced, one by a working group of the Group of Ten (G-10), endorsed by its ministers and governors (Group of Ten, 2003), and the other by seven major organizations from the international financial sector

<sup>12</sup> In fact, there is a mechanism to force a restructuring on an unwilling minority of bondholders on condition that the majority needed to change the non-financial terms of a bond agree. In this mechanism, called “exit consents”, holders of a defaulted bond agree to swap it for a new issue with easier terms for the borrower and at the same time change the non-financial terms of the old bond in such a way as to make it a much inferior security (e.g., repealing the waiver of sovereign immunity, without which governments cannot be taken to court for violating the terms of the contract). The new contract clauses would make this approach unnecessary and allow the issue to be addressed more directly and openly.



(EMTA and others, 2003).<sup>13</sup> There was no participation by the emerging-economy governments that issue sovereign bonds in either of these exercises. However, in a sense their views are beginning to be provided, *ex post facto*, through the precedents being established by bonds issued with CACs in 2003, as by Brazil, Mexico, South Africa and Uruguay.

The primary focus of attention has been on how big the majority should be to change the financial terms of a bond, and who should vote. The G-10 proposed that 75% of qualified bondholders be required for approval and the private-sector organizations proposed 85% approval plus no more than 10% explicitly objecting to the change.<sup>14</sup> In the new bond issues with CACs, all but Brazil specified the 75% voting majority, with Brazil accepting 85%. At this point it is not clear if the market practice will settle at 75% for the best credits and 85% for countries the market assesses as higher risk, or if 75% will become standard.

It is of course too early to tell how well these clauses will work in an actual crisis, since they are being introduced by countries that enjoy market access and are not in default. Presumably the clauses will facilitate restructuring of individual bond issues, should the need arise. Depending on how the clauses are specified, they may also facilitate “aggregation” of different bond issues (as in Uruguay’s CACs) and their treatment in one larger restructuring proposal. Other clauses are expected to deter legal action by “rogue creditors” or “vulture funds” that try to recoup the face value of distressed bonds through national courts.

The clauses may thus bring bonds more firmly within the nexus of restructurable sovereign debt and establish procedures that would serve, like the Paris and London Clubs, for a debt-crisis country to organize

negotiations with this class of its creditors. While sovereign bonds have been restructured in the past, if CACs make the process more assured and clear, it will be a useful contribution. It would also be valuable to the degree that it reduced uncertainty among bond investors and increased global demand for such bonds. Most observers, however, think the latter effect will be minimal, especially as a large number of bond investors do not “buy and hold” but are constantly moving securities into and out of their portfolios (indeed, one general question is how to make emerging-market debt more attractive to long-term investors).

Yet this is not the end of the story, as even the financial-sector organizations have acknowledged that CACs address only one part of the problem in restructuring sovereign debt. This can be seen in the draft Code of Conduct for Emerging Markets that they issued as part of their package of CAC materials. The code specifies how a government should organize and deal with all its different classes of creditors in a debt crisis, as well as how the private creditors, IMF and key governments should behave. The emphasis is on taking a comprehensive, transparent and cooperative approach. This includes engaging in regular dialogue with key investors and creditors through an advisory group, disclosing details regarding all outstanding financial obligations, including proposed restructurings as well as central aspects of economic policies and programmes, including all assumptions, commitments and targets involved in any IMF-supported programme, meeting with representatives of bondholders and other key creditors and negotiating promptly, in good faith, and directly with a broadly representative group of creditors, and seeking a comparable rescheduling from all official bilateral creditors.

Private creditors are told in the draft code not to expect an IMF bail-out, to maintain trade-credit lines and roll over short-term maturities, and to negotiate in good faith. The code also urges IMF and the G-10 to support the process and it proposes that a Joint Monitoring Group drawn from debtor and creditor governments, private investors and creditors, IMF and the Bank for International Settlements should review compliance with the code. As this observer reads the code, the private financial organizations are acknowledging the essential coherence problem that the SDRM was intended to address and that remains to be addressed.

<sup>13</sup> The seven are the Emerging Markets Creditors Association, the Emerging Markets Traders Association (EMTA), the Institute of International Finance, the International Primary Market Association, the International Securities Market Association, the Securities Industry Association and the Bond Market Association.

<sup>14</sup> Both sets of model clauses would exclude from voting any bonds held by the issuing government or controlled by it and reject the practice of requiring voting by a quorum of participants in a bondholders’ meeting, requiring instead that all bondholders be offered the chance to vote by written consent with no need for a formal meeting.

## VI

### Where do we go from here?

Clearly, a lot has happened in 2002 and 2003 regarding how sovereign debt should be treated in crisis situations. A comprehensive reform proposal, the SDRM, was developed but not accepted, while changes were made in bond contracts that will alter how bond debt will be handled in future crises. Meanwhile, considerable effort has also gone into trying to specify a practical framework for assessing debt sustainability in both low- and middle-income countries, which should help inform future debt workouts, as well as assist governments in avoiding unsustainable debt situations. And yet, much remains to be done.

The private sector's draft code of conduct, as noted above, identifies the problem, but it is only a first step toward the solution, which should be a prompt, effective and fair debt workout process. The code says, in essence, that mechanisms are needed to bring all the essential stakeholders into dialogue and negotiation in order to resolve a debt crisis once it has begun, and that various measures should be taken to prevent a deteriorating situation from becoming a crisis. It suggests some steps in that direction. These should be vetted in dialogues involving the debt-issuing countries themselves, whose representatives might have proposals of their own to make about norms for their own behaviour as well as for the creditors and international institutions.

The need recognized above for a comprehensive process also leaves open the question of who coordinates it. Formally, it is the government of the country in crisis itself and informally it may be IMF, and there are drawbacks to both, as neither is a neutral party (the former as debtor and the latter as creditor). Another possibility that may be considered is coordination by an independent facilitator or mediator, who might be drawn from a pre-selected list of individuals of high character and relevant experience, identified through an international process, who agree to serve in this capacity over a certain time period. The facilitator, once activated, could be supported by a small staff of lawyers and financial economists hired for the case on hand, which could include staff of IMF and the World Bank, and be serviced through the administrative offices of the International Court of Justice or another recognized independent legal body,

such as the United Nations Commission on International Trade Law.

At the United Nations, where mediation plays a large role in attempts to resolve political disputes, the Secretary-General has suggested considering it in addressing debt crises. He suggested "adding to the menu available to debtor countries a mechanism for the simultaneous, fair and full treatment of all of a country's foreign debt obligations, along with the provision of required new funds by the international community or other creditors. The use of such a mechanism, which could be invoked under specified conditions by a country already cooperating with IMF and other international financial institutions, would bring together committees representing bank creditors, bondholders, the Paris Club and other bilateral official creditors, as appropriate, plus the debtor Government" (United Nations, 2000b, paragraph 125).

A mediation service for sovereign debt negotiations has also been proposed as part of a broader Sovereign Debt Forum. As presented by Richard Gitlin<sup>15</sup> at a "side event" of the Monterrey Conference on Financing for Development, the Forum would serve two functions: first, it would seek to enhance sovereign debt as an asset class through discussions among market professionals of the design of different lending instruments, seeking to identify best practices; and second, it would facilitate sovereign debt restructuring when requested by a debtor government, helping with early communication among the relevant parties and in organizing the parties into groups, and making available a mediator from a standing panel.

Proposals such as these that attempt to facilitate the comprehensive treatment of sovereign debt in crisis countries seem to warrant a hearing. That they have not yet had one may reflect their weaknesses, but also possibly something about the agenda for debate. The proposals discussed in this paper were supported by the G-10 and its member States, staff of IMF and the World Bank, or private financial organizations. Developing and transition economy governments, in particular, seem mainly to have reacted to proposals, rather than initiate them. Could not officials from those

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<sup>15</sup> See Gitlin (2002).

countries, as well as the private sector and civil society, be drawn into these debates more effectively and at an earlier stage?

In fact, there are “Southern” initiatives. For example, in June 2003 the Conference of African Ministers of Finance, Planning and Economic Development endorsed the proposal of the United Nations Economic Commission for Africa (ECA) to organize an International Conference on African Debt Relief in early 2004. The ministers believed that “we must move swiftly to meet the challenge of defining the policies, instruments and initiatives that can

constitute the next step in the international community’s efforts to reduce Africa’s debt burden” (ECA, 2003, paragraph 28). African ministers are thus beginning to think beyond HIPC and find it more convenient to do so in a forum in Africa.

By the same token, it may also be fruitful to facilitate North-South and debtor-creditor discussions in more neutral and less consequential terrain than the forums of the Bretton Woods institutions. Involving all relevant stakeholders in a manner in which ideas might float more freely and discussion turn more innovative can only advance the dialogue.

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# Towards an integrated *vision for dealing* with instability and risk

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This article puts forth a hypothesis and a challenge. The hypothesis: structural change in the international economy and in the management of public policy has brought about changes in economic performance, affected employment, poverty, and equity and resulted in greater insecurity and uncertainty. The challenge: coping with this insecurity and uncertainty despite public policy's abandonment of its historical role and the lack of success thus far of the new approaches. This study points to the greater vulnerability today stemming from the labour market as well as asymmetries in trends in poverty and equity and examines how to address the inevitable social consequences of instability. It also proposes how to go about managing the instability that comes from the international sphere; adjusting macroeconomic policy to lessen the effects of the cycle; reconciling the need for labour flexibility with the protection required to cope with greater vulnerability; protecting those who are most vulnerable; and moving towards universal social security coverage.

# I

## Introduction

The purpose of this article is to analyse the linkages between macroeconomic policies, poverty and equity. I intend to describe the context in which these linkages are now emerging and to identify the policies that may prove most useful as well as to lay out what is known about the appropriateness of direct policies aimed at dealing with employment and poverty issues. In particular, I will examine the effects of the greater risk stemming from operating in a more open and interconnected international economy and how that situation is being addressed so as to avoid the negative effects that it may have for the most vulnerable groups.

This is an initial overview that may lead to subsequent research, both of concepts and of specific country situations.

My basic assumption is that for two decades Latin America, like other developing regions, has been affected by a worldwide paradigm shift involving a structural transformation in the international economy and in the management of economic policy. This structural transformation has also stemmed from the ideological change brought about by the collapse of real socialisms and from the pre-existing diversity of approaches.

This mutation has entailed a different type of economic functioning and social consequences characterized by greater insecurity, and its main manifestation has been in employment, as well as in levels of poverty and equity. Today Latin America is a less secure region socially and economically; this introduces greater uncertainty and generates tension that affects individuals, families and society as a whole.

This article first addresses the structural context and its characteristics. Second, it addresses prevailing macroeconomic policy and its linkages with the international context. Third, it identifies new developments in employment, poverty and equity. Subsequently, it explores policies in five dimensions. The first, very briefly, addresses ways to diminish the effects of the instability generated in the international economy. The second concerns how to prevent risk and thereby reduce its impact at the macroeconomic level. The third regards labour and employment policies that would allow risk to be addressed, thereby preventing, insuring against or compensating for its effects. The fourth is related to social policies. The fifth addresses some of the effects on social cohesion. Finally, I will suggest some components of an agenda for dealing with risk and instability that should be researched in greater depth.

# II

## The structural setting

This section describes international and national structural changes, and, in particular, identifies three processes: globalization, privatization and liberalization (Tokman,

2001). These processes have resulted in a different global economy and have laid down new rules of operation for national policies, in addition to, in fact, limiting available options. There is less autonomy for designing policies at the national level and options have become more restricted.

This new form of operating is characterized, in addition, by greater instability and its more rapid transmission. A more integrated global economy, with a greater importance for financial issues in a context of rapid change in information technology, is making instantaneous the transmission process of both benefits and costs.

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The macroeconomic regime under which countries operate is changing. Employment is more closely linked with external demand, and the ability to expand domestic demand or raise wages above productivity gains is limited, either by the need to finance them or by the impossibility of transferring them to prices without affecting competitiveness.

Available empirical evidence analysed by the World Bank (De Ferranti, Perry and others, 2000) shows that in Latin America long-term instability, as gauged by the volatility of gross domestic product, is twice that of industrialized countries and higher than that of the countries of South-East Asia. And instability in consumption is three times that of developed countries and is surpassed only by the countries of sub-Saharan Africa.

Moreover, unlike in industrialized countries, consumption volatility surpasses output volatility, which may be attributable to the lesser capacity to attenuate the effects of the cycle because of the existence of fewer assets, more limited possibilities of indebtedness and the less effective use of countercyclical policies.

It has also been found that the highest volatility was seen in the 1980s, whereas volatility in the 1990s was even lower than in the 1970s. This has led to the interpretation that increased instability and insecurity stemming from volatility was a short-lived episode—which does not preclude the need to introduce policies to reduce these phenomena. Nevertheless, a different reading of the same information allows us to arrive at distinct conclusions. First, the evolution of the 1990s does not include the effect of the Asian crisis after 1998. According to ECLAC (2000a), Latin America's average growth rate decreased from 3.8% from 1991 to 1997 to 1% from 1998 to 1999, and the variation coefficient increased by 50%, if we consider the entire decade,

including the effects of the crisis. Second, although volatility was lower in the 1990s than in the 1980s and slightly lower than in the 1970s, we should qualify the previous statement by noting that in Latin America volatility evolved differently than in the industrialized countries. The differential in GDP volatility increased by a factor of 2.5 in the 1980s and decreased by a factor of 1.7 in the 1990s, although still remaining above the level seen in the 1970s. Differences in consumption increased, and were 3.3 times higher than in industrialized countries, in comparison with a factor of 2.4 and 3.1 in the 1970s and 1980s, respectively. Instability was high and was not clearly decreasing, which generated insecurity, insofar as it was transmitted through the labour market to employment, income and wages. I will return to these effects below.

In addition, we should stress three issues stemming from the processes of change in the aforementioned economic context. Globalization puts a premium on the search for international competitiveness and favours the adoption of defensive strategies for competing—through the reduction of costs, particularly labour costs, and greater flexibility in work processes—in markets with fluctuating demand. Privatization places a greater responsibility for job creation on the private sector. This, in turn, requires closer linkages between economic and social policies, since—although economic incentives and stability are requirements for investment and growth—social legitimation and a perception of fair treatment are necessary for the sustainability of policies and the stability of the rules of the game. Liberalization means assigning greater importance to the role of markets as resource allocators and favours reduced government intervention. Although this may result in greater economic efficiency, it often leads to deregulation and a lack of protection, accompanied by greater social inequality.

### III

## Macroeconomic policy

The new macroeconomic regime and the policies guided by the different versions of the Washington Consensus tend to magnify vulnerability and to aggravate the instability and insecurity created by the transfer of real and financial volatility. Moreover, these policies tend

to be procyclical, thus exacerbating instability, and fail to play the role of stabilizers.

As is noted by ECLAC (2000b), Keynesian stability, which combined internal equilibrium (stable growth, low inflation and near full employment) with external

equilibrium (sustainability of the balance of payments), has given way to a focus on external macroeconomic equilibrium and inflation and, moreover, to the association of stability with low fiscal deficits and stable exchange rates. Nevertheless, these variables are not necessarily indicative of more stable growth or full employment.

This approach was introduced to Latin America in the 1980s and guided the process of economic reforms adopted to address the debt crisis. It stressed trade liberalization, privatization and deregulation, and the elements of this approach were known as the Washington Consensus, because they constituted the prescriptions favoured by the Bretton Woods financial institutions, based in Washington, D.C. The original version of the Consensus sought, above all, to re-establish macroeconomic equilibria through fiscal discipline; the rechanneling of government expenditure; tax reform; trade and financial liberalization; competitive, unified exchange rates; an opening to foreign investment; privatization; deregulation; and security of property rights.

It was not until the 1990s that, because of the unsatisfactory results, the Consensus was expanded to include a second generation of reforms that emphasized governance and sought to strengthen the State's capacity. Hence, the original list was expanded to include legal and political reforms, regulatory institutions, anti-corruption efforts, labour-market flexibility, financial rules and codes, the "prudent"

opening of the capital account, social safety nets and poverty reduction (Rodrik, 2001; Williamson, 1998).

The set of policies included in the different versions of the Consensus has tended to worsen real macroeconomic instability. Moreover, it has generally accentuated the business cycle and acted procyclically. This has been expressed in fiscal as well as monetary and credit policies, and in financial and exchange-rate policies. Tax receipts and fiscal spending evolve hand-in-hand with the cycle insofar as they expand when growth picks up and contract during recessions. The same occurs with monetary and credit policy, as the greater inflow of foreign capital during the growth phase allows private spending to increase and lowers the cost of credit; further, in the absence of prudent management, financial agents tend to increase the risk of their investments and to inflate the prices of the assets that back their loans. Financial "bubbles" often burst when, in the cyclical downturn, foreign capital changes direction, precipitating an inordinately deep contraction.

Instability, magnified by procyclical policies, entails costs resulting from greater uncertainty and leads to the underutilization of capacity together with microeconomic behaviour that discourages productive investment. This, in turn, exacts social costs of unemployment, poverty and income distribution because of the asymmetrical behaviour of the cycle: indicators contract quickly during a recession and are slow to react during the recovery.

## IV

### New developments

I will examine three areas where there have been new developments, stemming from the prevailing environment of instability: employment, poverty and income distribution.

It is through these mechanisms that volatility tends to spread, turning into economic insecurity and generating uncertainty among the population. In employment, three phenomena stand out: i) greater vulnerability to unemployment, ii) greater instability stemming from privatization, and iii) a change in the employment structure, which increases uncertainty because of the shift from formal to informal work,

privatization and the loss of job security. Lastly, we must also analyse the volatility and evolution of wages.

Greater vulnerability to unemployment results in more rapid variations in unemployment in response to fluctuations in the pace of economic activity, facilitated by labour reforms that have expanded the grounds for dismissing workers and reduced companies' adjustment times. Similarly, greater volatility has been accompanied by asymmetries that suggest a faster adjustment to contraction than to recovery, which in situations of recurrent short-term crises has meant rising unemployment rates that are stable at the higher level.

The average unemployment rate for the region has climbed steadily, rising —according to World Bank data— from 6.6% in the 1970s to 7.6% in the 1980s and 7.9% in the 1990s, without taking into account the effect of the crises of 1998-1999. Similarly, International Labour Organization (ILO) data show the same trend, with average rates rising from around 4% between 1950 and 1970 to approximately 7% during the 1980s and 1990s (Tokman and García, 1981; ILO, 2002).

This trend can be observed more clearly in figure 1, which includes unemployment and GDP growth rates between 1980 and 2002. In the 1980s, the debt crisis caused unemployment to rise from 1983 to 1985, reaching an average rate of 8.4%. Thereafter, there was a gradual reduction until 1992, by when it had declined to between 5% and 6%. Subsequently, the unemployment rate once again began to rise, despite high GDP growth, and was stoked by three outbreaks of crisis in the 1990s: the “tequila” effect in 1995, the “Asian crisis” in 1998-1999, and the current crisis, in 2001 and 2002. Although the economic downturn brought about by the 1980s debt crisis was much more severe than that of any of the crises of the 1990s, unemployment rose much more quickly in the 1990s and tended to stabilize at higher levels following the crises, increasing from 7.9% to 8.9%, and then to the current rate of 9.3%.

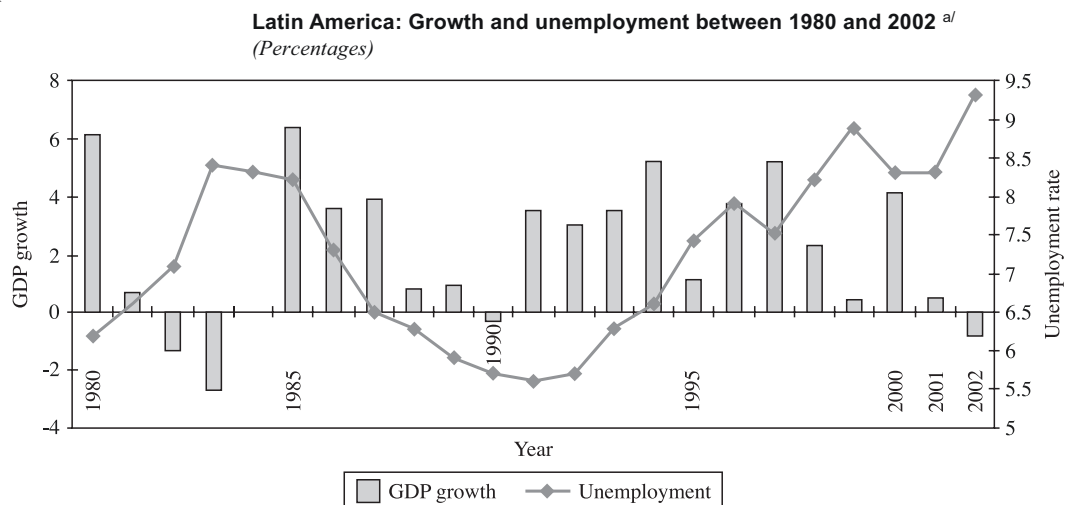
The greater vulnerability to unemployment is partly related to the success in stabilizing prices, since low

inflation rates in the 1990s made real wages more downwardly inflexible and shifted the burden of adjustment to employment. In addition, this was encouraged by the change in regulations governing dismissals and the introduction of more flexible labour contracts. Similarly, labour turnover is higher than in the countries of the Organisation for Economic Co-operation and Development (OECD), where 24.5% of all job holders have less than two years’ seniority, compared with 38.1% in Latin America. The same is true of average job retention, which in the OECD is 10.5 years, in contrast with 7.6 years in Latin America. The higher unemployment propensity transfers instability to workers and their families and contributes to uncertainty not only among those who are directly affected but, according to available surveys, among a larger group, because of the fear the employed have of losing their job.

The second factor that contributes to greater instability is privatization. The transfer of job creation from the public to the private sector entails a change in the type of jobs. The protected, stable public-sector positions have been replaced with less permanent and protected positions. This does not necessarily mean lower wages, but it does imply a need to adapt to higher turnover in the labour market.

The public sector’s share of non-farm employment contracted from 15.5% to 13.4% between 1990 and 2001. From a longer-term perspective, this indicates that the public sector did not contribute to net job

FIGURE 1



Source: ILO, 2002.

<sup>a/</sup> Weighted averages.

creation in the 1990s, whereas in the 1980s it created 15 of every 100 new jobs. Part of the reduction in government employment translated into higher unemployment and the rest into private-sector employment. Some persons found work in modern sectors, but most moved into informal activities in microenterprises or into own-account employment. Government jobs have been—and in most countries continue to be—characterized by a statutory regime with contractual job security and full social protection, which tends to partly compensate for wages lower than those in the private sector. The transfer towards the private sector and the State's smaller role as an employer, which has differential effects on older groups, in the first case, and on younger groups, in the second, means a loss of protection for those who find work. Net income will not necessarily be lower, but income and employment volatility will be higher. Hence, instability and uncertainty increase.

The third phenomenon affects the structure of employment and is the result of the shift from formal to informal work, the shift of employment from goods-producing sectors to services, and the loss of protection. This increased share of employment in the informal sector means that a significant and growing proportion of new jobs are created in this sector. Between 1990 and 2001, two of every three jobs were generated in the informal sector, whose share of non-farm employment increased from 42.8% to 46.3% in that period. Forty-seven of every 100 new informal positions were non-professional, own-account employment or corresponded to unpaid family work; 34 were created by microenterprises; and the rest (19) corresponded to domestic service.

Employment in the services sector also grew. The proportion of job holders in services grew from 71.2% to 74.6% of non-farm employees between 1990 and 2001. Ninety-six of every 100 new jobs during this period were generated in the services sector. More than half (54%) of the new jobs were created in community and personal services, 25.4% in commerce and 6.6% in transportation. Lastly, the third process was the loss of protection, as the share of workers without contracts or with temporary contracts that did not include access to labour and social protection increased. Forty-three of every 100 new jobs created did not offer access to social security services.

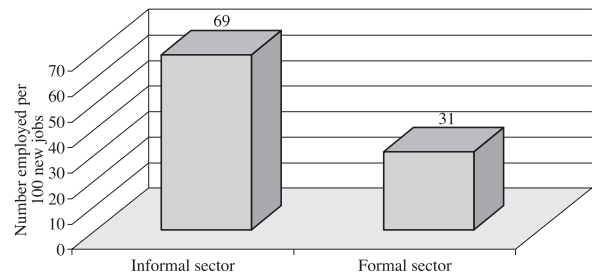
These three processes are not independent. On the contrary: they overlap, since informal employment is concentrated in services and results in a lack of protection. Services, in turn, are concentrated in low-

productivity activities because services associated with globalization and modernization, although increasingly important, are still not significant. The lack of protection overlaps with the first two processes. Together, they produce greater instability and uncertainty by increasing

FIGURE 2

### Latin America: Job creation by occupational stratum, 1990-2001

(Percentages)

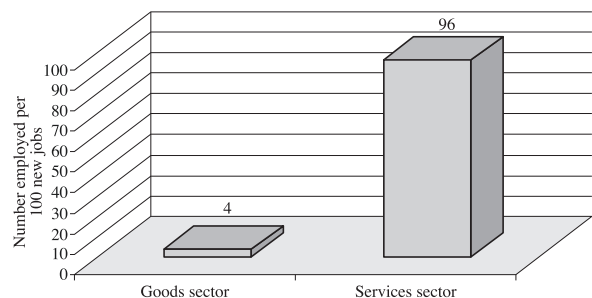


Source: ILO, 2002.

FIGURE 3

### Latin America: Job creation by branch of economic activity, 1990-2001

(Percentages)

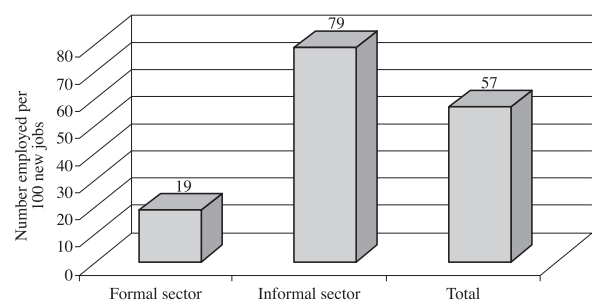


Source: ILO, 2002.

FIGURE 4

### Latin America: Creation of wage-earning jobs paying social security contributions, 1990-2001

(Percentages)



Source: ILO, 2002.



the relative importance of jobs of shorter duration and with less labour and social protection.

Lastly, we will consider wage volatility to determine if it contributed to increasing uncertainty. An examination of the evolution of real wages over the last three decades shows that average volatility in Latin America in the 1980s was twice that of the 1970s. Nevertheless, in the 1990s wage volatility returned to levels similar to those of the 1970s (De Ferranti, Perry and others, 2000). To a large degree this is explained by the significant, widespread reduction of inflation rates from 1990 to 1999. In particular, volatility declined significantly in countries that went from very high inflation rates (including some with hyperinflation) to moderate or low rates, such as Argentina, Bolivia, Chile, Brazil and Peru. Still, the lower volatility of real wages translated into greater downward inflexibility and transferred the heaviest burden of the adjustment to employment, with the consequent increase in unemployment.

The volatility of real wages, however, does not entirely explain the behaviour of employment income, because of limitations in the scope of the available information, as well as conceptual limitations. Wage calculations do not generally include income from employment at small enterprises or earned by workers without contracts or own-account workers. As noted above, in these categories the share of employment has increased, and income from this type of employment is generally less stable than are wages. Their inclusion might modify existing conclusions. Partial information presented by ECLAC (2000a) shows that the income differences between skilled and non-skilled workers increased in the 1990s. Between 1990 and 1997 the gap between the labour income of skilled workers and wages in the formal sector increased 24%, and the disparity between the income of skilled workers and wages in informal enterprises rose 28%. In 1997, wages of skilled workers were 2.3 times higher than those of workers in the formal sector and 3.6 higher than those in the informal sector.

Disparities in average wages between the formal and informal sectors increased by 10% in the same period, and wages in the formal sector were 2.1 times higher than those in the informal sector. Although the wage disparities between the two sectors did not change significantly in the 1990s, wages in the formal sector were 1.5 times higher than those in the informal sector. The disparity between the formal and informal sectors tended to increase in the countries that grew the fastest and to decrease in countries in which the average

income of the urban employed fell, particularly in countries where wages contracted more in the formal sector than in the informal sector. In countries with low growth, the maintenance or worsening of inequality resulted less from an increase in this disparity than from rising unemployment, declining wages and the greater capacity of the highest-income groups to defend their share of total income.

The second issue related to instability is poverty. Two observations, among others, are in order. First, poverty has followed the variations of the cycle, increasing in the 1980s, during the downturn, and declining in the 1990s, during the recovery, but without returning to initial levels. The percentage of households below the poverty line fell between 1990 and 1999 from 41% to 35.3%, still remaining above the 34.7% recorded in 1980. The percentage of indigent decreased from 17.7% to 13.9% in the same period, an improvement on the level of 15% recorded in 1980. The number of poor increased by around 11 million, even as the number of indigent fell by 4 million (ECLAC, 2001a). Instability generated not only more poor poverty, but new poverty as well.

Labour-market income is very important for households, accounting for approximately 80% of their total income. Transfers represent only 13%. In addition, heads of household continue to contribute around 70% of household income, although the contributions of other household members have risen, particularly those of women (ECLAC, 2002). This indicates that the labour market is the main transmitter of instability, while social policies, though important, play a limited role. It also attests to the importance of the incorporation of new income earners as a factor for households to overcome poverty, which, in turn, depends on employment and income opportunities.

The second observation refers to the impact of crises on the poor. Although it is proven that the effect of growth (or the lack thereof) on the poor is similar to its effect on average income earners, the intensity of crises has a differential effect, since crises of a greater magnitude have a greater impact on the poor (De Ferranti, Perry and others, 2000). This is because the poor have more limited defence mechanisms, which forces them to reduce their consumption levels or liquidate assets to cope with the longest or most intense crises.

Three observations are in order on the third area, income distribution. First, unlike poverty, income distribution has proven to be asymmetrical and less elastic in relation to changes in growth. On the one hand,



it worsens during crises but does not improve during the recovery. From 1960 to 1980, income concentration as measured by the Gini coefficient had declined from 0.53 to 0.50 on average for 13 countries of Latin America. Starting in 1980, the coefficient rose, to 0.53 in 1990 and to 0.54 around 1999. Moreover, recovery tends to benefit the highest income groups the most. Whereas the income of the wealthiest decile doubled between 1980 and 2000, that of the poorest 40% remained constant (ILO, 2002). Between 60% and 90% of inequality can be explained by the high share of income received by the top decile (IDB, 1999). Consequently, over time growth has become less effective as an instrument to reduce poverty. In the 1960s, poverty decreased 0.98% for each additional percentage point of growth; in the 1970s, it decreased 0.69%; and in the 1990s it declined 0.12% (ILO, 2002). Unlike what occurred with poverty, in almost no country of the region did the conditions of inequality improve in the 1990s. Only Panama and Uruguay showed an improvement in equity.

The second observation is that middle-income groups have been affected the most, even more than the poor. As noted, in countries where income distribution worsened, the gap between middle-income groups, on the one hand, and high-income and low-income groups, on the other, widened more because of the growth of the top decile than the decline of the lowest stratum. Indeed, this growing inequality coincided with a reduction in poverty, except in Uruguay. The result was a loss of income share by the middle strata, which garnered a much smaller portion

of the increase in income, due to the worsening employment situation. The middle strata suffered the combined effect of the labour market and the change in social policy. Social policy has increasingly targeted the poorest, thereby becoming more efficient but at the expense of the middle groups, given the difficulty of transferring income from the upper groups to others (Klein and Tokman, 2000; ECLAC, 2001a).

Lastly, we need to analyse the system's loss of social cohesion. Divergent tensions have been generated by change, but they generally tend to fragment rather than to unify the social structure. Tensions are created by changes in occupational directions and the greater mobility in the labour market. Some of these directions are upward, but others are not. Undoubtedly, they are all accompanied by greater instability. Traditional processes of upward mobility are also weakened—some, because they have run their course; others, by changes in direction: in particular, the urbanization and modernization of the employment structure. This is also accompanied by social policy's reduced levelling capacity; the narrowing of this capacity has benefited the poorest but it has had a negative effect on the middle groups. This holds for the acquisition of public services (which were once free and are now the object of transactions), the differentiation in the quality of these services (due to the effect of privatization of the education and health sectors), or the cancellation of cross-subsidization between groups of different income levels and similar needs (health) (Klein and Tokman, 2000; Tokman 1998).

# V

## Towards risk management

In this section, I will review the spaces for intervention at different levels. The convergence of economic and ideological approaches has led to a certain determinism in the acceptance of social results that cause dissatisfaction because of the greater uncertainty and the worsening levels of poverty and equity.

This is, in fact, largely the result of the new form of operation within the context of globalization, which limits for autonomy and imposes higher penalties mistakes resulting from the trial-and-error process inherent in economic policy-making.

Moreover, little attention has been paid to a series of views that, without becoming an alternative model of operation, introduce not insignificant nuances in the use of policy tools. These innovative proposals, generally coming from academia, have increasingly penetrated governments and international institutions within a context of dissatisfaction with the results thus far obtained.<sup>1</sup> Hence, a space conducive to innovation has opened up.

It is also important to differentiate between possibilities for intervention according to the objectives sought. First, there is an attempt to reduce risk through preventative policies that can be promoted at either the international or the national level, and, at the national level, to promote macroeconomic policies as well as more specific policies in the field of labour regulation. Moreover, risk can also be dealt with by trying to mitigate its potential damage through insurance or social-protection policies. Lastly, when risk becomes fact those who are affected certainly deserve compensation through specific measures to provide them with income or employment or to allow their productive re-entry into the labour market.

I will address this task on four levels:

- The first refers to managing instability coming from the international sphere.
- The second deals with the most suitable macroeconomic policy for mitigating the effects of external shocks.
- The third relates to labour policies—increasingly the space for seeking flexibility in response to the

accepted rigidity of macroeconomic policies and those that operate in the international sphere.

- The fourth examines social policies and, in particular, protection policies, with a view to compensating the most vulnerable groups and to “shielding” programmes essential for future development.

### 1. Policies to regulate international fluctuations

External volatility has traditionally been transmitted through both trade and financing. However, the lowering of trade barriers and the liberalization of capital markets have accelerated the spread of instability and deepened its effects, since its contagion among countries magnifies the procyclical nature of capital flows.

Nonetheless, there are risk-insurance and diversification instruments that allow the intensity of external shocks to be lessened and, occasionally, their effects to be distributed over time.

Countries may act preventatively to avoid allowing economic booms, associated with the entry of significant amounts of capital, to lead to eventual crises. Prudential crisis management should be implemented through a suitable liability policy and by avoiding significant price disequilibria, particularly in the exchange rate and the prices of assets. Similarly, a foreign-exchange system allowing for a certain stability and the flexibility necessary to adapt to external financial shocks may help and may also avoid the maintenance of reserves that serve as “self-insurance” during crises.

Disruptions in the terms of trade are insured against through hedging and futures transactions and, fundamentally, through the diversification of the structure of trade. Such possibilities are, however, limited in Latin America by the high concentration of exports in a few products, generally natural resources, and by the recurring volatility in the prices of those products.

Capital movements, increasingly important, have also proven to be a source of volatility and generally reinforce, rather than mitigate, the intensity of the cycle. The development of capital markets and the stronger integration of domestic markets into the international

<sup>1</sup> Among others, see ECLAC (2000b), Ffrench-Davis (1999), Krugman (1999) and Stiglitz (2002).

market might permit the introduction of risk-diversification instruments scarcely available today in most Latin American countries. Related to this topic, the degree of opening of the capital market continues to be debated, since experiences have been mixed and regulating capital flows has allowed for a decrease in short-term fluctuations.

At the international level, an emergency financing body should be created to serve as the lender of last resort. This role could be played by the International Monetary Fund (IMF), through its new Contingency Credit Line, which makes it possible to deal with problems stemming from financial contagion and which has not yet been used by any country. Similarly, the expansion of resources available through the temporary issue of special drawing rights would contribute to providing needed liquidity in times of crisis. Moreover, given the alternative of insolvency, it would be useful to have multilateral rules for foreign-debt renegotiation. Although moratoriums can prove costly, a mechanism agreed to at this level would allow liquidity and solvency crises to be addressed and permit private-sector participation in finding a solution, thereby distributing the costs and risks in a more balanced manner between debtors and creditors. Such a mechanism could complement rather than replace the provision of emergency funds (ECLAC, 2001b).

In the new globalization context, additional topics that may require intervention are emerging, less to diminish fluctuations than to regulate competition among countries. In particular, labour issues have been doubly important, as determinants of competitiveness and because of the effects that increased trade can have on employment, poverty and equity.

At the multilateral level, the search for a regulation mechanism to avoid unfair competition or “social dumping” has made significant headway. The possibility of linking labour and trade conditions in the event of a breach of fundamental labour principles and rights has been abandoned at the multilateral level, at least temporarily, given the risk of its arbitrary use as a trade-protection mechanism; and a universal agreement has been forged at the ILO based on the adoption of a “common minimum labour standard” of fundamental rights at the workplace. Every country involved in international trade has committed to abide by this agreement (Tokman, 1999 and 2002b).

In addition, a variety of innovative mechanisms has been introduced in free trade and economic integration agreements, particularly in Latin America. Some, such as the Southern Common Market

(Mercosur), have adopted the non-hiring model and moral sanctions regarding a set of labour rights, thereby making progress *vis-à-vis* the multilateral mechanism on rights coverage with the inclusion of labour conditions and possible measures to correct violations. Others, such as the agreements between countries of the region and those of North America —(the North American Free Trade Agreement (NAFTA), the United States-Chile Free Trade Agreement—, incorporate monetary sanctions, which could lead to the suspension of the benefits of trade agreements in the event of recurrent violations of the labour laws in effect in each country intended to protect workers’ fundamental rights.

## 2. Macroeconomic policy with a countercyclical focus

Conventional macroeconomic policies have stressed maintaining equilibria, even in a markedly more volatile context. In many cases, this means that the procyclical nature that policies assume when attempts are made to achieve equilibrium regardless of the stage of the cycle is compounded by the loss of autonomy stemming from greater integration into the international economy. This often triggers an inordinate contraction, with negative effects on employment and income.

As noted by Ocampo,<sup>2</sup> although macroeconomic policy has distinct national traits, controlling volatility is facilitated through the combination of three sets of policies:

- First, through consistent and flexible macroeconomic policies that avoid disequilibria in the most relevant prices and the accumulation of large debts.
- Second, through a system of regulation and prudential supervision with a clear countercyclical focus.
- Lastly, through a “liability policy” to manage the maturity of the country’s debts.

In particular, for the purposes of this study, we should stress four important aspects, among others. The first refers to fiscal policy, which, due to the exclusive commitment to equilibrium maintenance, is a powerful tool that intensifies fluctuations. Today, by contrast, it is increasingly recognized that the management of this policy must aim to balance the public sector’s structural position, more than its short-term position, which

<sup>2</sup> See Ocampo (2001) and ECLAC (2000b).

necessitates incorporating a longer-term perspective of fundamental parameters (Marcel, Tokman and others, 2001a and 2001b). This allows fiscal policy to serve as a stabilizer, lessening the danger of increasing disequilibria when short-term criteria are used.

The second aspect refers to the management of foreign-exchange policy and its relationship with monetary policy. In Latin America, particularly before the Asian crisis, exchange rates have been set, or their adjustments have been delayed, as a tool for reining in inflation. The results in this area were successful, particularly taking into account the high-inflation tradition of the countries of the region. Exchange-rate lag or rigidity meant shifting the burden of adjustment to monetary policy, in a context in which more restrictive fiscal policies faced greater political obstacles, particularly after the substantial efforts undertaken to achieve fiscal equilibrium. This triggered an excessive rise in interest rates and an inordinate economic contraction, resulting in higher unemployment.<sup>3</sup> The combination of instruments is difficult to predetermine and must respond, as indicated, to specific national traits. Nevertheless, for the instruments to be effective, they must have an appropriate mixture of flexibility and credibility.

A third aspect is the redistributive effects of changes in relative prices. Macroeconomic-policy decisions affect key prices and create winners and losers, leading, therefore, to changes in the distribution not only of income but, also, of assets. Macroeconomic policies that translate into price stability generally favour the poorest segments of the population. However, if authorities resort to a combination of a fixed or lagging exchange rate with excessively tight fiscal and monetary policies, that benefit may be offset by diminished income and well-being stemming from higher unemployment and lower social spending. In addition, real wages turn downwardly inflexible in response to successful efforts to control inflation, because wage changes require to be affected nominal

wages. The labour-market adjustment consequently tends to be one of quantity more than of price, therefore bringing higher unemployment with changes in income distribution between insiders and outsiders.

A fourth aspect is related to the positive correlation that exists —according to Rodrik (1998)— between openness and the size of government, as measured by government spending. Contrary to expectations, openness is accompanied by more market, but also by more government, suggesting a complementarity between the two. The cause appears to lie in the need to provide social security in countries whose degree of openness makes them more exposed to risk and therefore creates a greater need to mitigate it. This conclusion, based on empirical evidence compared across countries, is also supported by specific examples of changes in the degree of integration into the global economy accompanied by higher government spending, particularly in social compensation programmes.

This occurred in the smaller European countries (Austria, the Netherlands and Sweden) that complemented trade liberalization with investment programmes, incomes policies, subsidies and transfers. The same occurred in Spain in 1986, before its entry into the European Union, and in Chile, in 1990, following the Pinochet military government. In the United States, as well, programmes were introduced that raised unemployment benefits and provided subsidies to train and relocate workers displaced by imports as a consequence of multilateral liberalization in the framework of the General Agreement on Tariffs and Trade (GATT) or, more recently, NAFTA. Moreover, in the past, not only was the growth of the welfare state in Europe accompanied by a period of rapid economic growth, but the two processes mutually reinforced one another, because of the stabilizing effect of social transfers during the cycle and social security's role in helping workers adjust to economic change.

### 3. Microeconomic policies for innovation and growth

The proper management of macroeconomic policy, particularly with a countercyclical focus during downturns, is a necessary but insufficient condition for ensuring the return to growth and its permanence over time. And sustained growth is a requirement for creating jobs and reducing poverty. Consequently, microeconomic policies must be adopted that promote innovation, learning and complementarities among sectors so as to raise productivity, create economies of scale and

<sup>3</sup> Between 1993 and 2001, the real effective exchange rate for imports to Latin America appreciated by an average of 8%, whereas annual inflation declined from close to 900% to 6% between 1993 and 2001. In the meantime, real annual interest rates rose to 21% in 1998. Only since late 1998, and particularly in Brazil in 1999, have corrections begun to be made to foreign-exchange policy and has devaluation allowed interest rates to be adjusted downward. The magnitude of the disequilibrium is illustrated by the cases of Argentina and Brazil, countries in which real lending rates reached 28% and 48%, respectively, between 2001 and 2002 (ECLAC, 2002).

reinforce the system's ability to compete (Katz and Cimoli, 2001; ECLAC 2000b).

I will reflect on two important issues related to this topic. The first is the need to invest in providing the workforce with know-how and skills. There has been a process of industrial restructuring accompanied by increased concentration; in the first stage, it has translated into the destruction of jobs but subsequently it has allowed productivity levels to recover through the incorporation of workers with a higher level of expertise. However, labour and human-resources policies have lagged behind, insofar as they were envisioned for an initial phase of restructuring with declining employment and do not provide workers with the skills required for the technology incorporated in a subsequent stage. Thus, a discrepancy arises between the carrying out of the adjustment and the creation of the conditions of stability needed to encourage investment in know-how. I will return to this in the next section.

The second issue concerns small enterprises, which provide a high proportion of employment but at the same time account for the lowest levels of protection and job security. Their behaviour in the cycle, contrary to what occurs with larger enterprises, is countercyclical; however, the manner in which their offsetting role in downturns is financed affects their ability to contribute to the recovery. The presence of less formalized labour relations and of an often-paternalistic management style frequently leads to the overprotection of employment in small enterprises. Small enterprises thus contribute to offsetting the negative effect of recession. However, once the crisis has passed, their future depends on how they finance worker retention. If, as is usually the case, they resort to high-cost indebtedness,<sup>4</sup> their net worth and financial situation will affect their capacity to recover; in many cases this will cause enterprises to close. It is during this period, when the rate of growth and job creation of larger companies begins to recover, that small enterprises eliminate jobs. This behaviour, which affects unemployment, tends to transfer greater risk to workers and employers who lack suitable social or insurance protection systems allowing them to remain shielded during the downturn of the business cycle.

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<sup>4</sup> The cost of such indebtedness is high because of small enterprises' limited access to capital markets, and it is further increased by rising interest rates during adjustments.

#### **4. Labour policies: between labour stability and unemployment protection**

Labour policies may be analysed from two standpoints: first, as an important determinant of international competitiveness, and, second, with regard to direct policies for insuring against the risk of unemployment.

Regarding the first issue, the prevailing approach has stressed the search for flexibility and the reduction of costs, particularly labour costs, as ways to raise competitiveness (Tokman, 2001). The labour policies currently in effect in most countries were designed to provide a relatively high level of employment stability. Labour legislation enacted regulations to diminish the risk of dismissal and protected workers' jobs; the rationale for such legislation was mainly based on the need to provide protection and create a substitute for insurance, which markets could not furnish. The cost of these regulations has been greater rigidity and the higher cost of dismissals. Legislation was adapted to existing economic conditions, but it gradually became inadequate for the present-day world, characterized by stronger macroeconomic fluctuations, high unemployment, rapid structural change, great uncertainty and the increasing heterogeneity of occupations and workers.

This explains the growing popularity of the defensive strategy, which has ushered in a generation of labour reforms that seek to make individual employment contracts and labour conditions more flexible by reducing exit costs and introducing new, non-standard contracts as an alternative to the prevailing open-ended contract. In addition, the reforms of the individual contract are combined with the decentralization of collective bargaining, particularly in countries where negotiations are still conducted at a level higher than the company, as a means to ensure that wages are set according to productivity levels.

These reforms have resulted in increased flexibility at the expense of greater instability and less protection. The lack of protection is the consequence of both the emergence of a large contingent of workers without contracts and —although legislation did not eliminate protections in the case of non-standard contracts— of compliance with legal obligations that is, in practice, lower. Employment instability, in turn, affected incentives for investing in training and the developments of worker skills. Both factors caused the defensive strategy to run its course.

In response to the demise of the defensive strategy, in the most developed countries and in large companies



an alternative strategy emerged, which assigns priority to raising productivity, to innovation and to learning. The strategy requires investment in know-how, which in turn requires a certain degree of employment stability: employment instability does not provide employers with an incentive to invest in training, since they cannot be certain that they will reap the benefits of future productivity gains, and workers lack motivation to devote time and effort to learning, since they realize that their employment is temporary. The strategy also requires labour relations based on cooperation more than on confrontation, which have a greater chance of emerging in a framework of respect for worker rights, of opportunities for dialogue and of participation in the eventual benefits.

These strategic alternatives also affect incentives for attracting foreign investment. In recent studies, the OECD (2000) confirms that transnational capital moves more in search of skilled workers and higher productivity than of cheap labour, since low-wage workers lack the capacity to ensure the quality of the products they make. Obviously, each strategic option has a different effect on employment, poverty and degrees of equity.

The biggest challenge is to re-establish the balance between stability and flexibility, so as to facilitate the functioning of the economy in a context that requires continuous adaptation but where workers need stability, not only to diminish the uncertainty that affects them, but, in addition, to help raise productivity. In labour regulations, partly as a reaction to the excessive use of defensive strategies, innovations have emerged that attempt to balance needs for stability with needs for flexibility.

The first innovation has been to limit the scope of flexible contracts, reducing, in compensation, the rigidity of open-ended contracts. This has been done in a variety of ways: from legal limitations on the use in non-standard contracts (Spain, 1997, and Argentina, 1998 and 2000), along with the simplification of the judicial process for dismissals, in the first case, and reducing the cost and extending the probationary period, in the second, or placing conditions on the scope of such contracts in collective bargaining (Brazil, 1998).

In the Netherlands, another alternative has been the introduction of more flexible, part-time contracts, allowing the massive entry of women into the labour market and the reduction of unemployment. However, once a renewal period has elapsed, these contracts acquire conditions of protection and stability similar

to those of long-term contracts. Moreover, the differences between the conditions of part-time contracts and those of customary contracts were diminished through business organizations' acceptance of the reduction of the normal workweek to 35 hours (Visser and Hemerijck, 1997). This modality has also been incorporated into the recent reform in Chile, although without agreement of the parties concerned. Another alternative has been the introduction of "negotiated flexibility", by which workers and employers agree on the characteristics and degrees of flexibility and on the compensation that they consider necessary. In some cases, the terms they agree to may even replace terms of the labour legislation.

A second innovation consists in mitigating the risk of unemployment through insurance. To this end, unemployment insurance has been established that attenuates, to an extent that varies from one country to the next, the loss of income during periods of unemployment. International experience shows that insurance serves as a substitute for protection through labour regulations: greater coverage of unemployment insurance correlates with less protection at the workplace.

Unemployment insurance was initially envisioned for dealing with short-lived, mild cyclical unemployment. It was designed to protect the income of the least-skilled workers in standardized production systems, families with a single income earner, and centralized, collective bargaining that allows wage structure compression. In addition, it was combined with social welfare, to cover risks of lost work income resulting from involuntary unemployment and to ensure a minimum level of subsistence. This public social security was justified by the consideration that information asymmetries in the market did not allow private insurance to operate efficiently.

Despite widespread adoption of unemployment insurance in the most developed countries, reforms are increasingly being introduced to make eligibility criteria more stringent and reduce benefits, which has been justified both with the need to reduce the potential negative effects and with the amount of resources needed to address the changing nature of unemployment. Among the potential distortions in the labour market linked to this insurance, we should mention an "unemployment trap", in which insurance income discourages the jobless from seeking employment, and a "poverty trap", which discourages low-wage employed workers from increasing their efforts in their work. Both factors may increase the

reserve wage and affect the equilibrium unemployment rate.

Moreover, unemployment has risen to high levels, its duration has increased and it affects less-educated workers. Collective bargaining has increasingly incorporated personalized wage incentives, which introduce tension in criteria based on “equal pay for equal work”, and households have gone from one income earner to two. In the European Union countries, average unemployment rates have reached 10%; half the unemployed have been out of work for more than one year; and half are located on the lower rungs of the educational scale. In the United Kingdom, for example, single-income households represented 70% of all households in the early 1960s but declined to 30% in the 1990s, while the proportion of two-income households rose from 28% to 55%. In this context, with a different type of unemployment, the need for resources has multiplied, coverage periods have had to be lengthened, and, for their part, families have created their own self-insurance mechanisms by incorporating secondary labour into the labour market (Buti, Frank and Pench, 2000). Reforms in European countries have focused on adjusting social policies to new demographic and economic conditions and seeking alternative systems, such as the transition from pay-as-you-go pension systems to contributory systems, the replacement of unemployment benefits with employment subsidies and changes in the design of social protection to increase its efficiency.

The coverage of unemployment insurance in developing countries and, in particular, in Latin America has been limited both by the structure of the labour market as well as by the insufficiency of resources to fund such insurance. Unemployment rates at times reach significant levels and coexist with informal employment that accounts for more than half of urban employment. This means that grey areas are abundant.

Latin American countries generally devote a small proportion of their resources to active and passive labour policies. The share of GDP devoted to such policies is one-seventh that of the European Union countries and, unlike in the latter, a larger amount is appropriated for active than for passive policies. On average, the EU allocates 2.15% of GDP to financing unemployment protection, whereas Brazil, the Latin American country that devotes the most resources to this item, earmarks 0.19%. Argentina, Brazil, Chile, Ecuador, Uruguay and Venezuela have unemployment insurance or social assistance. These countries' insurance is contributory and is funded with tripartite

contributions (worker, employer and government). It provides specific benefits, lasting between three and twelve months. Some countries include the obligation to receive training or accept job offers as a mechanism to reduce moral hazard. Coverage in these countries has been limited—in the years of the greatest use, it has not surpassed 7% of the unemployed (Argentina in 1994)—and insurance has resisted adaptation to the evolution of the cycle.

In addition to the negligible significance of unemployment-protection mechanisms, labour legislation has protected employment stability through high severance payments and considerable exit costs for cancelling labour contracts. An innovation within this context, introduced in Brazil, Colombia, Panama and Peru, has been to separate severance payments from companies' general reserves and to deposit them into individual accounts in workers' names. In some cases, insurance can be used not only for receiving funds in the event of dismissal but also to obtain advance payments for housing or other needs up to a given amount. Even when the cost of dismissals is not affected, the availability of a progressively large amount of resources makes decision-making easier and obviates the labour conflicts often generated over severance-payment collection (ILO, 2001).

The need to introduce greater flexibility in the labour market so as to adapt to new demands has led, as mentioned above, to reducing the cost of dismissing workers and to limiting severance payments. This process has not been accompanied by the expansion of unemployment insurance or protection, which would allow the equation to be balanced.

Nonetheless, the topic has gained ascendance on the region's labour agenda and today several countries are exploring this path. The most recent case is Chile, which in 2001 approved the creation of an unemployment-insurance system that breaks ground vis-à-vis current arrangements. It introduced a mixed system consisting of mandatory savings in (worker-owned) Individual Unemployment Accounts and a Solidarity Fund that operates as complementary funding for the payment of severance benefits. There is joint responsibility, in the sense that workers must contribute to the funding, and pressure on the solidarity component is reduced by requiring that workers exhaust their own funds before resorting to the Solidarity Fund. Funding is provided workers (0.6%), employers (2.4%, including 1.6% earmarked to the individual account and the rest to the Fund) and the public treasury (there is a complementary fiscal contribution). The arrangement



is innovative because workers may receive funds accumulated not only in the event of dismissal but also in the event of voluntary resignation, thereby creating an incentive for voluntary mobility; moreover, workers are not penalized with the loss of their accumulated funds. The cost of severance payments is reduced by counting employer contributions into individual severance accounts against such payments. Another pioneering element of the arrangement is the coexistence of a solidarity component for workers unable to save enough funds to qualify for the minimum level of unemployment benefits; and, lastly, its management is innovative, in that it introduces a single private operator to manage accumulated funds, rather than the usual multiple operators who specialize in managing specific risks.

### **5. Social protection for unemployment compensation**

Once the employment risk becomes a reality, the unemployed must receive compensation through labour and social policies. The available instruments are generally publicly supported job creation programmes, subsidies on hiring, training and cash transfers.

Job creation programmes are carried out directly by the public sector or through the private sector, whereas subsidies are transferred to the private sector, in response to the perception that the cost of hiring is at a level that impedes hiring. Training operates by reinforcing or adapting workers' employability, and transfers compensate for the lack of income of the poorest families.

Direct job creation with public support has proven to be one of the tools receiving the best evaluations, because of its rapid effect on unemployment and because it constitutes an appropriate vehicle for expressing political will to deal with unemployment. Still, jobs of this type face a series of limitations. Expanding job-creation programmes has proven difficult because of the high resource requirements. International experience shows that government support for such jobs does not exceed between 2% to 3% of GDP. These programmes tend to be procyclical, since when more jobs need to be created, there are greater limitations on fiscal resources. Moreover, they are envisioned as temporary, yet they tend to perpetuate because of the spread of clientelism. Lastly, these programmes are of limited economic efficacy, because of "leakages" in their execution: only one of every three dollars allocated reaches beneficiaries

(Hicks and Wodon, 2000; Holzmann and Jorgensen, 1999).

Training programmes also receive favourable evaluations because they help workers adapt to new needs, and because they facilitate the entry of young workers into the labour market. Hiring subsidies may play an important role, particularly because they transfer the responsibility of hiring to employers, thereby reducing clientelism, and because they generate longer-term employment for at least some of the beneficiaries, who continue on the job once the subsidy has run out. There is, however, a risk that in economic downturns these subsidies will be used to formalize a relationship with non-contracted workers already employed at a company, thereby reducing the contribution to job creation, and that in upturns they will prove redundant, because the hiring might have taken place even with unsubsidized wages.

Measures taken in response to unemployment are designed more to hedge risk than to mitigate poverty. Even so, addressing unemployment in countries that lack insurance with satisfactory coverage and where households still depend to a significant degree on the income of the head of household does contribute to mitigating poverty. From a standpoint of economic efficiency, government intervention aimed at providing social security to cover risks that private insurance cannot cover is fully justified because of the weaknesses present in this type of market. The existence of adverse selection and moral hazard constitutes an argument against private insurance, as does the difficulty of predicting the number of winners and losers in given periods or the probabilities that the risks being insured against will materialize.

Social security with universal coverage may also have important cost advantages over insurance based on private competition. Since private insurance is generally premised on establishing individual risk premiums, social security may include redistributive elements between good and bad risks, or subsidies between insureds with different payment capacities. This is important, given the recent trend of mixed insurance models in pensions as well as in health.

Although recent social security reforms seek to strengthen complementarities between public and private systems, at the same time they permit the coexistence of different logics—and, in the case of health, of different qualities of service—which segment the covered population and limit cross-subsidization between rich and poor. One system operates according to market logic and attends to the population with the

ability to pay. The lowest-income population is excluded and must be covered by the public sector, through general fiscal resources rather than with the transfers that could be made among insureds or from current to future insureds, in the case of pensions. As social security benefits become entitlements, they also turn into contingent liabilities and generate fiscal obligations. In Chile, Titelman and Uthoff (2002) project an increase in the current fiscal deficit to cover minimum and welfare pensions from 0.4% to 1.5% of GDP once the present generations retire. Also in Chile, Arenas de Mesa and Hernández (2002) calculate that, to cover the value of minimum pensions, the fiscal deficit will increase from the current 0.1% to 1.3% of GDP by 2037. The estimated deficit depends on demographic factors, on the percentage of the active population covered, on replacement rates and on required contributions. In Bolivia the current shortfall is estimated at 2.3% of GDP, and in countries such as Mexico and El Salvador it is estimated at approximately 1.8% (Titelman and Uthoff, 2002). The magnitude of the unfunded fiscal responsibility leads these authors to recommend maintaining a redistributive public pillar that will make it possible to contribute to offsetting the disequilibria and mitigating future fiscal crises.

In some cases, the public sector's participation as a provider in mixed systems becomes necessary, but in all cases it is needed as guarantor of systemic solidarity. This implies recognizing social security as a right whose access must be guaranteed for the entire population. However, contrary to the vision prevailing until a few decades ago, coverage should expand gradually, to reconcile benefits with countries' real financial possibilities. Mixed systems are also promoted for reasons of economic efficiency in benefits and resource management. At the same time there needs to be a single system for all, and the State must assume the responsibility of ensuring that this will be respected. Minimum pensions need to be provided to persons who did not attain a sufficient density of contributions during their working lives, and in health, those whose income level precluded them from financing their stages of greater risk (whether from age or catastrophic illnesses) must be protected. At the same time, similar qualities of benefits, defined independent from the provider or user in question, must be ensured. There is, then, a

responsibility to properly regulate social security beyond mere financial responsibility.

Lastly, when social spending especially targeting the poor is required to act as a complement of self-insurance and as a substitute for market insurance, it should behave countercyclically. In recessions, when saving is hindered or market insurance cannot cover the broad effects of the contraction, the expansion of social spending, particularly targeted social spending, should play that countercyclical role.

Experience shows that this is not easy to do. Even when social spending increases in phases of economic growth, during downturns social spending per poor person tends to decline. This underscores a dual policy task. First, it is important to control pressure in favour of expanding outlays in growth periods, because such pressure undermines the possibility of maintaining spending in the long term. Second, in the downturn it is necessary to protect or "shield" targeted spending, since the effect of economic contraction is reinforced with the increased number of poor requiring assistance.

In general, we observe more appropriate behaviour *vis-à-vis* risk by poor households than by governments. Households tend to boost self-insurance, saving both in good times and in tighter periods. When recessions are brief or mild and are perceived as transitory, households resort to assets such as family labour to offset declining income. Only in deep, long recessions do they drastically cut back investment in health and education. Governments, by contrast, are hard-pressed to apply such a policy, not because of a lack of information or expertise but because of the interaction of political and economic restrictions that hamper the establishment of reserves in boom periods with which to weather periods of crisis. Some options to which governments can resort include introducing an insurance component to cover risks such as unemployment and social security, or borrowing on financial markets in downturns and repaying in good periods. Unfortunately, as we saw above, the current times are not propitious to the availability of funds for such purposes, since capital markets also behave procyclically. Therefore, designing a well-conceived and funded national system is, in fact, the only policy alternative.

# VI

## Tensions in society

The current functioning of the economy is associated with an increase in instability and in the risks to be managed by individuals and their families. The effect transcends individual levels and is transferred to society as a whole. Tensions thereby rise, because employment as well as income instability generates uncertainty and because the dynamic and degree of social cohesion are altered. This section will focus on two dimensions of the problem. First, these factors affect the process of social homogenization, which in the past has been the vehicle for achieving individual and family progress in a context of greater cohesion. Moreover, they also affect the mechanisms that determine the possibilities of avoiding an intergenerational transmission of poverty.

### 1. Labour mobility and homogenization

In the past, homogenization took place through upward mobility and, in particular, through the growth of the middle groups. In the current economic setting, however, it is these groups that have borne the brunt of changing labour markets and social policy.

Middle groups were affected by government downsizing, which left many of their members unemployed. For those who managed to re-enter the labour market in the private sector, the transition from one sector to another meant trading permanent, protected jobs affording stability and protection for less stable jobs with less protection, although not necessarily a lower income. Those who kept their government employment saw a reduction in their wages and a decline in their status, given the ideological depreciation suffered by the civil service.

As public employees they had, moreover, enjoyed social protection as part of their employment. Along with other middle groups, they had been the main beneficiaries of universal and free access to public goods and services. With the loss of employment came a loss of protection, and the privatization of public services also entailed paying for such services. It is not surprising, then, that middle groups have been harmed the most by the changing income distribution during the two last decades.

To a certain extent, such a decline is inherent to the logic according to which the new model, based on

privatization, operates, with the consequent effects on public employment and on the provision of public goods and services. The objective, then, is to contribute to macroeconomic equilibria in fiscal matters and in prices and, at the same time, to increase economic and distributive efficacy in the allocation of social spending. The result should be faster growth and less poverty. In successful countries, this has been the case, but the cost has been borne by the middle groups. This is because income transfers take place between those groups and the poor, since the higher-income groups are “protected” to avoid harming their productive capacity.

The results have been more efficient governments, more balanced economies, a more efficacious allocation of social spending, and a decrease in the number of poor; but also a less equal income distribution and a society in which the gaps between rich and poor are not decreasing and social integration is hampered.

### 2. Intergenerational transmission of poverty

Related to poverty are the mechanisms by which poverty is transmitted between generations. Poor families suffer unemployment to a greater extent than do wealthy ones; fewer of their members participate in the labour market; and, therefore, they are more exposed to the risk of a loss of income. Even in successful experiences of job growth, poverty diminishes but access to new jobs is discriminatory. Greater employment opportunities for poor families come entirely from informal jobs, whereas for the higher-income strata formal positions predominate. Informal jobs have few educational and skills requirements, while formal positions generally require university or technical studies. Children belonging to poor households exhibit a higher rate of illiteracy and fewer years of schooling; and, despite the expansion of educational coverage, there continue to be large differences between the quality of the schools attended by them and those attended by their peers from higher-income families. This disparity has even been magnified by the growing segmentation into state and private schools in which the latter, because of the type of students they attract, enjoy more adequate funding (Tokman, 2002a).

A vicious circle is thus created in which the inequality of opportunities skews access to employment. Young people from poor households, with a greater need for income and less human capital, enter the labour market prematurely. Those who find work are mainly employed in positions with lower productivity and income and with few prospects for developing a career. Consequently,

poverty tends to be transmitted from one generation to the next. Ensuring universal access to education and training, compensating for the additional family income that might be lost when individuals do not enter the labour market, and reducing differences in the quality of education are requirements for creating more equitable opportunities of access to employment.

## VII

### **Towards a comprehensive vision for dealing with risk and instability**

This study has analysed possible responses, at different levels, to situations of instability and high risk. For a comprehensive vision of how to address such situations we need to review, from a historic and paradigmatic perspective, the various systems that have been used for that purpose.

The most widespread social-protection model during much of the twentieth century dovetailed with a Keynesian conception of full employment and the creation of the welfare state. In a closed economy, full employment regulated by domestic demand made employment the main source of income. Jobs were stable and protected by labour legislation intended to ensure both employment stability, with contractual conditions that made dismissals expensive, as well as a balance in negotiation powers between workers and employers. For those who only managed an imperfect participation in the labour market, the welfare state incorporated systemic social protection aimed at shielding workers at different stages of their lives (in old age, through pensions) and vis-à-vis risks during their working lives (unemployment, disability, accidents and death). In particular, unemployment insurance was introduced to protect active workers who became unemployed. Given the general model according to which the economy operated, the loss of employment could only be temporary and, in general, affect a small proportion of workers. The objective of this insurance was, then, to cover those who were exposed to a risk with a low probability of occurrence and limited effects (Standing, 2000; Buti, Franco and Pench, 2000).

This model of social protection operated in much of the developed world, although with different

nuances, which translated, in particular, into different combinations of labour regulations and unemployment insurance; as well as into the orientation of protection outside the workplace: focus on non-working ages (the young and old) or on the working life, both to compensate for the loss of employment (insurance) and to shorten the waiting time between one job and the next (active policies). The model did this successfully, achieving not only security but a harmonic social development in keeping with cohesion and equilibrium in social relations. It was also a source of inspiration for most Latin American countries that, although imperfectly, advanced under the same guidelines.

However, the final decades of the twentieth century demonstrated the flaws of the system, including in developed countries, which led to its questioning and to the beginning of successive reforms. This questioning became more pronounced with the change in the economic system and, indeed, with the abandonment of the objective of full employment, compounded by the need for flexibilization to operate in more volatile markets and the financial difficulties of covering more unemployed, and for longer periods, than originally foreseen. The reforms in European countries, contrary to what is often stated, have led not to a dismantling of the system but to its re-examination with a view to reducing benefits, tightening the eligibility criteria and introducing additional criteria to shorten employment-search periods.

Latin American countries once again followed the evolution of the developed countries, but magnifying both the problems and the solutions. The original design could be incorporated only imperfectly,

because, although the low unemployment levels in the region could be considered consistent with a full-employment equilibrium, the prevailing underemployment was of a large magnitude and long standing. Indeed, protection for the unemployed means a differentiation with the underemployed that is not only arbitrary but also ineffective in terms of income compensation. Similarly, funding difficulties mean that protection is focused on employment stability and that it covers unemployment, with limited coverage, in only a few countries. This has not prevented the welfare state from being questioned even more intensely than in Europe. The shift in the orientation of the economic model towards openness and integration into the international economy—which took place over a very short period and was accompanied by macroeconomic policies inspired in the Washington Consensus and aimed at achieving external account and price equilibrium—transfers the demand for flexibility to the labour markets, thereby magnifying insecurity.

The labour reforms that have been introduced have brought greater instability and a lack of protection in the workplace; hence, social protection (including unemployment insurance) faces an impossible task in a framework of financial restriction. In this context, the questioning has intensified, and the search for full employment and for systemic social protection has been bypassed, though not always explicitly. In short, the welfare state has been forsaken. However, no alternative to replace it has emerged.

How are we to deal with the situation? Although completely answering this question is beyond the possibilities of this study, I would like to make six observations to contribute to the discussion.

First is the recognition that we cannot address the current situation with nostalgia for the past. Returning to the past is neither viable nor desirable. It is not in the interest of Latin American countries to once again close their economies or to put a straightjacket on their markets—nor could they do so.

Second, I suggest reaffirming full employment as an objective. This proposal might be considered prescriptive and unrealistic, but it may contribute to strengthening the political will to pursue such an objective, which is an initial step to committing to devising policies to this end. Moreover, it establishes a social obligation vis-à-vis this objective that entails

responsibilities shared by government and society as a whole, particularly employers.

Third, I suggest revising the concept of full employment to include the new types of employment that have emerged. No longer should this concept solely be associated with stable employment and permanent protection but it should also include occupations that, although less stable and affording less protection, are able to provide sufficient income for dealing with the greater risks that they entail. However, steps must be taken to ensure that these occupations comply at least with minimum quality requirements regarding fundamental labour rights and labour conditions.

Fourth, the strategy of dealing with risk and instability once persons and families have been affected is an implicit acceptance that little can be done to modify the magnitude of the risk; in addition, it strains the tasks of protection and insurance, making them very difficult to address. The idea is to reduce risk, first by acting on the levels closest to the source of instability that offer possibilities for influencing results. Adopting policies aimed at diminishing volatility from the outside, countercyclical macroeconomic policies and more suitable microeconomic policies would make it possible to contribute to risk reduction.

Fifth, the way in which progress towards market flexibility is made, particularly in the labour market, is also crucial because it determines the degree of instability and risk to be dealt with by workers and their families. Labour reforms that seek flexibilization, either by making it easier to dismiss workers or by eliminating protections, increase the demands for protection outside the labour market. Therefore, reconciling flexibilization with protection would diminish the need for unemployment insurance, and, at the same time, contribute to the creation of new jobs.

Lastly, protection systems that permit universal basic minimums to be guaranteed should be established. This might be done in a variety of ways: income transfers, unemployment insurance or other occupational hazard insurance. The effectiveness of pension and health-care coverage should also be examined. There is a public responsibility to ensure broad coverage, but, given the public-private nature of most of those systems today, it is becoming necessary to examine the two components as a whole so as to ensure universal coverage and the necessary solidarity for such coverage to be affordable.



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# The role of insurance

## *in social protection*

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Social protection systems have to cope with large discrepancies between the financing needed to cover demand and the resources actually available. For this reason, it is necessary for any reform proposal to include elements of cost restraint as well as measures to increase the population coverage of systems. Efficiency and solidarity must improve together if progress is to be made towards universality of benefits. Any reform strategy needs to consider not only the financial constraints imposed by the macroeconomy, but also the heavy drain on financial resources and the effects on the fiscal accounts that may result from whatever scheme is chosen owing to the amount and volume of benefits, the limited scope for funding them out of contributions, and the need for redistributive financing. This article looks at various approaches to social security finance reform, involving new and different public-private mixes.



# I

## Introduction

Demand for health services and pensions (and for other social protection benefits) is now growing considerably faster than actual gross domestic product (GDP) or any forecast for GDP, however optimistic. This has led to mounting tension between the financial requirements of social security and the capacity of countries to provide the resources demanded.

This being so, reform of social protection systems has come to be a core part of the political agenda in most countries. In the region, the need for change results simultaneously from two considerations. First, there are the failings and difficulties that have beset social protection (social insurance and the public sector) in the past and the new challenges raised by demographic and epidemiological trends and technological developments. Second, these internal challenges are being compounded by globalization, which the countries of the region are now undergoing and which has affected the nature of the protection system and its ability to respond to the external shocks faced by our economies. In particular, the financial volatility of the 1990s has had major repercussions for the countries' business cycles, increasing social risk and the need for social protection mechanisms (Rodrik, 2001; ECLAC, 2001a). Companies have adapted to greater economic instability by adjusting their workforces, and this has resulted in growing insecurity of employment at the national level, weakening the contribution base of social protection systems.<sup>1</sup>

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<sup>1</sup> Specifically, this paper will consider how risks relating to health, old age, disability and death are covered. It does not deal with unemployment and social exclusion risks, except as they affect people's ability to participate in contributory social protection systems. The average unemployment rate in Latin America rose by more than four percentage points in the 1990s; according to ECLAC estimates, seven of every 10 jobs were generated in the informal sector in that decade.

From the outset, social protection systems have been regarded as social entitlements. Their objectives include combating poverty, discrimination and social risks (United Nations, 2002). Reforms intended to modernize these systems still have to meet three historic challenges: i) universalizing social security; ii) reducing marked inequities in service access and quality, and iii) improving the social return on the resources allocated to these activities by changing the way they are managed and assigned. Reforms need to be designed to strengthen social security systems so that the insurance structure can be adapted to the new needs and realities of society and the economy, particularly changes in labour markets.

In this article, it will be argued that the heterogeneity of labour markets and the volatility and uncertainty of the economic environment have increased social risk. Social security systems need to combine insurance and saving schemes with redistribution and solidarity. Since any progress towards universal coverage and guaranteed benefits means greater financial demands on the State, reforms need to succeed in reconciling social and fiscal responsibilities. One example of these demands is the growth of contingent liabilities generated in the public sector, requiring rules for financing them over time (Arenas de Mesa and Guzmán, 2003). If it is to support social policies, macroeconomic policy should not only be concerned with smoothing out business cycles but should also generate fiscal expenditure rules that include scope for countercyclical public spending compatible with the basis of this policy. The design of the public-private mix will have a significant influence on the efficiency and equity of the social security system, and thence on the demands made on the treasury. In the case of health systems, an inappropriate public-private mix leads to problems of risk selection and exclusion. In the case of pensions, while the need to replace defined-benefit systems with defined-contribution ones is recognized, the design of reform options has major implications for the costs that have to be met by the treasury during the transition and for the financing sources of solidarity pension schemes for those unable to contribute.

This article will also look at the new context in which social security systems will have to operate, review the particular health and pension reforms carried

out by countries in the region, and analyse the policy challenges arising from the reform process.

## II

### Public-sector social spending

The countries of the region have made a considerable commitment to social spending. As a percentage of GDP, spending rose from 10.4% in 1990-1991 to 14.1% in 2000-2001, showing a modestly countercyclical tendency (table 1). A significant effort has also been made with health spending. The region spends an average of six to seven percentage points of GDP, a figure that is quite close to the world average and not very far from the nine or ten points seen in developed countries.<sup>2</sup>

The increase of almost four percentage points of GDP in social spending ought to improve risk coverage for the population, particularly the poorest. This is not inevitable, however, because spending is not always concentrated on the lowest-income sectors of society (table 2).

In the experience of the region, it has proved very difficult to target social spending on the poorest and/or widen population coverage. For this reason, social policy outcomes have not matched spending efforts. Systems of social security (and of social protection in general) have been confronted simultaneously with strong growth in the demand for services and a rise in their production costs. This growth in financing requirements is occurring in the midst of increased economic volatility and greater fiscal constraints in the countries, so that reform proposals need to aim simultaneously at improving efficiency and management techniques to hold down costs and at strengthening solidarity mechanisms, owing to the precarious levels of so many people's incomes.

Among the factors determining the demand for social security services, those associated with the business cycle can be distinguished from those deriving

from more structural causes. The former are closely related to the economic growth rate and to macroeconomic and social policies, while the latter reflect demographic, epidemiological and technological aspects.

One of the main ways in which the business cycle affects social security systems is through its impact on the labour market. For as long as social security systems in the Latin American countries follow the Bismarckian model, access to social protection systems will be determined by the contractual status of the worker, and contribution schemes will thus depend on the dynamics of the labour market. Changes in this market affect not just the demand for social services, but also the financing sources used to meet this demand. With current schemes, for example, the fact that most work is done in the informal sector has limited the scope for universalizing social security and using wage contributions as a principal source of financing.

Latin American labour markets did not develop favourably in the 1990s or the first two years of the 2000s. The key developments have been the way in which the countries' economies have adjusted to external shocks, and the weakness and volatility of growth rates, making it difficult to create jobs for an economically active population that is growing as a result of demographic inertia and increased participation by women in the workforce. In fact, macroeconomic policy in most of the region's countries has been strongly procyclical, while its capacity for using fiscal, monetary and exchange-rate instruments to adjust to real or financial shocks from outside has diminished. Consequently, the burden of adjustment has fallen increasingly on labour markets in the form of higher levels of unemployment and informal working. Vulnerability to unemployment has thus increased, as has job turnover (a characteristic of private-sector employment), and a larger proportion of workers are

<sup>2</sup> Although the difference is significant in per capita terms: while the developed countries spend almost US\$ 1,800 per capita per year, the countries of the region spend only US\$ 370. In general, analysts find it hard to distinguish how much of this goes on investment and how much on current spending.

TABLE 1

**Latin America: Total public-sector social spending**  
(Percentages of GDP)

	1990-1991	1992-1993	1994-1995	1996-1997	1998-1999	2000-2001
Latin America	10.4	11.3	12.0	12.3	13.1	14.1
Argentina	19.3	20.1	21.1	20.0	20.8	21.6
Bolivia	...	...	12.4	1.6	16.3	17.9
Brazil	18.1	17.7	19.3	17.3	19.3	18.8
Chile	11.7	12.4	12.3	13.0	14.7	16.0
Colombia	6.8	8.1	11.5	15.3	14.0	13.6
Costa Rica	15.6	15.2	15.8	16.8	16.4	18.2
Ecuador	5.5	5.8	7.4	8.2	8.1	8.8
El Salvador	...	3.1	3.4	3.8	4.1	4.2
Guatemala	3.4	4.1	4.1	4.3	6.0	6.2
Honduras	7.9	8.1	7.8	7.2	7.5	10.0
Mexico	6.5	8.1	8.8	8.5	9.2	9.8
Nicaragua	11.1	10.9	12.2	11.3	13.0	13.2
Panama	18.6	19.5	19.8	20.9	21.6	25.5
Paraguay	3.1	6.2	7.0	8.0	8.5	8.5
Peru	4.0	5.3	6.7	7.1	7.7	8.0
Dominican Rep.	4.3	5.9	6.1	6.0	6.6	7.6
Uruguay	16.9	18.9	20.3	21.3	22.8	23.5
Venezuela	8.5	8.9	7.6	8.3	8.4	11.3

Source: ECLAC, on the basis of official figures.

TABLE 2

**Latin America: Change in per capita social spending, and percentage going to the first quintile**  
(Percentages)

Country	Education		Health and nutrition		Social security		Housing, water, sanitation and others	
	Percentage increase over decade	Percentage going to poorest 20%	Percentage increase over decade	Percentage going to poorest 20%	Percentage increase over decade	Percentage going to poorest 20%	Percentage increase over decade	Percentage going to poorest 20%
Average	37.2	27.9	25.2	26.9	37.4	15.0	20.4	22.1
Argentina	41.0	32.5	28.7	38.7	20.9	11.0	30.1	20.5
Brazil <sup>b</sup>	13.9	30.1	4.9	31.5	36.6	42.0	-10.3	30.8
Chile	56.9	34.0	52.4	30.9	39.5	4.0	48.9	37.3
Colombia	48.3	21.4	77.9	17.5	54.5	...	53.8	...
Costa Rica	29.4	15.7	17.1	2.7	31.0	7.1	1.6	...
Guatemala	40.0	...	36.4	...	25.0	...	93.3	...
Honduras	-3.1	...	-25.0	...	...	...	40.0	...
Mexico	37.7	...	-28.0	...	89.3	...	35.0	...
Nicaragua	15.4	...	0.0	...	...	...	50.0	...
Panama	36.9	...	2.6	...	13.4	...	-26.2	...
Paraguay	66.7	...	73.7	...	54.3	...	-300.0	...
Peru	54.8	...	60.5	...	71.3	...	78.6	...
Dominican Rep.	70.2	...	51.6	...	62.5	...	16.1	...
Uruguay	40.4	33.2	18.2	34.9	46.4	12.4	51.5	14.1
Venezuela	7.9	...	-16.3	...	5.3	...	-100.0	...

Source: ECLAC (2001b), tables IV.5 and IV.7.

<sup>a</sup> The percentage increases are estimated in relation to the value at the end of the period.

<sup>b</sup> The education figures are for primary only. Social security includes only pensions. The estimate is for consolidated social spending.

TABLE 3

**Latin America and the Caribbean: Urban unemployment<sup>a</sup>**  
(Average annual rates)

	Area	1990	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Latin America and the Caribbean		5.8	6.6	7.5	7.5	8.0	7.6	8.1	8.9	8.4	8.4	9.0
Simple average for 22 countries		...	10.0	9.5	10.1	10.5	9.9	9.7	10.3	10.1	10.3	
<i>Latin America</i>												
Argentina	UA	7.4	9.6	11.5	17.5	17.2	14.9	12.9	14.3	15.1	17.4	19.7
Bolivia	DC	7.3	5.8	3.1	3.6	3.8	4.4	6.1	8.0	7.5	8.5	
Brazil	6MA	4.3	5.4	5.1	4.6	5.4	5.7	7.6	7.6	7.1	6.2	7.1
Chile	NT	7.8	6.5	7.8	7.4	6.4	6.1	6.4	9.8	9.2	9.1	9.0
Colombia	7MA	10.5	8.6	8.9	8.8	11.2	12.4	15.3	19.4	17.2	18.2	17.6
Costa Rica	UT	5.4	4.0	4.3	5.7	6.6	5.9	5.4	6.2	5.3	5.8	6.8
Cuba	NT	...	6.2	6.7	7.9	7.6	7.0	6.6	6.0	5.5	4.1	3.5
Ecuador	UT	6.1	8.9	7.8	7.7	10.4	9.3	11.5	15.1	14.1	10.4	8.6
El Salvador	UT	10.0	8.1	7.0	7.0	7.5	7.5	7.6	6.9	6.5	7.0	7.1
Guatemala	NT	6.3	2.6	3.5	3.9	5.2	5.1	3.8	...	...	...	...
Honduras	UT	7.8	7.0	4.0	5.6	6.5	5.8	5.2	5.3	...	6.3	6.2
Mexico	UA	2.7	3.4	3.7	6.2	5.5	3.7	3.2	2.5	2.2	2.5	2.7
Nicaragua	NT	7.6	17.8	17.1	16.9	16.0	14.3	13.2	10.7	9.8	10.7	12.9
Panama	MR	20.0	15.6	16.0	16.6	16.9	15.5	15.2	14.0	15.2	16.9	16.1
Paraguay	UT	6.6	5.1	4.4	5.3	8.2	7.1	6.6	9.4	10.0	10.8	...
Peru	ML	8.3	9.9	8.8	8.2	8.0	9.2	8.5	9.2	8.5	9.3	9.4
Dominican Rep.	NT	...	19.9	16.0	15.8	16.5	15.9	14.3	13.8	13.9	15.6	16.1
Uruguay	UT	8.5	8.3	9.2	10.3	11.9	11.5	10.1	11.3	13.6	15.3	17.0
Venezuela	NT	10.4	6.6	8.7	10.3	11.8	11.4	11.3	14.9	14.0	13.4	15.9
<i>Caribbean</i>												
Barbados	NT	14.7	24.3	21.9	19.7	15.6	14.5	12.3	10.4	9.2	9.9	10.5
Jamaica	NT	15.3	16.3	15.4	16.2	16.0	16.5	15.5	15.7	15.5	15.0	...
Trinidad and Tobago	NT	20.1	19.8	18.4	17.2	16.2	15.0	14.2	13.1	12.8	11.1	11.0

Source: ECLAC (2002a).

<sup>a</sup> UA: urban areas; NT: national total; DC: departmental capitals; MA: metropolitan areas; UT: urban total; ML: metropolitan Lima; MR: metropolitan region. The simple averages for 1999, 2000 and 2001 are adjusted to compensate for missing data. The figures for all Latin America in the first halves of 2001 and 2002 are weighted averages for the countries with information available.

not covered for risks, because many jobs are informal ones that provide no social protection.<sup>3</sup>

The average unemployment rate in the region showed a rising trend in the 1990s, peaking at 9% in 2002. Similarly, employment-output elasticity has tended

to decline, so that higher growth rates are required to generate new jobs. Along with this fall in elasticity, job security and benefits have tended to deteriorate owing to the growing importance of informal employment (table 4). According to estimates by the International Labour Organization (ILO), seven out of every ten jobs were generated in the informal sector in the 1990s.

All this means that unemployment insurance will play an important role in the future, not only as a stabilizer of internal income but as an important source of financing for any social security scheme.<sup>4</sup>

<sup>3</sup> Tokman (2003) identifies three factors that were instrumental in shifting the burden of adjustment on to the labour market: i) the reforms introduced to extend the grounds for dismissal and reduce adjustment times for companies, compounded by asymmetries that placed a large part of the economic adjustment burden on employment; ii) privatization, which has helped shift job creation from the public to the private sector, and iii) a shift in the private-sector employment structure towards informal and service-sector jobs and those without contracts or social protection.

<sup>4</sup> This paper will not concern itself with unemployment risk except insofar as it limits the extension of social protection cover. See Velásquez (2003) for a recent analysis of unemployment insurance.

TABLE 4

**Latin America: Structure  
of non-agricultural employment**  
(Percentages)

	Total	Employed			
		Informal sector		Formal sector	
		1990	2001	1990	2001
Latin America	100	42.8	46.3	57.2	53.7
Argentina	100	52.0	45.7	48.0	54.3
Brazil	100	40.6	46.0	59.4	54.0
Chile	100	37.9	38.0 <sup>a</sup>	62.1	62.0 <sup>a</sup>
Colombia	100	45.7	55.6	54.3	44.4
Costa Rica	100	41.2	44.9	58.8	55.1
Ecuador	100	55.6	57.4	44.4	42.6
Honduras	100	57.6	60.7 <sup>b</sup>	42.4	39.2 <sup>b</sup>
Mexico	100	38.4	39.6	61.6	60.4
Panama	100	36.0	37.3 <sup>a</sup>	64.0	62.7 <sup>a</sup>
Peru	100	52.7	59.5	47.3	40.5
Uruguay	100	39.1	42.2	60.9	57.8
Venezuela	100	38.6	49.2	61.4	50.8

Source: ILO (2002).

<sup>a</sup> 2000 figure.

<sup>b</sup> 1999 figure.

One significant factor affecting the labour market and the design of social security systems is the need for technological change and greater competitiveness resulting from participation in the international economy. The need to adapt the production structure to a situation in which economies have opened up internationally means that greater labour mobility is required among the different production sectors, so that the new production requirements can be met.

Although desirable, increased labour mobility among sectors and greater competitiveness should not be achieved at the expense of social security. On the contrary, one challenge for the reforms is to reconcile the mechanisms and costs of insurance with the needs of labour mobility and competitiveness. Insofar as social protection systems facilitate labour mobility among competitive production sectors, they will improve the capacity of the labour market to respond to external shocks. What is required for this, particularly where health and pensions are concerned, are portable social security benefits financed from assets acquired at competitive costs.

The increased volatility observed in the business cycle has brought with it greater instability in income levels, resulting in a higher percentage of persons facing social and economic risk. This has meant both a reduction in people's capacity to pay contributions and an increase in the demand for insurance and social

protection. Under these circumstances, social security systems need to reconcile the functions of insurance, to cope with the increase in economic risk, with those of distribution and solidarity, to be able to provide universal cover against those risks.

It is here that the level and composition of public spending, especially in the area of social protection, can serve to stabilize internal income levels and thus act as insurance against social risks in economies exposed to powerful and frequent external shocks. Rodrik (1998) shows a positive correlation between the international integration of an economy and the size of the State. In other words, the greater the degree of international openness, the higher public spending is found to be, whether for consumption or for social security.<sup>5</sup>

The main macroeconomic advances in the 1990s include the consolidation of fiscal accounts and the fall in inflation. Where fiscal adjustment is concerned, the deficit held steady for most of the decade at an average of some 1.6% of GDP, although during the recent crisis (1997-2002), when the severity of certain countries' fiscal problems came to light, it rose to figures in excess of 3% of GDP. Success in keeping the fiscal deficit down to moderate levels has proved consistent, however, with a recovery in public expenditure levels (tables 1 and 5).

Despite the fiscal achievements, procyclical management of tax policy has adversely affected the ability of countries to finance social security services when demand for them has risen in periods of recession. The evolution of social spending has followed the vagaries of economic growth, so that the loss of revenue during downturns has prevented coverage from being expanded (or maintained) by means of increased fiscal spending. If it is to underpin social protection policy, therefore, macroeconomic policy needs to concern itself not just with smoothing out business cycles but also with producing fiscal expenditure rules that provide scope for countercyclical public spending. This being so, rules to link fiscal goals with structural parameters rather than temporary conditions in the economy are an important element in social policy. This is particularly true in the new climate of vulnerability and volatility within which the Latin American economies now operate.

<sup>5</sup> The degree of economic openness is measured by the ratio of exports and imports to GDP.

TABLE 5

## Latin America and the Caribbean: Economic indicators

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Gross domestic product (annual rate of change)	3.0	3.3	5.2	1.1	3.7	5.1	2.2	0.5	3.8	0.3	-0.5
Public-sector balance (% of GDP)	-1.4	-1.4	-1.8	-1.5	-1.5	-1.4	-2.4	-2.8	-2.5	-3.2	-3.3
Consumer price index (December on December)	414.4	872.4 (898.3)	328.7 (340.9)	26.0 (25.9)	18.6 (18.6)	10.7 (10.3)	10.0 (9.8)	9.7 (9.5)	9.0 (8.6)	6.1 (5.9)	11.4 (12.2)
Total public spending (% of GDP)	17.5	17.8	18.0	18.2	18.1	18.6	19.3	20.5	20.6	19.8	...
Public-sector social spending (% of GDP)	10.9	11.9	12.1	12.1	12.4	12.5	12.7	13.4	...	...	...

Source: ECLAC (2002b) and, for figures in brackets, ECLAC (2003).

Where social protection is concerned, structural changes can be foreseen that owe nothing to the business cycle and are likely to lead to a substantial increase in the demand for social services. These include

population ageing, changes in epidemiological characteristics, technological changes (particularly in the area of health) and changes in the structure of households.

### III

## Health and pension reforms

It is common for social protection systems to have to cope with serious discrepancies between the financial resources needed and the funding actually available to meet demand. The result is that cost constraint is a key element in any effort to reform systems, even in industrialized economies that set out from a system of social protection with universal coverage. In Latin America the situation is more serious, as cost constraint is not the only challenge for reform. The need to bring large sections of the population into social security systems makes it essential to move towards a universality of benefits. Consequently, both efficiency and solidarity are essential parts of any reform agenda.

This is why the relationship between financing and provision of benefits is so important in Latin American reforms. It will not only affect the working of health and pension systems but, as efforts are made to extend coverage to sectors unable to contribute, will also have a major effect on the public finances. For this reason, any reform strategy needs to consider not only the financial constraints imposed by the macroeconomy, but also the major repercussions that the implemented

design may have on the demand for fiscal resources, and thence on the fiscal accounts.

This is of vital importance, since reforms in most of the region's countries envisage major changes in the public-private mix, with greater private-sector involvement in managing the financing of contributory regimes and service provision. How the public-private mix is configured in social security systems affects the distributive function of the State. To attain objectives of equity, solidarity and efficiency, then, it is necessary to improve existing institutions and/or create new ones, and this will have a significant effect on the financial needs of the public sector.

#### 1. Reforms to health system financing

##### a) *The organization of financing*

In the case of health systems, the international evidence shows that spending more does not always bring better results. The United States spends about 13% of GDP on health care, and its population coverage and health indicators are worse than those of the other



countries of the Organisation for Economic Co-operation and Development (OECD), which spend an average of some 8% or 9% of GDP. This suggests that the way the financing and provision of health services are organized has a strong influence on demand for resources in the sector and on the results obtained (White, 1995).

For this reason, one of the main challenges for the reforms has been to create appropriate rules and institutional arrangements for financing, and to find the right way to tie financing to service provision (Londoño and Frenk, 1997). Broadly speaking, there has been a growing consensus on the advantages of separating financing and provision. Concerning financing, and given that the economic environment is increasingly uncertain and that the demand for health services has a large aleatory component characterized by the uncertainty and diversity of risks, social insurance has become an efficient way of organizing the financing of health services (Buti, Franco and Pench, 2000).

Social health insurance needs to reconcile the functions of insurance with those of solidarity, distribution and universal coverage, and do so irrespective of people's employment situation. To achieve this, it is necessary to devise rules for insurance premiums, financing sources, the degree and level of benefits and coverage offered, the population universe included, and eligibility criteria. How all this is resolved will greatly affect the amount of financing that the health sector will require from the rest of society, the degree to which the insurance and solidarity functions are integrated, and the characteristics of the public-private dynamic in financial management and service provision.

In a social insurance context, irrespective of whether such insurance is operated by public- and/or private-sector managers, insurance functions have to be reconciled with those of distribution if progress is to be made towards universal coverage.<sup>6</sup> The cost of the premium per subscriber should be based not on risks reflecting individual factors (such as age, sex or medical history) but on the collective risks affecting the population as a whole. This implies subsidies to cover the cost of premiums, so that people will have access to the benefits offered by the insurance regardless of their individual risks and their ability to pay. The result

<sup>6</sup> The services concerned do not have to be provided by the public sector, but can perfectly well be operated by the private sector.

is solidarity between the sick and the well, between young and old, and between high and low earners.

In this context, private spending on health care should not be confused with private administration of funds in the social security system, as here it is public money that is being privately managed. Private spending on health care is that which is carried out outside the coverage of the social security system (so-called out-of-pocket expenses, copayments, etc.). The fact that such private spending is a large component of total health spending reflects the weakness of social protection systems. The greater the share of private health spending in the total, the more exclusive and inequitable health systems are (WHO, 2000).

When the structure of health spending in the Latin American countries is compared with that in the industrialized countries, the share of public spending is found to be much higher in the latter. This reflects the fact that their social health-care systems have comprehensive universal coverage. In Latin America and the Caribbean, on the other hand, private health spending was about 60% of the total in 1995 (tables 6 and 7).

#### b) *Solidarity in financing*

Progress towards greater population coverage involves higher subsidies to the sector, and thus greater demand for financial resources. Better social health-care provision will require efficiency improvements, both in the allocation and management of resources so that services can be improved, and in income-related solidarity mechanisms, particularly cross-subsidies from high-income to low-income sectors. While efficiency improvements reduce costs and help lower the demand for financial resources, solidarity mechanisms tend to raise costs but enable the benefits

TABLE 6

#### Selected regions and countries: Public-sector health spending, 1995

	Spending per capita (dollars) <sup>a</sup>	As percentage	
		Of GDP	Of total health spending
Latin America and the Caribbean	102	3.0	41.5
Canada	1314	7.0	71.0
OECD	1310	6.6	76.2
United States	1628	6.3	44.0

Source: World Health Organization (WHO) data.

<sup>a</sup> Purchasing power parity.



TABLE 7

**Latin America and the Caribbean: Composition of total health spending (public and private sectors), by subsector, 1990 and 1995**  
(Percentages of total spending)

Subsector	Health spending	
	1990	1995
Public spending	43.4	41.5
Central government	12.2	15.8
Local government	7.4	8.5
Social security	23.8	17.2
Private spending	56.6	59.5
Direct	...	39.0
Indirect	...	19.5
<i>Total</i>	<i>100.0</i>	<i>100.0</i>

Source: Molina, Pinto and others (2000); for 1990, based on Suárez and others (1995); for 1995, based on PAHO/WHO (1998), table 54.

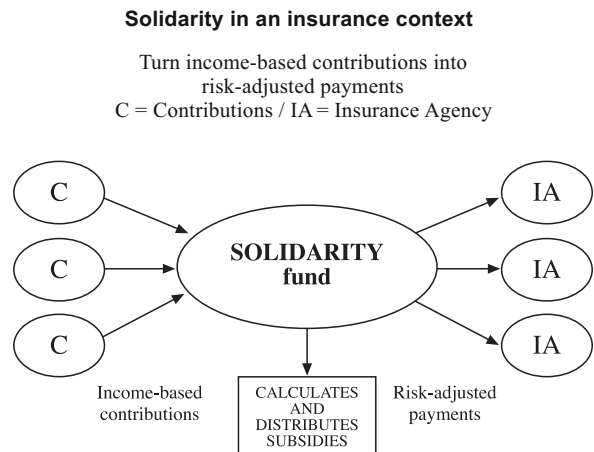
of social security to be extended to more people (Van de Ven and Van Vliet, 1992).

Solidarity among people with different income levels in a social risk insurance context is created by setting up solidarity funds to distribute subsidies that compensate for differences in individual risk (figure 1). Each individual contributes on the basis of earnings. Premiums are determined by average risk and cost, and insurance agencies receive payments that reflect their risk portfolios. This system implies that some people will contribute more than the average premium value and others less, depending on risk and income levels. The higher contributions of the former, combined with revenue from other taxes, provide the resources for the solidarity fund.

In a risk insurance context, this mechanism makes it possible to retain the principle of equivalence between contributions and benefits at the aggregate level, but introduces solidarity to the extent that insureds receive a benefits package that does not depend on their individual contributions: if a user's expected expenditure level is above the average, the difference will be covered by subsidies. This system also discourages risk selection, since although insureds pay according to their means, insurers' revenues depend on their risk portfolios, which in the final analysis are what determine the level of spending expected.<sup>7</sup>

<sup>7</sup> In the region, the Colombian reform includes funds of this type. The reform now being discussed in Chile includes the creation of a solidarity fund. In Europe, there have been experiences of this type in Belgium, Germany, the Netherlands and Switzerland. Israel also has a solidarity fund mechanism.

FIGURE 1



Source: Adapted from Titelman and Uthoff (2000).

The proportion of the population covered by social insurance also depends greatly on the source of financing. When insurance is financed exclusively out of wage contributions (which are the cornerstone of social security systems in most of the region's countries), they exclude those unable to contribute or the self-employed, who are covered mainly by the public-sector network of providers and, to a lesser extent, by the private sector. Any attempt to universalize the population coverage of insurance must involve widening the source of financing beyond compulsory employee contributions and compelling self-employed workers to contribute if they are in a position to do so. Furthermore, the contributions of those unable to pay must come out of general taxation. In this way, contributors and non-contributors can be linked by income solidarity mechanisms.

Given the budgetary constraints facing governments, it is important for compulsory contributions to be among the sources of solidarity financing. In Chile, for example, the bulk of health system contributions do nothing for income solidarity (only the 40% of contributions going into public-sector insurance are organized on this basis), so that the State has to obtain the resources from elsewhere.<sup>8</sup> When compulsory contributions do not form part of solidarity financing,

<sup>8</sup> In Chile, compulsory social security contributions channelled through private insurance schemes are based on individual risk and there are no income solidarity mechanisms.

the State has to take on a greater fiscal burden. If solidarity financing needs are high, this can place a great strain on the public budget.

An important issue, then, is the ability of those in the system to pay. As was seen in the introductory sections, the informal nature of the labour market in the region's countries has combined with an increasingly volatile business cycle to produce large shortfalls in contributions. This means, on the one hand, that large sections of the population have lost their insurance cover, with all the implied social costs. Again, hiatuses in employment have resulted in a low contribution density that is creating serious problems of financial sustainability in the insurance system. In a social risk insurance scheme, therefore, it is essential to have supplementary mechanisms that ensure a good contribution density, such as unemployment insurance or special insurance to cover contributions during spells of unemployment. Such supplementary insurance will inevitably create additional demand for fiscal resources or for supplementary insurance premiums (Velásquez, 2003).

c) *Guaranteed benefits and fiscal responsibilities*

One aspect that is the subject of great political and technical controversy, but that is central to the working of insurance systems and to the amount of financing required, is the content of the guaranteed benefits package. Although ethical, political, cultural and medical factors are all involved as well, we shall confine ourselves here to economic considerations.

Once society has decided on a set of entitlements that are enforceable by all social insurance subscribers, there automatically arises a financial obligation over time. If the social insurance is financed out of contributions and general taxation, the entitlement to benefits causes contingent liabilities to arise for the public sector. In other words, by creating an enforceable social entitlement, the State commits itself to guaranteeing this, which means that it is obliged to finance it over time.

To finance contingent liabilities, it is necessary to establish funding rules that guarantee provision of the benefits offered and meet the requirements of fiscal discipline so that public spending goals are met. In turn, the ability to finance contingent liabilities is seriously affected by the business cycle. One way of dealing with this is to use specific stabilization funds that build up resources during periods of economic growth and run them down at times of recession, so that the availability of financing is decoupled from immediate conditions

in the economy. This call on public resources is in addition to the financial demands involved in achieving the contribution density that insurance systems require.

Changes in contingent liabilities over time also play a vital role in the financial sustainability of social insurance. For example, benefit entitlements should only be extended on the basis of rules and criteria that reconcile the increase in provision with the need to keep social expenditure trends within limits that are fiscally sustainable over time, and thus strengthen the actuarial components of social protection systems.<sup>9</sup>

d) *Public-private mix, efficiency and cost restraint*

Social insurance schemes that are to be administered by public- and private-sector insurers, and are to supply services through a network of public- and private-sector providers, need to be designed with care. A poorly conceived mix of public and private involvement in social security management results in inefficiencies in financial management and service provision, leading to greater pressure on public expenditure. The industrial organization of the sector is thus crucial to the design of any reform.

The experience of reform in Latin America and elsewhere suggests that a strong regulatory capability is required if the private sector is to be involved successfully in the health services market. The market failures that affect financing and provision mean that, in an unregulated or under-regulated market, private-sector involvement results in a loss of efficiency and equity. Where financing is concerned, the main problem for equity and efficiency is the possibility that insurers might be encouraged to carry out risk selection ("skimming off").

The Chilean experience illustrates this point.<sup>10</sup> Private-sector insurers (ISAPRES) collect about 60% of compulsory social health insurance contributions. These institutions cater to only 25% of the population, however, and the public sector is responsible for the rest. When age and sex trends are observed, it transpires that the poorest and oldest, comprising the bulk of the riskiest population, tend to be in the public sector, while

<sup>9</sup> In setting benefits and entitlement rules, care needs to be taken not to create incentives for evasion. Otherwise the number of subsidized subscribers will tend to swell and the burden on the treasury or taxpayers to increase.

<sup>10</sup> This does not imply that the Chilean model is the only one in the region that has problems with equity and efficiency. Given the under-regulation of the current public-private mix, however, it offers a very good illustration of "skimming off".

the ISAPRE sector covers the youngest, the healthiest and those with the highest incomes (tables 8 and 9).

As can be seen, the Chilean public-private mix concentrates coverage of the worst financial and health risks in the public sector, increasing the financial requirements of that sector. Yet most compulsory contributions go to the ISAPRE system, depriving the treasury of funding. Accordingly, the State is confronting a rising demand for health services, and its financial burden is increasing as a result. The situation has been compounded by a decline in contributions to the redistributive social security system from the highest-income population, and by implicit or explicit State subsidies for private health care.

The demand for higher funding in the health sector can also be offset greatly by efficiency improvements involving better management of resources and cost restraint in service provision. To achieve this, it is important to improve the management of public hospitals and the mechanisms whereby funding is allocated to providers (prospective budgeting and performance-related payments) and to make changes to the care model. Most spending in the region goes on curative rather than preventive care (table 10). One of the most effective ways of containing costs is to improve

prevention, which means upgrading primary care networks.

## 2. Pension system reforms

### a) *Organizing retirement saving*

Structural reforms to pension systems<sup>11</sup> have brought about major changes in the relationship between benefits and contributions. Most reforms make greater or lesser use of individual capitalization schemes ("pillars").<sup>12</sup> The individual capitalization pillar may supplement or replace the unfunded pillar. In the region, efforts have been made to combine the new full individual capitalization pillars with the old unfunded pillars. There have been changeover systems that have shut down the public system and replaced it with a full individual capitalization one (Chile, 1979-1981; Mexico, 1995; Bolivia, 1996; El Salvador, 1996). There are mixed systems that include a full individual capitalization pillar as an integral part of a reformed public-sector pillar (Argentina, 1993; Uruguay, 1995). And there are parallel systems that have established a full individual capitalization pillar as an option in parallel with the reformed public-sector pillar (Peru, 1992; Colombia, 1993).

TABLE 8

**Chile: Financing sources for the health sector, 2000**

	Total		
	In billions of pesos	In billions of dollars	As %
Fiscal payments	613 221	1 048	21.0
Municipal payments	38 391	66	1.3
Corporate payments	184 311	315	6.3
Contributions	1 087 216	1 858	37.2
Public	444 937	761	15.2
Private	642 279	1 098	22.0
Out-of-pocket spending	935 923	1 600	32.0
Copayments	315 855	540	10.8
Pharmacy	288 219	493	9.9
Direct	331 849	567	11.4
Other	62 522	106	2.1
<i>Total</i>	<i>2 921 584</i>	<i>4 933</i>	<i>100.0</i>

Source: Chilean Ministry of Health data.

<sup>11</sup> Non-structural reforms improve the solvency of the public pension system as a means of preserving it, and alter the benefits structure to adapt it to the contribution capacity of subscribers. Among other measures, these reforms have changed indexation rules, raised retirement ages, lowered the replacement rate, imposed stricter access conditions for disability and survivor's pensions and non-contributory pensions, abolished or restricted *ex gratia* or special pensions for public servants and increased the number of years' contributions required for pension entitlement (Mesa-Lago, 1999).

<sup>12</sup> These operate as individual saving accounts whose benefits depend on the contributions actually made, which are for set amounts and are capitalized in individual accounts. The value of the annuity is calculated from the sum capitalized by the subscriber up to retirement age, taking into account the life expectancy of the population. In the unfunded system, benefits were defined and contributions could vary in accordance with actuarial calculations; contributions were used to finance the defined benefits of subscribers, which were not linked to contributions and could be cross-subsidized.

TABLE 9

**Chile: Population distribution between the public health system and private health insurance institutions (Isapres), by age and household quintile, 2000**

Age	Quintile 1			Quintile 2			Quintile 3			Quintile 4			Quintile 5		
	Public system	Isapres	Other	Public system	Isapres	Other	Public system	Isapres	Other	Public system	Isapres	Other	Public system	Isapres	Other
0-20	85.4	5.5	9.1	69.9	16.6	13.5	54.4	28.0	17.6	36.6	42.7	20.7	19.1	66.1	14.8
21-50	81.8	6.1	2.1	67.6	16.4	16.1	54.4	26.6	19.1	37.9	40.4	21.7	21.8	60.1	18.1
51-64	87.3	2.9	9.8	81.8	6.0	12.3	72.4	12.1	15.5	59.6	20.3	20.1	37.1	39.8	23.2
65 plus	89.5	0.8	9.7	91.1	1.1	7.8	89.4	1.6	9.0	79.4	5.9	14.8	55.5	21.8	22.7
<i>Total</i>	<i>84.2</i>	<i>5.4</i>	<i>10.4</i>	<i>71.2</i>	<i>14.6</i>	<i>14.2</i>	<i>59.5</i>	<i>23.3</i>	<i>17.3</i>	<i>44.3</i>	<i>35.2</i>	<i>20.5</i>	<i>26.5</i>	<i>55.2</i>	<i>18.3</i>

Source: Titelman (2000).

TABLE 10

**Latin America (eight countries): Distribution of health spending by service type, 1995**  
(Percentages)

Country	Preventive care	Curative care	Administration	Other
Bolivia	2.8	61.8	10.4	25.0
Ecuador	2.3	83.4	5.5	8.8
El Salvador	7.8	71.4	8.2	12.6
Guatemala	4.0	77.6	10.5	7.9
Mexico	9.0	80.0	3.0	8.0
Nicaragua	17.5	75.6	6.3	0.6
Peru	5.6	64.6	6.8	23.0
Dominican Rep.	7.4	67.0	15.5	10.1
Average	7.0	72.6	8.3	12.1

Source: Molina, Pinto and others (2000), on the basis of studies of national accounts. Collaboration between the Pan American Health Organization (PAHO)/United States Agency for International Development (USAID)/Partnerships for Health Reform.

From a fiscal standpoint, the structure of the financing and calculation of pension system benefits in each of these reforms is not neutral. By changing the way benefits relate to contributions and by limiting the scope for cross-subsidy among contributors (leaving the State to finance the distributive function of the system), the reforms affect fiscal liabilities.

b) *Transition costs*

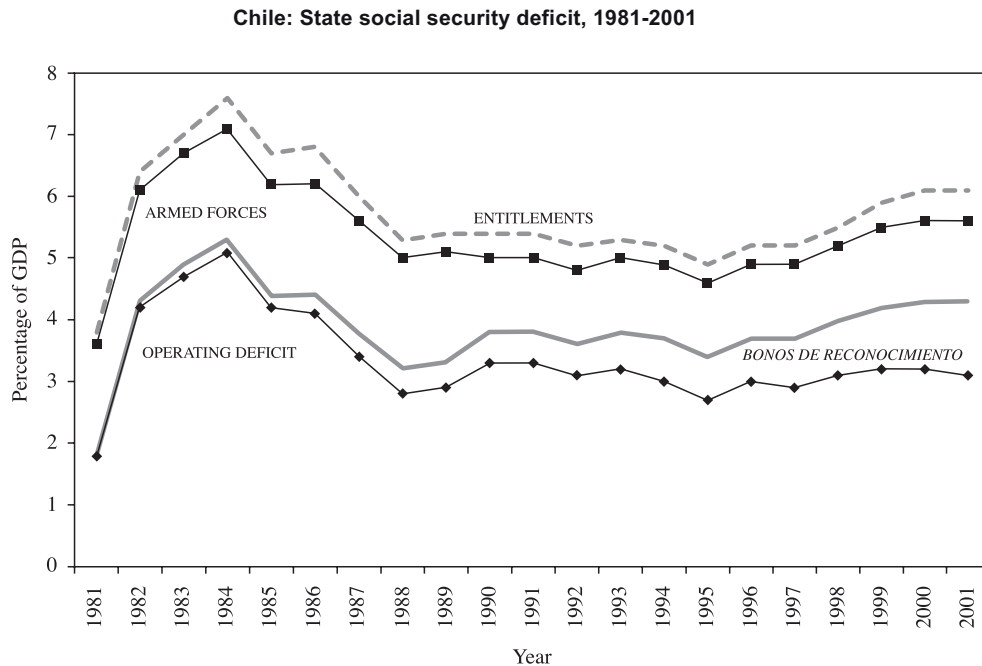
The State has to accept liability for the costs of the transition from one pillar to another (i.e., for entitlements acquired under previous contracts) that arise when contributions to unfunded public systems are turned into contributions to individual savings accounts.

How much this cost amounts to will depend on the contingent liabilities associated with the current and retired workforce, as determined by the contributions paid into the old system and the benefits accrued (Uthoff and Bravo, 1999; ECLAC, 1998). Their size can be

estimated in the form of a debt equivalent to the present value of the future flow of benefits to which current pensioners are entitled, and as the present value of the future flow of benefits due to those currently in work who have contributed to the old system. Amortizing this debt requires complex actuarial calculations, but what results is a fiscal liability that will swell the social security deficit if not offset by fiscal financing. In Chile, this debt was financed partly by primary fiscal saving and partly by issuing *bonos de reconocimiento*, certificates of entitlement to benefits accrued under the old system. How and when this debt is financed will depend on how the transition from one system to the other is carried out. The authorities have to deal with the fiscal liabilities of transition both by reallocating spending and by increasing revenue.

After more than 20 years of reform, in which the changeover has gradually been made from an unfunded system to one of individual capitalization, the Chilean experience is illuminating. The reformed pension

FIGURE 2



Source: Arenas de Mesa, 1999.

system has been sustained by an average increase in the social security deficit of some 2% of GDP during the first 20 years (Arenas de Mesa, 1999). This social security deficit (figure 2) breaks down into i) an operating deficit, reflecting payment of entitlements to those in retirement; ii) amortization of the *bonos de reconocimiento*, covering the entitlements of those who participated in the old system during their working lives; iii) payments to the armed forces pension systems, and iv) guaranteed social benefits to protect those who are indigent at retirement age (welfare pensions) and those who, having participated in the system, have not been able to build up enough capital for a socially acceptable benefit (minimum pensions).

The pension system debt to be made explicit can be large when a complete switch is made from an unfunded to a funded pillar, depending on demographic factors, the characteristics of coverage and eligibility conditions of the superseded systems, the entitlements that are established and the extent to which assets without ownership rights are replaced by assets that do carry such rights (Valdés, 2002). What part is made explicit and reflected in liabilities for the treasury, like those illustrated for Chile in figure 2, also depends on the reform strategy followed. To avoid very high operating costs and large liabilities in the form of *bonos*

*de reconocimiento*, it is possible to take measures like the following before individually funded pillars are introduced as part of the reform: i) change benefit rules and eligibility conditions; ii) only partially introduce a full individually funded capitalization pillar and minimize the incentives to move to the new pillar; iii) or include defined-contribution and notional capitalization criteria for the unfunded systems as an intermediate step in the transition, as has been done in other cases.<sup>13</sup>

In most reforms, the extra fiscal burden has been difficult to accommodate. In Argentina, for example, the Government had to suspend indexation of the *prestación compensatoria* (a benefit to compensate for entitlements accrued by contributing to the old system) and also of the *aporte medio previsional obligatorio* (compulsory average pension contribution, or AMPO) legally mandated as the basis for calculating compensatory pensions. In Bolivia, the universal benefit for over-65s provided for by the *bono solidario* (solidarity bond, or BONOSOL) could not be covered;

<sup>13</sup> See Holzmann, 1997; ECLAC, 1998; Carvalho and Paiva, 2000; Fox and Palmer, 2001.

although the benefit was extended to all over-50s, its value was reduced from US\$ 250 to US\$ 90. In Chile, there has been extensive debate on the level of minimum pensions, owing to their impact on fiscal expenditure; as a way of controlling the spending they generate, welfare pensions (PASIS) are provided under a quota system which sets the maximum number that can be granted each year (Gana, 2002).

c) *Effects on the government budget*

The idea behind redistributive financing is to protect those whose contribution history does not entitle them to pensions of their own. The increased vulnerability of today's workers to unemployment, the scale of job turnover and the incidence of informal and insecure employment mean that fewer and fewer people are paying into contributory systems and contribution density is low. Financing for the pensions of those unable to generate savings of their own depends on income sources such as cross-subsidy and/or general taxation.

The scope for achieving solidarity through contributions diminishes when a full individual capitalization pillar is introduced. With this pillar, which is always in a state of actuarial balance, a subscriber's benefits are equivalent to his or her contributions, duly capitalized, and there are no cross-subsidies. With this scheme, those who save enough are insured and those who do not are underinsured. Application of the equivalence principle to the full individual capitalization

pillar alone does not mean that those unable to contribute much might not receive cross-subsidies from those who can, within the reformed system. For this to happen, structural reforms to pension systems need to include a redistributive pillar to cover those workers. This pillar can be financed from increased fiscal subsidies and perhaps contributions. The basic problem with this combination of pillars is that, if extremely generous minimum and/or welfare benefits are provided, there will be no incentive for people to remain in the contributory pillars any longer than required for entitlement to the guaranteed benefits. It is indispensable, then, for such distortions to be corrected.

The coverage that a redistributive unfunded pillar should have and the way it is financed are major dilemmas for the current reforms. There is an extensive debate over how enforceable entitlements really are, whether they can be financed, and what incentives for avoidance and evasion might be created by non-contributory entitlements. One way of gauging the size of the redistributive pillar is to simulate a defined-contribution distributive pillar benefiting those who are excluded from the individual saving pillar. This is equivalent to having notional "solidarity accounts" for each citizen, for pension purposes.

Table 11 gives simulations for Chile of the present value of benefit payments guaranteed to current pensioners (row 1), future generations (row 2) and the total (row 3), and of the fiscal deficit flow involved in amortizing the total debt on a straight-line basis (last row).

TABLE 11

**Chile: Simulation of contingent liabilities represented by entitlements, and fiscal deficit required to amortize them<sup>a</sup>**  
(Percentages)

Entitlement as percentage of the average wage in the economy	15			20			30		
Population covered by entitlements as percentage of EAP <sup>b</sup>	35	45	55	35	45	55	35	45	55
Pensioners	5.2	6.7	8.1	6.9	8.9	10.8	10.3	13.3	16.2
Future generations	30.4	39.1	47.8	40.5	52.1	63.7	60.8	78.2	95.6
<i>Total</i>	<i>35.6</i>	<i>45.8</i>	<i>56.9</i>	<i>47.4</i>	<i>61.0</i>	<i>74.5</i>	<i>70.1</i>	<i>91.5</i>	<i>111.8</i>
Amortization of the debt (fiscal deficit)	0.89	1.15	1.42	1.19	1.53	1.86	1.75	2.29	2.80

Source: Prepared by the authors on the basis of demographic parameters, coverage, contribution rates and enforceable entitlements estimated at replacement rate.

<sup>a</sup> See Uthoff and Bravo (1999) for details of the methodology.

<sup>b</sup> EAP: economically active population.



TABLE 12

**Latin America (four countries): Comparison of contingent liabilities represented by entitlements, and fiscal deficit required to amortize them**  
(Percentages)

	Estimated for the 45% of the EAP entitled to a benefit, at a replacement rate of 20% <sup>a</sup>		
	Debt towards current generation (% of GDP)	Debt towards future generations (% of GDP)	Fiscal deficit that would amortize the debt (% of GDP)
Bolivia	11.4	81.6	2.33
El Salvador	9.5	63.2	1.82
Mexico	8.7	62.0	1.77
Chile	8.9	52.1	1.53

*Source:* Prepared by the authors on the basis of demographic parameters, coverage, contribution rates and enforceable entitlements estimated at replacement rate.

<sup>a</sup> As percentage of average wage.

This method uses a discount rate equal to the rate of wage growth. The population entitled to guaranteed benefits is expressed as a percentage of the economically active population (EAP): 35%, 45% and 55%. Benefits are expressed as percentages of the average wage in the economy (15%, 20% and 30%). Given the simplifying assumptions,<sup>14</sup> each of them has to be matched by an actuarially balanced contribution rate. With these suppositions, social security deficits for the welfare and minimum pensions of those currently retired, which now represent 0.4% of GDP (figure 2), will increase to 1.5% of GDP once the generations now working retire. Calculations by Arenas de Mesa (1999) for similar benefits (minimum pension) yielded comparable results. The calculations show that the percentage of the population entitled to guaranteed benefits and the replacement rate and/or notional contribution rate used to quantify their entitlements have a significant influence in determining contingent liabilities.

Calculations of contingent liabilities associated with guaranteed benefits depend not only on the amount of the benefits, expressed for example as replacement rates for average wages in the economy and the population covered. They are also affected by structural factors associated with the potential ability of

subscribers to finance their own pensions, something that is influenced in Latin America by the extent of informal work, expressed in this methodology by the share of the EAP accounted for by wage earners. Again, they vary with demographic factors such as the dependency ratio between over-60s and the 20 to 59-year-old population and the average life expectancy of those currently over 60. Since these factors vary greatly from one country to another, the cost of similar benefits may differ among them (table 12).

Acknowledging pension entitlements for those who are underinsured or uninsured with regard to the individual capitalization pillar, and quantifying the contingent liabilities their demand represents, implies spelling out how the individual capitalization and defined-contribution pillar may be supplemented by an unfunded defined-benefit system, and how much financing is needed to cover such people. There is currently a debate as to whether solidarity should be financed from a tax on work (contributions), general taxation or a mixture of the two. In any event, the existence of guaranteed benefits means that the design of new systems should be carefully analysed, so that if they include distributive pillars, these do not create incentives for evasion or avoidance of contributions. Care is also needed to see that the way they are financed does not affect employment, whether directly by increasing the cost of contributions or indirectly by creating fiscal imbalances and undermining the competitiveness of the economy (ILO, 2001b; Orszag and Stiglitz, 1999).

d) *Contribution density and contingent liabilities*

Ultimately, if people are to be able to use an individual saving plan system to smooth consumption

<sup>14</sup> Three simplifying assumptions are used: i) the percentage of the population eligible to receive guaranteed benefits remains unchanged over time; ii) the eligible working population accrues solidarity contributions from the age of 20 until retirement, at a rate that is actuarially correct to finance the guaranteed benefits; iii) the eligible population that is already in retirement receives a solidarity pension from the age of 60, at a replacement rate that is actuarially balanced with the value of the benefits guaranteed (Uthoff and Bravo, 1999).



TABLE 13

**Latin America (eight countries): Indirect indicators of contribution density**  
(Percentages)

Risk indicator	December 2001	December 2002
<i>Contribution density</i>		
<i>Subscribers/EAP</i>		
Argentina	54.3	55.4
Bolivia	21.2	23.1
Chile	108.1	111.8
Costa Rica	53.8	69.3
El Salvador	35.8	36.7
Mexico	63.8	71.9
Peru	25.5	27.2
Uruguay	38.9	41.4
<i>Contributors/subscribers</i>		
Argentina	29.0	33.2
Bolivia	47.0	46.9
Chile	53.7	51.0
Costa Rica	...	...
El Salvador	53.2	47.6
Mexico	44.7	41.7
Peru	41.2	39.4
Uruguay	53.2	45.1
<i>Contributors/EAP</i>		
Argentina	15.7	18.4
Bolivia	9.9	10.8
Chile	58.0	57.0
Costa Rica	...	...
El Salvador	19.0	17.4
Mexico	28.5	30.0
Peru	10.5	10.7
Uruguay	20.7	18.7

Source: AIOS (2002).

over their lives, it is necessary to project the amount and density of contributions made while they are enrolled in the system during their working years. This will determine whether they receive satisfactory benefits or not. With defined-contribution full individual capitalization pillars, the contribution density of individuals, which depends on their personal saving capacity, will largely determine whether they end their working lives fully insured, underinsured or uninsured. Again, if contribution density is not known in advance, it will be difficult to quantify the solidarity contributions that the State has to capitalize (contingent liabilities) to finance the guaranteed pension in an actuarially balanced way.<sup>15</sup>

<sup>15</sup> Benefits may be different, as they vary with the contributions made from a welfare pension to a minimum pension for those who qualify as eligible contributors (Uthoff, 2002).

Contribution density is affected by different risks, such as those of disability and death,<sup>16</sup> and by employment instability as manifested in changing levels of unemployment and informal work. In societies where there is no unemployment insurance and where informal workers contribute little,<sup>17</sup> contingent liabilities are sensitive to changes in the business cycle. Using indicators from the International Association of Pension Funds' Supervisory Organisations, table 13 shows a number of countries in which the percentage of subscribers is low in relation to the EAP, indicating that coverage of the capitalization pillars is low as well.<sup>18</sup> Again, the low proportion of subscribers actually paying in shows indirectly that contribution density may be relatively low. The lack of market instruments to ensure high contribution density is an obstacle to low-income sectors, in particular, benefiting from social protection in the absence of redistributive financing. Although there have been new initiatives to promote unemployment insurance, these are still at an early stage and do not take account of other forms of labour market adjustment such as rising informal activity, in which contribution density is usually low.

By and large, the evidence indicates that workers' contribution levels are closely linked to the structure of the labour market and are not greatly influenced by the poverty levels of the households they belong to. Informal working strengthens the factors working against high contribution density. The contribution rate for informal activities has been holding fairly steady at a rate much lower than that for formal activities. Table 14 illustrates the situation in Chile.

<sup>16</sup> Also, many people work on an own-account basis and opt for other types of saving that are more easily accessible should contingencies arise (Coraggio, 2003).

<sup>17</sup> Because people have different needs over the life cycle that compete with saving for old age.

<sup>18</sup> Records of pension system subscribers and contributors leave much to be desired, as the former are sometimes double-counted and the contribution density of the latter is not measured. The Chilean authorities have treated this problem as one of vital importance. Contribution density has been shown to be much lower than was expected when the system was established, and there are large variations by sex and age group. In 2001, the average contribution density of individual capitalization system subscribers was 41%, while the average for system contributors was 59%. This means that over 12 months, subscribers and contributors actually only paid 4.9 and 7 months of contributions, respectively (Government of Chile, 2003).

TABLE 14

**Chile: Percentage of workers paying into the individual private capitalization system, by poverty level and labour market segment, 1992 and 2000**

	Poor		Not poor	Total
	Indigent	Not indigent		
1992				
Informal sector				
Domestic service	21.5	22.6	42.8	37.5
Other	21.1	25.9	26.2	25.9
Formal sector	64.0	72.0	76.4	75.1
<i>Total</i>	<i>43.3</i>	<i>52.1</i>	<i>55.6</i>	<i>54.5</i>
2000				
Informal sector				
Domestic service	7.4	18.2	40.6	36.6
Other	9.3	18.9	28.2	26.6
Formal sector	43.5	67.5	79.5	77.8
<i>Total</i>	<i>25.9</i>	<i>45.3</i>	<i>59.7</i>	<i>54.5</i>

Source: ECLAC tabulations, using data from the Chilean National Socio-economic Survey (CASEN).

## IV

### Conclusions

Reforms to social security systems involve the difficult task of reconciling entitlements and needs with financial constraints and shortfalls. Fiscal constraints limit the scope for financing the huge social demand in our countries. Again, the design and implementation of reforms have a significant impact on the demand for fiscal resources, as they affect the efficiency with which resources are allocated and managed, the way solidarity mechanisms are financed and the costs of transition.

Demand for social security services is influenced by cyclical economic factors and by variables of a more structural nature. It is largely through the labour market that the business cycle influences financing sources and the demands made on social security systems. The unfavourable evolution of the labour market in the countries of Latin America has created greater challenges for social security reform.

In economic environments characterized by greater uncertainty and volatility, and thus by higher social risk, social security reforms need to reconcile the functions of insurance and saving with those of redistribution and

solidarity. This is crucial if the idea is to move towards universal coverage and benefits.

In the case of the health sector, social insurance is becoming an efficient way to organize financing. To move away from the current segmentation of the population among different health subsystems, membership of an insurance scheme needs to be decoupled from the occupational position of the individual. In other words, insurance needs to cover both employed and self-employed workers and those unable to contribute. This means establishing solidarity funds financed out of contributions and taxation. To the extent that social insurance management might involve private-sector administration of resources, it is vital to avoid the problems of risk selection. When private-sector administrators are involved in financing and providing social security services, it is crucial to have a good regulatory framework in place to ensure that these organizations have the same rights and duties as public-sector administrators.

Progress towards universal coverage in a social insurance context involves a number of financial demands

on the public sector. The costs borne by the State may be very considerable, depending on the nature of the benefits covered by the insurance, the amounts of minimum and welfare pensions, the contribution density guarantee and the extent of subsidy for solidarity purposes.

As the benefits offered by social security systems turn into enforceable entitlements, they become contingent liabilities for the State and have to be financed irrespective of the vagaries of the business cycle. If it is to support social policy, macroeconomic policy needs to concern itself not just with smoothing out the business cycle, but also with creating fiscal expenditure rules that provide scope for countercyclical public spending. Rules to link fiscal goals with

structural parameters rather than with the current position of the economy provide a good underpinning for social policy.

Another important issue is the calculation of contingent liabilities and their evolution over time. Such liabilities are affected by three factors. First, by the amount and volume of benefits guaranteed. Second, by significant changes over the business cycle in the number of people who can and cannot contribute, as problems stemming from low contribution density result in people who were apparently insured being left uninsured. Third, by the way solidarity is financed: if workers' and employers' contributions are not part of this, the cost for the treasury will tend to rise.

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# Fiscal policy *and social protection* in Chile

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Stable development and financing of the social protection system, one of the priorities of fiscal policy in Chile over recent years, has helped to reduce poverty and indigence, particularly since the 1990s. The fiscal accounts have been managed prudently, and budgetary balance and efficient administration have been given priority over short-term objectives. Even so, poverty is still a fact of life and the poor are still vulnerable to drastic falls in income. This means that an effort is still required to modernize fiscal policy and develop new institutional arrangements for the social protection system. This paper analyses the challenges involved and the relationship among the different roles played by fiscal policy in Chile over recent years.



# I

## Introduction

The main functions performed by fiscal policy in Chile over recent years include the following: i) it has contributed to macroeconomic stability and thereby fostered economic growth; ii) it has generated stable, balanced financing for the social protection system, whose development has been made possible in part by these favourable conditions; and iii) it has influenced the institutional framework for social policy and the basic system of social protection. This paper explores and examines these functions, looks at the relationships among them and considers how closely they are linked together in the fiscal and social experience of Chile in recent years.

The globalization of financial markets has made fiscal stability ever more important. Increasing economic globalization and market integration have generated enormous growth and development opportunities for the economies of Latin America. At the same time, however, and as the incomes, consumption opportunities and well-being of people in emerging economies have increased, they have become more vulnerable to fluctuations in the world economy. The extra risk associated with countries' increased exposure to external factors has been accompanied by the development of insurance markets and institutional and non-institutional protection mechanisms.

In this constantly evolving economic context, social protection policies are becoming more and more important, not just as a means to equity but also as part of an economic development strategy to cover the basic risks facing lower-income sectors and thereby enable them to take more proactive decisions in their quest to overcome poverty. The social protection system seeks to reduce the vulnerability or risks faced by the poorest when shocks occur, in Chile or elsewhere.

In recent years, one of the priorities of fiscal policy has been to develop the social protection system and provide it with stable financing. Although reducing poverty and indigence and combating inequities have

been the main thrusts of social policy, poverty is still a fact of life and the poor remain vulnerable to drastic falls in income.

The recent international economic crises severely affected the economies of Latin America and highlighted the situation of fiscal imbalance in which many of them were placed, requiring painful economic adjustments that intensified rather than mitigated the impact of the crises. In the case of the Chilean economy, success in reconciling strong growth in social spending with a sound, balanced fiscal policy has made it possible to implement a large range of temporary measures in crisis periods that have cushioned the basic consumption patterns of the lower-income population.

Chile is thus seen as an example of prudent, orderly fiscal management in which efficient administration and budgetary balance have been given priority over short-term objectives and sustained fiscal support for social development has been successfully reconciled with a considerable reduction in public debt.

In this context, it is more and more important to pursue fiscal responsibility so that the public finances can be managed sustainably. To reduce macroeconomic volatility, however, it is also necessary to allow fiscal policy to play a countercyclical role. In Chile, the fiscal rule that consists in maintaining a structural surplus of 1% of gross domestic product (GDP) is applied for precisely this purpose.

The argument is that applying the 1% of GDP rule allows public spending decisions to be based on the more permanent availability of financing, so that temporary revenue surges generated by the economic cycle are not relied upon as a basis for spending, and so that drops in revenue known to be temporary do not result in unnecessary spending cuts. The benefits sought are medium-term macroeconomic balance and minimization of cycle-related costs (Ministry of Finance, 2002b). The idea is that structural balance should improve both transparency and flexibility in the management of the public finances at any given point in the cycle and should help make fiscal policy a key instrument in promoting macroeconomic stability and growth in the medium and long term.

The subject is a particularly important one where social protection is concerned, since if future fiscal

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commitments are not properly anticipated there is the risk that resources intended for social purposes may at some point have to be diverted to cover liabilities as they arise over time. This is why it is important to consider the management of contingent liabilities as one of the medium-term aspects of social protection policies.

The task of fiscal policy is not over when it has contributed to macroeconomic stability and stable financing of the social protection system. On the contrary, it has an active role to play in the development and implementation of the system of public and semi-public institutions in which social policies and

programmes operate. In other words, fiscal policy is not neutral vis-à-vis the social protection structures that arise as a result of its action.

This document contains four sections besides this introduction. Section II provides a summary of macroeconomic fiscal policy and the policy of structural balance. Section III describes the social protection system and its effects in reducing poverty and redistributing income. Section IV shows the relationships between fiscal policy and the institutional framework for social programmes, and details the most important contingent liabilities. Lastly, section V offers some final remarks and conclusions.

## II

### Macroeconomic fiscal policy

#### 1. Fiscal responsibility and social protection

Over the economic cycles of the last two decades, fiscal responsibility has become increasingly important to economic management, and this is particularly true where social policies in Latin America are concerned. The large adjustments of the 1980s and the current situation in some countries have shown very starkly that irresponsible management of the public finances can have very adverse economic and social consequences.

Fiscal stability has increasingly been a key factor in the sustained development of social policy institutions, and it is particularly crucial at a time when the globalization of financial markets has become a reality. The procyclical nature of short-term international capital and the vital role played by changes in the terms of trade have led countries to design mechanisms for self-insurance (such as stabilization funds) and risk diversification (such as investments abroad) to mitigate the effects of economic crises on the public finances (De Ferranti, Perry and others, 2000). This makes it less likely that the budgets of the different social programmes will have to be cut.

In addition to this, the way the public finances and their link with social protection are regarded in economic terms has been tending to shift in recent years. There has been a gradual movement away from short-term analysis centring on aggregate demand and the liquidity available for financing and towards a medium-

term outlook centring on the scope for meeting the needs of the population at times of crisis, on financial sustainability, on fiscal risks, on intertemporal budgetary constraints and on public-sector management efficiency.

In this context, Chile stands out as an example of prudent, orderly fiscal management suitably combined with steady development of social policies.<sup>1</sup> Efficient administration and budgetary balance have been given priority over short-term objectives, and this has meant a greater capacity to respond to the social demands that arise at times of crisis. During the 1990s, in fact, fiscal support for social development was sustained even during the economic slowdown of 1998-2002, while between 1989 and 2002 gross central government debt was reduced from 43.8% to 15.9% of GDP.<sup>2</sup>

This reduction in the public debt burden has important consequences for the country's ability to maintain steady, stable growth in fiscal social spending

<sup>1</sup> See Marcel and Tokman (2002) for an analysis of the main fiscal reforms implemented in Chile over recent years.

<sup>2</sup> In relative terms, this debt now compares favourably with the figures for other countries. In the case of the most advanced Organisation for Economic Co-operation and Development (OECD) countries, for example, gross central government debt averaged 73% of GDP in 2001, ranging from a low of 18% for the Republic of Korea to a high of 132% for Japan. To compare with other countries, gross general government debt ranges from 24% of GDP in the Czech Republic to 70% in Brazil (Ministry of Finance, 2002a).

even at times of crisis. Firstly, the reduction in debt has meant that substantially fewer resources are required to service it, and this has direct consequences in that it provides greater scope for fiscal policy to redirect resources to social areas. Secondly, maintaining a low level of public borrowing acts as a national protection strategy, as fiscal adjustments are less likely to be needed when interest rates rise sharply and when international capital proves volatile, as it does in times of crisis. Furthermore, lower public debt means that the public sector can be more selective in its use of external credit. This was the case with the sovereign bond operations of the 2000–2002 period, which were a step forward in consolidating the country's financial position.

The fiscal policy debate in Latin America has centred on long-term financial sustainability, often ignoring the effects of procyclical bias in fiscal policy and the business cycle. Perry (2002) maintains that this is a serious mistake, because in Latin America procyclical policies have a huge cost in terms of growth and welfare, especially for the poorest. Procyclical fiscal policies and rules, he adds, tend to generate deficits so that ultimately they are neither sustainable nor credible.

The instability of fiscal policies is probably one of the underlying causes of macroeconomic volatility in Latin America (De Ferranti, Perry and others, 2000). For the public finances to be sustainable over time, therefore, it is crucial that there be fiscal responsibility. Yet fiscal policy also has to be allowed to play a countercyclical role if macroeconomic volatility is to be reduced, so that social policies do not have to be sacrificed at times of crisis. This is one of the objectives of the fiscal policy rule applied in Chile, which is analysed below.

## 2. Structural balance and the fiscal policy rule: rigidity or flexibility?

Macroeconomic fiscal policy has two overarching objectives: to play a short-term stabilizing role and to pursue long-term sustainability. In some economies, pressures from society or interest groups often result in the second objective being subordinated to the first, which can trigger unsustainable fiscal deficits. Well-designed fiscal policy rules can reconcile these two overarching objectives.

Thus, in 2000 Chile brought in an explicit rule for the formulation, management and evaluation of fiscal policy that consists in maintaining a structural central government surplus of 1% of GDP. Its objectives, the

structure of the fiscal policy indicator and its advantages and limitations are described below.

### a) *Objectives of the structural balance indicator and the fiscal policy rule*

The specific objectives pursued by the fiscal policy rules applied in various OECD countries include the following: i) ensuring macroeconomic stability; ii) enhancing the credibility of fiscal policy and helping to stabilize the public debt; iii) ensuring the long-term sustainability of fiscal policy; iv) minimizing the negative externalities of international treaties, such as the Maastricht Treaty; and v) reducing the procyclical bias of fiscal policy.

The objective of the fiscal policy rule in Chile, it has been argued, is to ensure that public spending decisions take account of the availability of more permanent financing, so that temporary revenue surges arising from the business cycle are not relied upon as a basis for spending, and so that revenue losses known to be temporary do not result in unnecessary expenditure cuts. The aim of this is to ensure medium-term macroeconomic balance and to minimize cycle-related costs (Ministry of Finance, 2002b). The idea is that structural balance should increase both transparency and flexibility in the management of the public finances at any given point in the cycle and should help make fiscal policy a key factor in macroeconomic stability and growth in the medium and long term (Marcel, Tokman and others, 2001).

### b) *Estimating the structural balance*

Of the various fiscal policy indicators available in Chile, the one chosen was the structural balance indicator, partly because the International Monetary Fund (IMF) and OECD recognize, validate and apply its methodology. Although it does not in itself entail a fiscal policy rule, this indicator provides a basis for establishing the 1% of GDP structural surplus rule.

To calculate the public-sector structural balance in Chile, the IMF criteria for estimating structural balances in developed countries were adopted. The standard methodology followed by that organization was adjusted in two ways to reflect the special characteristics of the Chilean public sector. Firstly, expenditure was not adjusted for the business cycle because there are no spending programmes that respond automatically to that cycle. Secondly, a specific adjustment was added for copper revenue, as this is a major source of fiscal revenue deriving from the exploitation of a raw material whose price exhibits reversion to the mean.

The public-sector structural balance thus reflects what the amount of fiscal revenue and expenditure would be if output were at its potential level and the copper price were at its medium-term average. It therefore excludes the cyclical and aleatory effects of two factors that are of vital importance in Chile: economic activity and the copper price.

The structural balance is estimated in three stages. First, the adjusted balance is estimated. Accounting adjustments are made to the actual balance to determine the revenue and expenditure items to be included in the adjusted balance so that it reflects net asset variation in the public sector. Second, the cyclical components of the budget are estimated, namely the effects of cyclical changes in economic activity and the copper price on fiscal aggregates. Two bodies were set up to estimate the copper price and the level of activity in the long term, each of them staffed by independent experts: the Comité Consultivo del Precio de Referencia del Cobre (Copper Reference Price Consultative Committee) and the Comité Consultivo del PIB Potencial (Potential GDP Consultative Committee). The third stage consists in estimating the structural balance from the adjusted balance and from the cyclical components calculation.<sup>3</sup>

c) *Advantages and limitations of the fiscal policy rule*

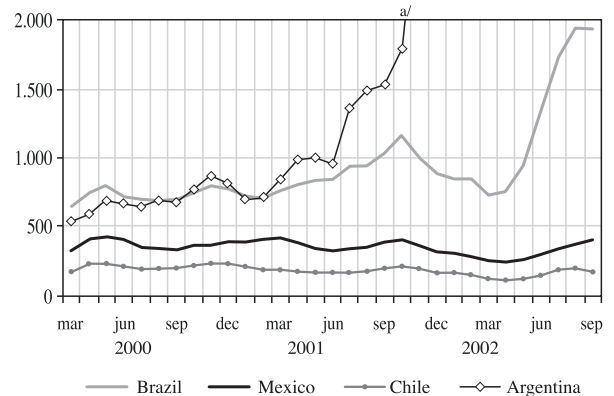
Since 2001, the public finances of the central government have been managed in accordance with the 1% of GDP structural surplus rule. Although this rule has only been operating for a short time, it is possible to identify a number of benefits deriving from its application in the last three financial years.

Firstly, the policy rule has helped guide the expectations of economic agents concerning the direction of fiscal policy, allowing the benefits of future prudence to be reaped immediately. Its application has provided a signal of fiscal austerity and responsibility at a particularly difficult time for the international economy. Thus, one of the clear consequences of this signal at the present time is that Chile's country risk, as measured by the spread of sovereign debt, has remained extraordinarily low. This has protected the Chilean economy and set it apart from the other countries of Latin America (figure 1).

<sup>3</sup> See Marcel, Tokman and others (2001) for a detailed explanation of the methodological aspects and procedure involved in estimating the structural balance.

FIGURE 1

**Latin America (four countries): Country risk as measured by the spread of sovereign debt over United States treasuries**  
(Basis points)



Source: JP Morgan Chase.

<sup>a/</sup> Values in excess of 2000.

Similarly, the rapid structural improvement in the public finances in 2000 created the confidence and scope for the public sector to play a countercyclical role in 2001 and 2002. Internationally, this countercyclical character of the public finances is one of the most striking features of Chilean macroeconomic policy.

The policy rule has therefore made it possible to reconcile two complementary objectives that are highly desirable for an economy which depends as heavily on external conditions as the Chilean economy does: strengthening fiscal discipline and playing a countercyclical role. Fiscal discipline has been strengthened in the medium term by concentrating on intertemporal financial sustainability and not on the short-term liquidity available for financing. The effect of this has been to reassure economic agents and investors that accounting deficits are essentially transitory and that financing needs are being kept down to a level compatible with the capacity to generate fiscal revenue over the medium term. The countercyclical role, from a modern point of view, has taken account of the costs entailed by a procyclical fiscal policy in terms of growth and welfare (particularly that of the poorest), one of the characteristic weaknesses of developing economies. In fact, moderating the growth of fiscal expenditure over time makes it less likely that fiscal adjustments will be needed and allows social policy institutions to develop more steadily.

In consequence, the structural surplus rule has not brought any additional rigidity to fiscal policy. Rather,

it has set definite pre-announced limits to accounting deficits, and these have provided the flexibility needed to support economic growth, investment and the development of social policies at times of particular difficulty.

Where social policies are concerned, unqualified commitment to the 1% of GDP structural deficit target has helped reconcile fiscal austerity with the sustained development of social protection policy institutions. The stability that the application of this rule has brought to the development of public policies is at least as important as the countercyclical capacity of the public finances and the credibility of the medium-term signal that this generates. Application of the structural surplus rule, combined with a major effort to reallocate resources, has made it possible to carry on increasing public-sector social and investment spending and to implement new programmes to deal with the consequences of the economic slowdown.

This is reflected, among other factors, in the recent growth of social spending and public-sector investment, which increased respectively by an estimated 5.8% and 7.9% in real terms annually between 2001 and 2003. As table 1 shows, the above-average increases in this priority spending over the last two years were achieved through an effort to contain inertial growth in other expenditure. The table also shows that while social and investment spending saw this strong growth in 2001-2003, expenditure on defence and operating costs (staff and the procurement of goods and services) rose more slowly than the average for the 1990s.

As for the limitations of the policy rule, these include the lack of a legal framework to underpin its application and ensure that its continuity does not depend only on the political will of the present

Government. Although this has not undermined its credibility in practice, it is worth considering what mechanisms can be created to institutionalize it. The international evidence regarding legal backing of this type is very varied, however. Even if a legal instrument has been put in place to establish the fiscal rule, it is essential for effectiveness that it should be plausible, which means that its design needs to allow for continuing application by successive governments. In the long run, this will depend not necessarily on the force of the legal instrument establishing the rule, but on whether it has been complied with in the past and what costs would be entailed by breaking it in future. The more institutionalized it is, the higher these costs will be.

### 3. The role of countercyclical fiscal policy in social protection

The policy rule has allowed social fiscal spending to play a countercyclical role in a context of high external volatility. It is necessary to ask, however, what consequences the existence or otherwise of countercyclical fiscal policies has for social protection.

The question is relevant, particularly for the countries of Latin America, because there is a strong perception of economic insecurity even in the countries with the best development prospects (De Ferranti, Perry and others, 2000). Along with this greater concern about economic insecurity, there are signs of unmet demand for social protection. It has been argued that this is partly because market development and structural reforms have not been matched by the parallel development of an adequate system of social protection.

This is particularly worrying if we consider that the poor are those most affected at times of crisis because they lack the means to protect themselves, such as financial assets, and because they are directly affected by falling incomes from work. In addition, increased employment for poor families during upturns is generated in the informal sector (Tokman, 2001).

In this context, fiscal policy has an important role to play in targeting the most vulnerable and worst affected groups and in seeking a greater countercyclical role at times of crisis.

The reality in Latin America, however, is far different. In most of the region's economies, fiscal policy has not succeeded in discharging its stabilizing function. Governments have generally adopted an expansionary stance during upturns, then applied contractionary policies in downturns. As a result, social

TABLE 1

#### Chile: Central government spending (Annual percentage change in real terms)

Expenditure type	Actual spending 1990-2000	Budgeted spending 2001-2003
Total expenditure	6.6	4.6
Economic classification		
Operating costs	6.7	4.1
Real investment and capital transfers	9.6	7.9
Functional classification		
Defence	3.6	1.9
Social spending	7.9	5.8

Source: Dirección de Presupuestos, Ministry of Finance.



spending on the poor is cut in recessions. The procyclical nature of this spending results in a lack of social protection during times of hardship, which are exactly when it is most needed.<sup>4</sup>

In past crises, Chile was no exception. In 1975 and 1982, for example, economic activity declined by more than 13% in real terms in one year, while unemployment rose to 30%. In 1999 the Chilean economy was more robust, but the Asian crisis still resulted in a 1.1% fall in activity and unemployment approached 10% that year. In those periods, meanwhile, total public spending behaved procyclically (with the exception of 1999). In 1975 it actually fell by 23%, while in the 1982-1983 period public-sector investment fell by an average of 13% a year.

As already mentioned, one of the benefits of today's fiscal policy management using the structural balance rule is the scope it offers for reconciling increased spending with macroeconomic balance in difficult periods. Even in present circumstances, in fact, the policy combination adopted meant that output grew by 2.1% in real terms in 2002.

The first step towards fiscal stability is to put the public finances on a sustainable path. Chile has led the way here, as in recent decades reserves have been saved and put aside against difficult periods.

The second step is give fiscal policy a countercyclical role that reduces aggregate volatility. The 1% of GDP structural surplus rule plays an important role in social protection. In this respect, the rule falls into the category of "self-insurance" mechanisms (Fiess, 2002). Accumulating resources during upturns means that more can be done in difficult times. At the same time the rule has the characteristics of a "self-protection" mechanism, since by following it Chile has reduced the likelihood of contagion from crises

affecting nearby countries and has differentiated itself from the rest of Latin America.

The current fiscal policy rule, based on maintaining expenditure growth at a level similar to that of structural revenue growth, dampens the cycle and mitigates its effects. During upturns, fiscal revenue increases and is saved, which relieves the pressure on aggregate demand. This contrasts with cases where these resources are spent by the treasury or simply returned to individuals. During times of recession, spending temporarily rises by more than output and tax revenues, the difference being made up from alternative sources of financing.

Notwithstanding the above, one possible way of enhancing the countercyclical nature of fiscal policy that has come up in a theoretical context is to improve the design of targeted programmes in relation to the economic cycle. From the point of view of social protection, it may be advisable to increase the countercyclical component of some targeted expenditure items or transfers that especially reach the poorest population. One way of preventing the dynamic of total expenditure from shifting over the course of the cycle might be to make other fiscal spending more procyclical or flexible, which would mean lessening the inertia of a large proportion of total expenditure. In many cases this tends not to be feasible, for example where staff or pension expenses are concerned, which makes this goal even harder to achieve.<sup>5</sup> If it were done, however, it would be possible to achieve total spending growth in line with structural revenues while enhancing the countercyclical character of targeted social spending. Although this situation really shows a lack of flexibility in fiscal expenditure, it is important to bear it in mind because it could limit the effectiveness of fiscal policy as a social protection mechanism for the poorest.

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<sup>4</sup> See De Ferranti, Perry and others (2000, chapter 7), Wodon, Hicks and others (1999) and Snyder and Yackovlev (2000) for an analysis of the evidence on this point.

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<sup>5</sup> In 2001, pension and staff expenditure accounted for some 48% of total spending by central government in Chile.

### III

## The social protection system and fiscal policy

The earliest forms of social protection applied in Chile derived from the social theories formed in the late nineteenth century. The first social assistance and protection networks were created between this period and the early decades of the following century. The initiatives adopted included bills to mandate the construction of workers' housing and the approval of tax incentives for building, compulsory basic education and the health code (Arellano, 1985). These were some of the earliest pillars of a social network that by 2002 accounted for over 16% of GDP.

In the area of social protection, in particular the traditional and contributory systems, the so-called social laws enacted during the first term of Arturo Alessandri (1924) were the earliest social security measures applied in Chile and were based on the German experience or model designed by Bismarck the previous century. The system was one of social insurance differentiated by occupation. A second stage, lasting from the 1960s until 1980, took the universalization approach to social security formulated in the Beveridge Plan. The third stage, which is the current one, began in 1980. Its main thrust is towards privatization of the management of protection mechanisms (Arenas de Mesa, 2000).

There now coexist, in an odd mixture, a social insurance structure along the lines of the early German model that is being wound down for the most part, consisting in the pension systems tailored to different occupations that are run by the Institute of Social Security Standardization (INP) and are still fully operational for the military; a set of universal social insurance schemes, many of them with elements of social assistance, answering to Beveridge's conception of social insurance; and, lastly, insurance schemes administered by the private sector, either on a pooled basis as in the case of the pension fund managers (AFPS) in respect of pensions, or on an alternative or optional basis as in the case of the private health insurance institutions (Isapres) in the health field.

The fact that over three million people are living in poverty in Chile (Casen 2000 survey) means there is a great need to strengthen the social protection system in future. The tailing off of progress with poverty

reduction between 1998 and 2000 because of the adverse international economic situation shows how important this task is. Between 1990 and 1998, the proportion of people living in poverty fell from 38.6% to 21.7% of the total population, whereas in 2000 the incidence of poverty fell only to 20.6%. The indigence rate fell from 12.9% to 5.6% between 1990 and 1998, but in 2000 it rose slightly to 5.7%.

To deal with the new challenges, the social protection system will have to modernize and change its institutional structure. The efforts of protection networks will need to be coordinated and administered more efficiently, and institutions will need to be more flexible and decentralized. Information-gathering followed by the creation of a social protection information system, along with a new institutional structure for public-sector social protection policies, will need to be the basic pillars upon which a new social order can be built and consolidated in Chile (Arenas de Mesa and Benavides, 2003).

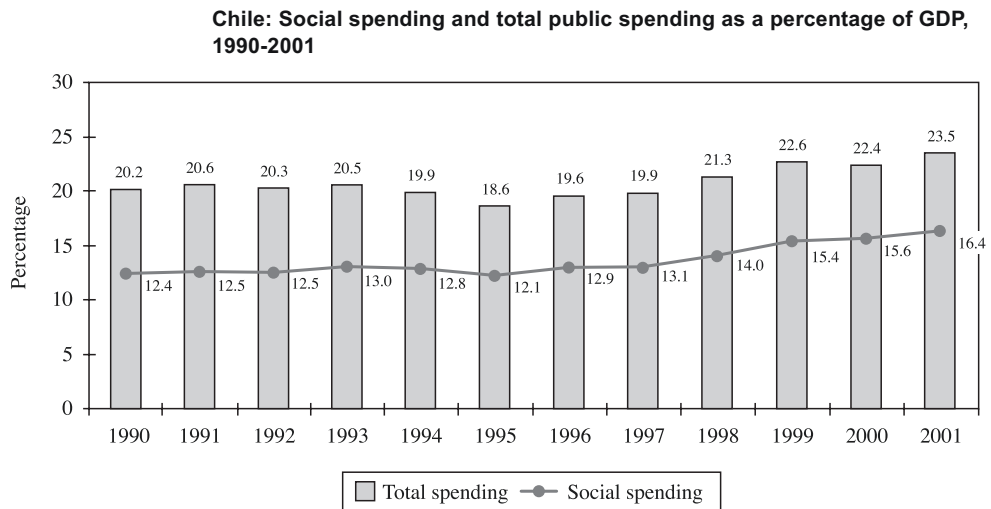
#### 1. Public spending and poverty

One of the main objectives of fiscal policy has been the development and stable financing of social policies and the social protection system. Meanwhile, reducing poverty and indigence and combating inequity have been the main objectives of social policy. Poverty is still a fact of life, however, and the poor are still unable to meet their basic needs, while remaining vulnerable to drastic falls in income.

Between 1990 and 2001, the size of the State, measured by public spending as a share of GDP, rose from 20.2% to 23.5% (figure 2). In Chile, major social reforms were introduced during the 1990s and many new programmes were begun. Between 1990 and 2000, social spending rose by an average of 7.9% a year in real terms, while in the same period total central government spending grew by an average of 6.6% a year in real terms. When the sectoral composition of social spending is analysed, what stands out is the growth in education spending, which increased by an average of 10.6% a year in real terms. It was followed

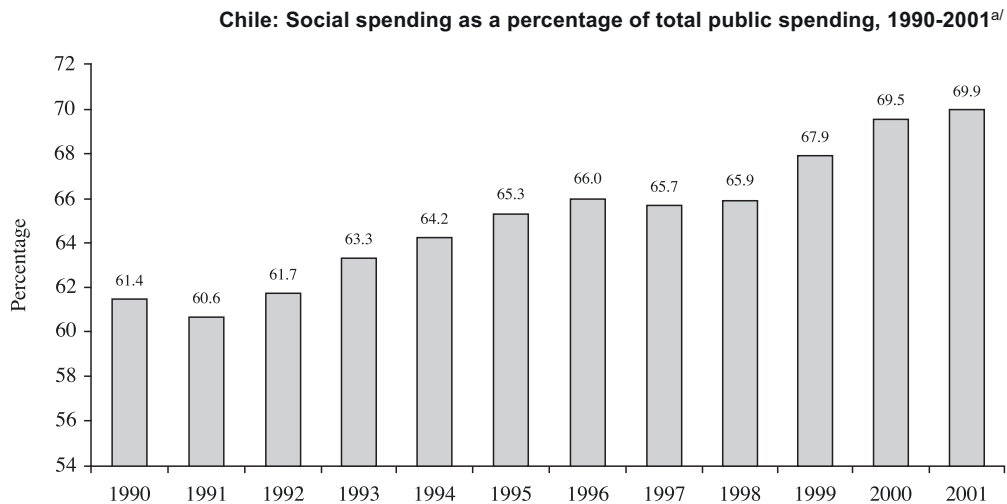


FIGURE 2



Source: Dirección de Presupuestos (2000 and 2001b).

FIGURE 3



Source: Dirección de Presupuestos (2001b and 2002).

<sup>a/</sup> Central government spending.

by health spending, which grew by an average of 9.4% a year.

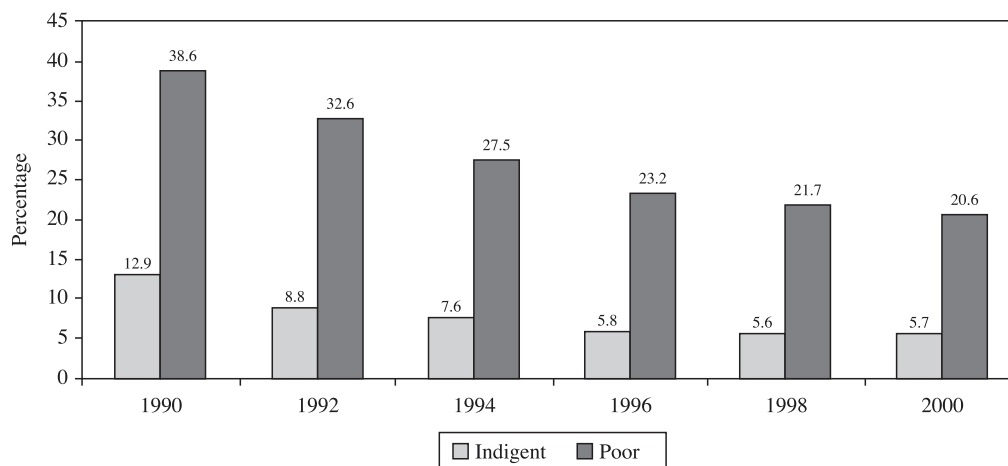
With this rate of growth social spending has substantially increased its share of the total, from 61.4% in 1990 to 69.9% in 2001 (figure 3). If social spending is broken down by sector, it transpires that the share going to education rose from 20% to 26%, while that going to health rose from 15% to 18% over the period. At the same time, pension spending fell from 49% to

40% of social spending and housing expenditure from 7% to 6%. The growth in social spending took it from 12.4% of GDP in 1990 to 16.4% in 2001 (figure 2).

From the social point of view, positive results have included a reduction in poverty from 38.6% of the population in 1990 to 20.6% in 2000, and of indigence from 12.9% in 1990 to 5.7% in 2000 (figure 4). As a proportion of households, poverty fell from 33.3% to 16.6% and indigence from 10.6% to 4.6% in the same

FIGURE 4

**Chile: Change in the incidence of poverty and indigence**  
(Percentage of total population)



Source: Mideplan (2001).

period. The average gap between the incomes of the population as a whole and those of the poor and indigent also fell significantly, from 14.8 to 7.1 times in the case of the poor and from 4.3 to 2.1 times in the case of indigence.

## 2. Coverage of the social protection system by function

The system of social protection can be classified by its functions as they relate to old age, survivors, disability, occupational accidents and diseases, the family (children and sickness), health care, public health, employment, unemployment, poverty and social exclusion. Table 2 analyses the coverage of the functions served by the system for selected population groups. Employees are covered by all the programmes of the social protection network, but this is not the case with own-account workers, whose coverage will depend on membership of and actual contributions to the system, among other factors. Both contributory and non-contributory systems have varying requirements, particularly as regards means testing in the case of non-contributory systems. The system of social protection for informal sectors and for family, temporary and self-employed workers is less comprehensive than that for employed workers owing, among other factors, to the characteristics of the population and the labour market at the time the programmes concerned were created. One of the challenges for the future is to consider how

the system can be modified or redesigned to deal with the situation of these population groups.

## 3. The social protection system and its distributive effect

In 2002, about 1,884,500 fewer people were living in poverty than in 1990. Nonetheless, inequality has remained virtually unchanged.

To take the distribution of autonomous income, between 1990 and 2000 the share of total income received by the first decile (lowest incomes) fell from 1.4% to 1.1%, while the tenth decile (highest incomes) increased its share from 42.2% to 42.3% in the same period. The distribution of monetary income, which includes autonomous income and cash benefits, is still quite regressive. In the 1990-2000 period, the income share of the first decile fell from 1.6% to 1.5% of the total, while that of the tenth decile fell from 41.8% to 41%.

In 1990, the Gini coefficient for this distribution was 0.58 and 0.57 for autonomous and monetary income, respectively, and the figures for this indicator remained unchanged in 2000. The 20/20 (quintiles) index, which measures the ratio between the average autonomous incomes of the fifth and first quintiles, rose from 14 to 15.3 between 1990 and 2000, while in the same period this ratio rose from 12.9 to 13.2 for monetary income.<sup>6</sup>

<sup>6</sup> Mideplan, Casen 1990 and 2000 surveys.

TABLE 2

## Chile: Social protection coverage by population group

Population group	Function								
	Old age	Survivors	Disability	Occupational accidents and diseases	Family children	Sickness	Public health	Unemployment	Poverty and social exclusion
People with employment contract	X	X	X	X	X	X	X	X	X
Self-employed workers	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>b</sup>	X	X	X	X	X
Self-employed non-agricultural workers and family members assisting them <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>b</sup>	X	X	X	X	X
Self-employed agricultural workers and family members assisting them <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>	X <sup>b</sup>	X	X	X	X	X
Unemployed in receipt of some unemployment benefit <sup>b</sup>	X <sup>c</sup>	X <sup>c</sup>	X <sup>c</sup>		X	X	X	X	X
Unemployed not in receipt of any unemployment benefit <sup>b</sup>	X <sup>c</sup>	X <sup>c</sup>	X <sup>c</sup>		X	X	X	X	X
Adults dependent upon employed persons (economically inactive spouses, relatives)	X <sup>a</sup>	X <sup>a</sup>	X <sup>a</sup>		X	X	X		X
Children of employed persons		X			X	X	X		X
Other economically inactive					X	X	X	X	X

Source: Arenas de Mesa and Benavides (2003).

<sup>a</sup> Entitled to contributory benefits such as old-age, survivor's or disability pensions only if they have voluntarily paid the required contributions. Otherwise, they are entitled only to apply for welfare pensions.

<sup>b</sup> Self-employed workers and family workers who voluntarily enrol in the system and pay contributions may be entitled to the benefits provided for by occupational accidents and diseases legislation.

<sup>c</sup> Entitled to contributory benefits such as old-age pensions only if they have paid the necessary contributions during periods of employment.

The stagnation of income distribution has given rise to a controversy about the mechanisms available to society for dealing with a problem of this scale that potentially calls into question the working of the economic and social model.

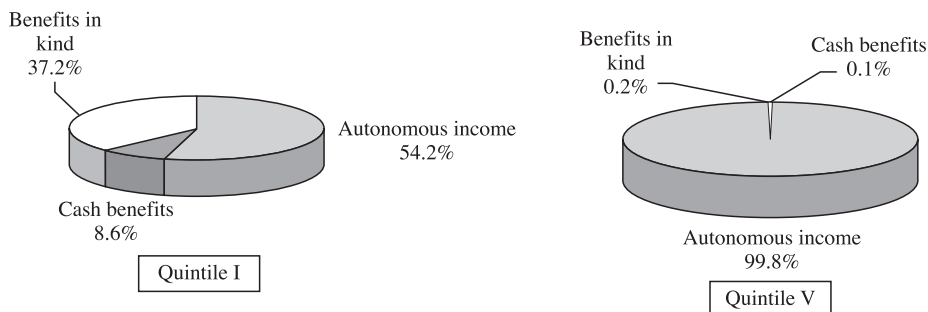
Between 1990 and 2000, social policy helped improve income distribution. The cash benefits provided by the State are highly focused on the low-income quintiles. For this reason, income distribution looks better when the analysis includes monetary transfers by the public sector. When monetary income is considered, i.e., autonomous income plus monetary transfers by the State in the form of welfare pensions, unemployment benefits, the different types of family allowance, drinking water subsidies and others, income distribution is better in every year from 1990 to 2000. In fact, the greatest contribution by social spending to improving income distribution was made in 2000. When cash benefits are considered, the ratio of average incomes between the richest 20% of the population and the poorest 20% falls from 15.3 to 13.2.

In 2000, cash benefits represented just 14% of the monetary income of the first autonomous income quintile, 4.3% of the monetary income of the second quintile and 1.7% of the monetary income of the third quintile. According to the Casen 2000 survey, income distribution improves significantly when the monetary contribution of the main health and education programmes is calculated, owing to the targeting of these programmes. In 2000, for example, benefits in kind represented almost 59% of monetary income for the first autonomous income quintile, 23% for the second quintile and 11% for the third.

When income distribution is corrected to include cash benefits and a monetary value for benefits in kind, the ratio between the average incomes of the fifth and first autonomous income quintiles falls from 15.3 to 8.3 in 2000. These figures show what a substantial progressive effect social policies have, not so much in terms of monetary incomes as in improved distribution of overall incomes when a monetary value is set on benefits in kind (figure 5).

FIGURE 5

**Chile: Composition of household incomes in the first and fifth autonomous per capita household income quintiles, 2000**  
(Percentages)



Source: Mideplan (2001).

## IV

### Fiscal policy, contingent liabilities and social policy institutions

#### 1. The role of fiscal policy in the development of social policy institutions

##### a) *The scope of fiscal policy*

Alongside monetary and exchange-rate policy, fiscal policy plays a crucial role in creating the conditions for economic growth in the country, which is fundamental if a new level of development is to be achieved. The principal way in which fiscal policy can foster economic growth is by playing a stabilizing role in the short term and pursuing sustainability in the long term.

At the same time, fiscal policy has a preponderant function in the financing of social spending, which in 2002 represented more than 70% of total public-sector expenditure. The State has a responsibility for the country's social and cultural development that complements its role in economic development, and this is discharged by working to generate greater opportunities for people and by building a social protection network, particularly for those who are more deprived and do not have proper access to basic goods and services. Measures to achieve this include sectoral social policies for education, health care, housing and pensions and transversal social policies such as the full

development of women and children at social risk and the eradication of poverty. It is essential for fiscal policy to provide stable, ongoing and effective financing for these policies, always seeking to improve the efficiency of public spending and the impact of the different programmes on the beneficiary population.

A good example of this are the bills to reform health care and set up the basic system of social protection known as Chile Solidario, which are going through Congress. In the first case, fiscal policy has not only sought to create budgetary frameworks for a system of health-care guarantees, but is concerning itself with the basic outlines of the desired health-care model. This has translated into a multitude of decisions about measures to strengthen primary care institutions, improve hospital management, implement a performance-related pay system for staff and develop health targets.

The Chile Solidario system represents an effort to create a new system of social protection that takes a comprehensive approach to extreme poverty, rather than simply supplying resources for implementation. The idea is that, with its national network, the Chile Solidario system should actively involve the State in identifying the neediest families so that benefits,

payments and public-sector provision really do go to those who need them most. This also involves an effort to coordinate the social networks and services of the State and public-sector providers for the poorest so that they can meet the specific needs of every family by working directly and personally with each.

If it is considered that over 70% of public spending is social in nature, it can easily be imagined that different strategic decisions on government policy orientation, going beyond the mere allocation of resources, are being taken day by day. There also have to be decisions about the way the public sector is organized and structured in its different functions. The use made of fiscal resources cannot be optimized without regard to the institutional arrangements that exist, since these usually determine the efficiency of public spending on social programmes.

b) *Progress and challenges*

The public-sector institutions dealing with social programmes are the outcome of a range of factors, including the founding principles of the modern State, the structural reforms of past decades and the fiscal policies applied in recent years.

The institutional basis of the State has made it possible to build a broad, stable public-sector system capable of attending to social priorities. Through State action, basic tasks have been undertaken in areas such as education, health care, housing, pensions and social protection. At the same time, the State has been increasingly active in regulating the economic and financial life of the country.

As the State has developed, there has been a shift in the type of activities performed by the public sector. This has mainly meant a substantial reduction in the productive functions of the State and a reallocation of functions between it and the private sector, which has been particularly dramatic in the sphere of social services provision. At the same time, the fiscal adjustment process of the 1980s taught hard lessons about the importance of public spending control and fiscal discipline.

In the 1990-2003 period, progress was made with this fiscal discipline and with measures to strengthen the regulation and oversight functions, the subcontracting of services, the restoration of working conditions in the public sector and the creation and enhancement of different social programmes.

The challenge now is to allocate fiscal resources in public-sector and social programmes in a way that is macroeconomically efficient. There is now general

agreement that the responsibility of the public-sector financial authority consists not just in spending within a framework of budgetary constraint, but in spending efficiently. For this it is important to recognize that financial management standards are crucial for the proper administration of public-sector institutions. The way resources are delivered and the responsibilities and commitments shared between the financial authority and administrative bodies largely determine the overall efficiency with which public funds are allocated and used.

By contrast with other countries, the institutional changes needed in the public sector do not centre on efforts to reduce staffing or cut chronic fiscal deficits. Rather, the need is to bring in management systems and procedures that ensure public resources are used as efficiently as possible and that enhance the overall impact of social policies on the beneficiary population.

Again, the sum of individual benefits and programmes does not necessarily constitute a social protection system. This is a problem that also affects most other countries in Latin America, partly because of the lack of a shared institutional framework, an information network linking together access services, thorough coordination among organizations and shared eligibility criteria.

These shortcomings result in the duplication of functions and in administration costs that undermine system inefficiency. Provision is often concentrated on beneficiaries who are better connected to the social network, with the result that potential beneficiaries who are not so connected are left uncovered. Even more importantly, synergies among the different organizations are forfeited owing to the lack of coordination.

To deal with these problems, there is a need to develop clear guidelines that give a preponderant role to fiscal policy. The dispersion of public-sector institutions and programmes is a challenge that needs to be dealt with, and the financial authority of the State can and should be applied to this objective in a comprehensive, transversal way through the functions currently performed by the different ministries, services and social programmes.

This is particularly important if we consider that there are currently some 400 social programmes involving 80 different institutions. At least 40 of these can be classed as social protection programmes.

The activities undertaken by these public-sector programmes and organizations have given citizens throughout the country greater access to basic social

services. Progress needs to be increased, however, not just as regards coverage, but also from a strategic point of view with priority being given to improving the quality of these different aspects of public-sector action. To this end, a management control system has been developed and improved in recent years, and this uses instruments such as performance indicators, institutional and programme evaluations, competitive funds for the financing of public-sector investment and programmes, management improvement programmes and comprehensive management reviews.<sup>7</sup>

Notwithstanding this progress, there is a need to improve on the current quality standards of the public sector. Among other measures, this will mean focusing on its products and services and reorganizing its internal operations.

Included within this is a need to strengthen the pillars on which a basic system of social protection rests: coherence and informed access for beneficiaries; priority for the family; effective targeting on the neediest groups; the development of selection mechanisms and eligibility conditions that are consistent across the different programmes; and the existence of appropriate and coherent State institutions (Arenas de Mesa and Benavides, 2003).

In respect of all this, it is up to fiscal policy to harmonize the maintenance of fiscal balances and make public services more proactive and responsible, and not the central authority. There is also a need to move forward with modernization of the budgetary process and to create and improve mechanisms that stimulate the development of public-sector management.

## 2. Contingent liabilities and the sustainability of social protection policies

The growing importance of the intertemporal dimension in the public finances has resulted in greater attention being given to the evaluation and management of the fiscal risk associated with the effects of public-sector assets and liabilities on future revenue and expenditure flows.

Because so little attention was paid to the issue in the past, there are still problems with fiscal valuation, quantification and management of these medium-term effects or commitments. There are countries where rigid spending discipline has been exercised, but where the same discipline has not been applied to explicit or

implicit financial commitments that sooner or later will have to be met.

One issue of particular importance is that of contingent liabilities in the public sector, which can go unnoticed until they materialize, at which point there is little or no prospect of their being neutralized by short-term measures.

The subject is particularly important from a social protection point of view, since if future fiscal commitments are not properly foreseen, there is a risk that resources intended for social ends may at some point have to be sacrificed to cover liabilities that have been accruing and maturing over time. This is why it is important to treat the management of contingent liabilities as one of the medium-term aspects of social protection policies.

### a) *Medium-term fiscal risks and contingent liabilities*

The different types of public-sector liabilities can be classified by the fiscal risk associated with each, in the light of two complementary aspects. The first aspect is whether the liabilities are explicit or implicit, and the second is whether they are direct or contingent (Polackova, 1998).

By an explicit liability is meant one that is contractually or legally recognized. We speak of implicit liabilities, on the other hand, when what is at stake is rather a moral imperative or a statement of objectives, such as a commitment to assist the indigent or people who lack pension provision. The distinction between direct and contingent liabilities depends on whether a triggering event is involved. Direct liabilities must be met in all circumstances, i.e., no particular event is required to make them effective. Contingent liabilities arise only when a particular event occurs, e.g., the bankruptcy or insolvency of a financial institution.

In most countries, explicit direct liabilities are commonly recognized, quantified and classified as liabilities. Examples of these are the external public-sector debt and expenditure included in the budget act. Implicit direct liabilities, meanwhile, almost always arise as State obligations deriving mainly from medium-term public policies. In Chile, welfare pensions (known as PASIS) belong to this category, and in this case the existence of a self-imposed legal obligation means that the State has an implicit commitment, of a moral and social nature, towards indigent people who lack pension provision.

Implicit contingent liabilities are not officially recognized and may derive from declared political objectives or political pressure from interest groups

<sup>7</sup> For further details, see Dirección de Presupuestos (2002).



existing at a particular time. Examples of such liabilities include private-sector bank rescues by the State when a severe financial crisis occurs, liabilities generated when local governments fail to repay non-guaranteed debts, or aid to victims of natural disasters.

Explicit contingent liabilities are those that have most commonly been classified as true contingent liabilities. They are spelt out in advance by law or contract, but whether the associated expenditure is triggered and how much it amounts to depend on a particular event actually taking place. Examples of this kind of liabilities include the State deposit guarantee, the minimum revenue guarantee for transport concessions and the State minimum pension guarantee for the private-sector pension system.

The recent increase in liabilities of this type is largely due to the changing role of the State, which has tended to move from financing and providing services directly to guaranteeing the achievement of particular results by the private sector. Consequently, there is an increasing need for efforts to identify and quantify them on a systematic, ongoing basis.

b) *Contingent liabilities that are important in Chile*

For Chile, an initial analysis has identified four major contingent liabilities (Dirección de Presupuestos, 2001a). They are as follows:

- i) The minimum revenue guarantee for transport concessions: contracts stipulate minimum revenues from tolls, guaranteed by the Ministry of Public Works, Transport and Telecommunications (MOP) for each year the concession is operated. If actual revenue is below the minimum, MOP has to make up the difference;
- ii) The State deposit guarantee: banking obligations for term deposits and investments in the form of savings accounts or personal or bearer instruments held by natural persons specifically include a State guarantee of 90% if the bank should fail, with a limit of 108 UF per person. There is also a 100% State guarantee for current account deposits, sight deposits and other liquid financial instruments. The bankruptcy of financial institutions is the uncertain event that makes this liability a contingent one;
- iii) Claims against the Treasury: the State and dependent institutions can be sued by individuals or organizations that believe they have been prejudiced by its activities. The fact that the State is only obliged to indemnify individuals if the ruling goes against the Treasury makes this a contingent liability;

- iv) The State minimum pension guarantee for the private-sector pension fund manager (AFP) system: the AFP system establishes that if the pension entitlement upon retirement of a worker who has paid at least 240 months of contributions is below a certain minimum, the State will make up the difference when that worker's individual account runs out. The obligation thus accepted by the Treasury is a subsidiary one, as its objective is to deal with the contingency whereby the resources accrued by the worker in his or her individual capitalization account, plus the *bono de reconocimiento* (an instrument representing the monetary value of payments into the pre-AFP system) where relevant, are insufficient to finance a minimum pension whose value is set by the State itself. Furthermore, this contingent liability is not the only obligation that arises for the State in relation to the pensions system. There is also the operating deficit of the old public pension system, payment of *bonos de reconocimiento*, welfare pensions (PASIS) and the deficit accrued on the military pensions paid by the armed forces and carabineros pension funds.

In quantifying these liabilities, it is usually necessary to distinguish between the maximum possible value of each and the expected value. An initial analysis conducted by the Ministry of Finance showed the total values of transport concessions to which minimum revenue guarantees applied and the maximum disbursement for which the State could be liable under the State deposit guarantee if every single banking institution were to fail, put at 28% of GDP. The study also includes the amounts paid out for claims against the Treasury and spending projections for the State minimum pension guarantee (Dirección de Presupuestos, 2001a).

There is also an obligation to submit to the National Congress, together with the 2004 budget bill, a supplementary financial report providing information on contingent liabilities, among other things. This report, which has now been presented, is in a standard format and contains information on variables that are not directly allowed for in the budget bill, but that may entail risks for the performance of the public finances in future. Another step in this direction is the creation of the Public Finances Division of the Budgetary Affairs Bureau which is responsible, among other functions, for supervising and administering the financial assets of public-sector enterprises and the relationship with multilateral banking organizations.

# V

## Concluding remarks

### 1. The modernization of fiscal policy

The challenges involved in implementing, measuring and evaluating fiscal policy are of particular importance for developing countries such as Chile. Management of the public finances on an intertemporal, countercyclical basis as a key element in a social protection strategy requires progress to be made towards better measurement, supervision and management of contingent liabilities and their medium-term effects.

This is particularly important considering that in most countries contingent liabilities relate to off-budget programmes. This status has sometimes allowed liabilities of this type to be used as a way of carrying on with programmes without affecting the short-term fiscal balance. In the medium and long term, however, these contingent liabilities considerably increase fiscal risk and expose the Treasury to situations that could be destabilizing for the public finances, thereby reducing the ability of fiscal policy to play a preponderant role in social protection for the most vulnerable.

For this reason, there is a need to improve fiscal management methodologies and practices related to the handling of contingent liabilities. Requirements include increasing the transparency of information about off-budget liabilities and moving from cash budgets to accrual-basis budgets that include contingent liabilities.

In this context, fiscal policy plays a decisive role in the institutional design of social protection systems, not only to achieve stable, sustained financing of these programmes over time, but through the application of institutional designs that are compatible with financial and fiscal capabilities and that efficiently meet the needs of the most vulnerable.

### 2. Challenges facing the social protection system

In the 1990s, changes in social indicators in different sectors revealed significant progress with the quality and equity of social spending and improvements in its targeting. Furthermore, policies designed to achieve macroeconomic and social stability were implemented in a coordinated fashion, and it has been claimed as a result that 1990s fiscal policy was an important factor in achieving economic and political stability.

The social protection system also faces new challenges, such as the demographic transition and the growing participation of women in the labour market. Combined with the levelling off of the indigence rate in 1996, 1998 and 2000, these changes suggest that a new strategy needs to be designed and executed so that instruments and policies intended to help those in extreme poverty can achieve the objective of delivering a basic social protection network.

Within this frame of reference, Chile needs to modernize the social protection system and implement a new institutional structure. One of the main tasks is an institutional redesign to strengthen and rationalize the State institutions responsible for the basic system of social protection, including an exhaustive review of all current benefits, transfers, funds and support programmes that do not form part of the core tasks of the sectoral ministries (education, health and housing) or contributory social security programmes, and then to develop out of them a system of social protection under the charge of a single institution, which is the “one-stop shop” concept. This one-stop shop principle should inform the organization of the new social protection system and be applied both at a macro institutional level and at the micro level of the individual beneficiary. At the macro level, management, resources and social protection network policy design need to be brought together in a single institution. At the micro level, a unified service to beneficiaries should mean better integration of different aspects of public-sector activity, simplified access to provision as unnecessary levels of interaction are done away with, and integration of activities, improving the targeting and efficiency of social protection.

Whether or not success is achieved in reducing indigence will largely depend on the institutional arrangements that determine how and where benefits are delivered. Particular attention needs to be paid, too, to the way in which these instruments actually reach beneficiaries. For indigence to be reduced, it may not be enough to offer instruments and benefits. A proactive approach also needs to be applied, centring on demand and beneficiaries, as this has the potential to increase the efficiency of the mechanisms designed. Such efforts to seek out demand, which must necessarily have a

strong local component, also need to be properly coordinated with the “one-stop shop” described above.

Another principle that needs to be considered in any new institutional design is the targeting unit. The unit of reference for the targeting of public action should be the family, and not the individual. Thus, the targeting of social protection could be improved by using a concept of family income that takes account of an actual family situation, understood as an overarching group that maintains close links rather than as the sum of the situations of individuals considered separately.

The same holds for targeting criteria, the third key principle of the new institutional arrangements needed for the basic social protection system. Although the great majority of social protection programmes are already closely targeted, there are still major challenges in this area. The results in terms of social protection achieved in the 1990s show the importance of proper targeting and the redistributive effects that social protection programmes can have. International evidence shows that the poverty reduction process can advance at different speeds in economies with similar growth rates. This is largely due to differences in income concentration and the rapidity with which this improves (ECLAC, 2002). In future, one of the key factors in achieving good results with poverty reduction will be proper targeting of the benefits of the social protection system. The more closely targeted public-sector action is, the greater and more rapid the social results will be. Specifically, the social protection system should give priority to the indigent and poor populations, particularly in the countryside.

Along with institutional redesign of the social protection system, it will be essential to strengthen,

expand and in some cases implement information systems for social protection policies. The selection mechanism currently used, the CAS II information system, will have to form part of this adaptation process so that new information requirements are properly met and social programmes are efficiently targeted. A new information and selection system could be used to improve social policy evaluation and follow-up and to cope with economic, demographic and social transition, which will require social protection systems to be continually reviewed and adapted.

This type of design will be conducive to greater public policy integration and to the coordination of sectoral efforts, and will prevent duplication of effort and waste of public resources. The only potential constraint on the basic social protection network will be budgetary restrictions, since it is these that limit the value of benefits and the number of new beneficiaries, for example, in the welfare pensions and family benefit system. One way of modernizing the social protection network would be to provide more benefits to those who best qualify for them in the case of extreme poverty and reaffirm their right to these benefits, which confirms still more the need for institutional redesign to guarantee these families' rights. Applying an approach of this kind, in conjunction with the other challenges facing the social protection network, is the basis for a new social policy strategy to reduce indigence and extreme poverty.

In summary, we can say that sustained economic development is the basic precondition for solving the problem of poverty and creating a stable, integrated system of social protection that gives people equality of opportunity. Social deprivation is an obstacle to any ambitions for a democratic society.

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# Implications *of the shift* in United States *farm policy*

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This article sets out to describe the main features of the new farm legislation in the United States, assess the extent to which it conforms to World Trade Organization (WTO) rules, and provide a preliminary assessment of its impact on Latin America. The article first looks at the new United States Farm Security and Rural Investment Act of 2002, identifying the different mechanisms used to support the country's farm producers. It then analyses that Act, referred to hereinafter as the 2002 Farm Act, in the light of the rules established and the commitments made in the Uruguay Round of the General Agreement on Tariffs and Trade (GATT). This is followed by an analysis of the possible impact of the new law on Latin American agriculture. Lastly, reference is made to recent developments in multilateral trade negotiations and the way they relate to the 2002 Farm Act.

# I

## Introduction

The Fifth Ministerial Conference of the World Trade Organization (WTO), held in Cancun, Mexico, from 10 to 14 September 2003 as part of the current Doha Round of Multilateral Trade Negotiations, brought to light the intentions of the United States Farm Security and Rural Investment Act of 2002 and showed that the United States was seeking to legitimize its arsenal of subsidies in the current round. At Cancun, the multilateral trade negotiations collapsed when agreement could not be reached on agriculture, owing to the defence of protectionist structures by the developed countries. The 2002 Farm Act represented a U-turn, with the United States moving from the liberalization camp to the protectionist camp.

The main characteristic of the subsidy regime enshrined in the 2002 Farm Act is its countercyclical nature, resulting in overproduction of commodities. This drives down prices and leads to surpluses of these products on the world market. The consequences of implementing the Act, however, go beyond the continuation of farm support programmes. By updating programme payment acreages and yields, the new rules have changed the nature of direct government payments, making them “recoupled” rather than “decoupled”.<sup>1</sup> This marks a backward step in relation to the modest progress made in the Uruguay Round.

United States commodity spending is expected to be between US\$ 15 billion and US\$ 20 billion a year for crops alone, representing an increase of between

70% and 80% over the provisions of the Federal Agriculture Improvement and Reform Act of 1996 (henceforth termed the 1996 Farm Act) in its last year of operation. The total budget of the 2002 Farm Act has been put at US\$ 180 billion over the full implementation period (six years). As a result, the United States is likely to exceed the annual limit of US\$ 19.1 billion bound at WTO for the Aggregate Measurement of Support (AMS).

While they differ in other respects, United States farm policy and the Common Agricultural Policy (CAP) of the European Union both seek to create protection systems capable of promoting and subsidizing their producers in sophisticated and higher value-added sectors.<sup>2</sup> This being so, subsidy increases by one of these two global players, and countermeasures by the other, are extremely harmful to Latin American countries that produce agricultural goods. Clearly, developing countries are not operating on a level playing field.

The issue is one of vital importance, since among the few measures available to developing countries to counteract protectionist measures by the great powers is their ability to bring in rules favourable to themselves in the trade negotiations being conducted within the framework of WTO. This being so, the 2002 Farm Act can be seen as a strategic device to alter the commitments accepted hitherto and change the ground rules of the current negotiations.

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<sup>1</sup> Payments are classified as coupled or decoupled depending on the effects that the subsidies concerned may have on production. If payments are linked to the volume of production, they are considered to be “coupled” because there is a direct relationship between the sums disbursed and production levels. If payments do not affect the volume of production, on the other hand, they are considered to be “decoupled”.

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<sup>2</sup> The value of farm gate output in the agricultural sectors of the United States and the European Union is almost identical, at about US\$ 190 billion a year (OECD, 2001). The main indicator used by the Organisation for Economic Co-operation and Development (OECD) to measure internal support, the Total Support Indicator (TSE), shows that in 2000 the United States spent US\$ 92.3 billion supporting agriculture, while the European Union spent US\$ 10.5 billion. In per capita terms, United States farmers receive approximately US\$ 338 a year, while those of the European Union receive US\$ 276 (European Union, 2002).



## II

### The United States Farm Security and Rural Investment Act (Public Law 107-171)

This law, termed the 2002 Farm Act in the present article, regulates the payments that the United States Government will make to support its farm producers in the period 2002-2007, laying down the amounts and access conditions for the different programmes. The first three titles of the Act (I. Commodity programmes, II. Conservation, and III. Trade) are the core of the support programmes for United States farmers that will have the greatest impact on agriculture in Latin America: programmes of direct payments, countercyclical payments, Marketing Assistance Loans and LDPS (loan deficiency payments)<sup>3</sup> in lieu of such loans, conservation programmes and export support programmes.

#### 1. Commodity programmes

The 2002 Farm Act treats the following as commodities: wheat, maize, sorghum, oats, barley, upland cotton, rice and soybeans and other oilseeds.<sup>4</sup> Income subsidies for commodity producers are provided mainly through the Direct Payment Program, the Counter-cyclical Payment Program and various marketing programmes.

##### a) *The Direct Payment Program*

Under this new programme, farmers receive direct subsidies from the Government. The Direct Payment Program replaces the Production Flexibility Contracts (PFC) programme, better known as AMTA (Agricultural Market Transition Act) payments, which existed under the 1996 Farm Act. AMTA payments were available for growers of wheat, maize, barley, sorghum, oats, cotton and rice. The 2002 Farm Act includes direct payments for these commodities, and also covers peanuts, soybeans and other oilseeds.

<sup>3</sup> See section II, paragraph 1.d), for more details about LDPS.

<sup>4</sup> The term "other oilseeds" includes sunflower, canola, mustard or any other kind of seeds as determined by the United States Secretary of Agriculture.

To receive assistance for crops covered by the Direct Payment Program, producers sign annual agreements for the period 2002-2007. How much they receive is calculated from a formula that includes: a payment rate (subsidy) per unit that is granted for each crop, 85% of the acreage registered by the producer, and a pre-set yield per crop for each farm. Thus, direct payment = (commodity payment rate) x (acreage x 0.85) x (pre-set yield).

When enrolling in these programmes, farmers have to choose between two methods for determining growing acreage. The new feature of this system is that before the 2002 Farm Act was passed, producers received direct payments calculated on the basis of the acreage planted as of the mid-1990s and the yields obtained in the 1980s. The 2002 Farm Act allows updating to 1998-2001 acreages for the calculation of direct payments. This adjustment is obviously going to increase budgetary costs substantially.

Aside from certain limitations on the planting of fruit and vegetables, producers are free to choose what crops they grow. For their part, they have to maintain the land given over to "farming" (growing, harvesting, grazing, prevention of soil erosion, etc.) and comply with rules relating to conservation of soil and the environment.

One important difference between the 2002 Farm Act and the 1996 Farm Act is that the latter placed

TABLE 1

#### United States: Direct payment rate

Commodity	Unit	Payment rate (dollars)
Wheat	Bushel	0.52
Maize	Bushel	0.28
Sorghum	Bushel	0.35
Barley	Bushel	0.24
Oats	Bushel	0.024
Upland cotton	Pound	0.0667
Rice	Hundredweight	2.35
Soybeans	Bushel	0.44
Other oilseeds	Pound	0.008
Peanuts	Ton	36.00

Source: United States Department of Agriculture.

annual limits on direct payment amounts, while the new law does not. Direct payments fell from US\$ 5.57 billion in 1996 to US\$ 4 billion in 2002. Some 85% of these annual amounts were split among wheat (26%), maize (46%) and cotton (12%). The 2002 Farm Act, on the other hand, sets specific amounts per unit of output. Consequently, there is no longer any ceiling on total annual assistance; rather, the amount depends on how much is produced.<sup>5</sup> These direct payments give growers of particular crops 10% to 20% additional income, on average, over and above market prices.

Another essential difference between the two laws is that under the 1996 Farm Act, AMTA payments were set only for output in the base years, and calculation rates were fixed for each crop. The 2002 Farm Act allows the base acreage qualifying for the programme to be updated using a four-year average (1998 to 2001) for the planted acreage. By contrast with AMTA payments, in short, the new subsidies provided by the Direct Payment Program do not decrease over time, are higher than the previous payments, and are tied to acreage.

#### b) *Counter-cyclical (or Counter-seasonal) Payments Program*

This new programme was designed to give farmers a better income safety net, the idea being to replace the emergency payments authorized by Congress from 1998 to 2001, which totalled from US\$ 2.9 billion to US\$ 5.5 billion a year. Countercyclical payments are made whenever the actual price of products is lower than a target price pre-established by the Government.

The actual price is calculated using the following formula:

$$\text{Actual price} = (1) + (2)$$

where:

(1) is the higher of *a* or *b*:

*a* is the average price over the last 12 months;

*b* is the average commodity national loan rate for Marketing Assistance Loans, and

(2) is the direct payment rate (table 1).

The target price is the price per bushel or pound at which the Government lends money to producers participating in support programmes. Farmers can take out a loan for all (or some) of their latest crop at any time from harvesting until the following March or May, depending on the crop.

For most of the products included in the assistance programme, the 1996 Farm Act stipulated that loan rates had to be equivalent to at least 85% of the average price for the previous five years, with maximum prices for some products (Basco, 2002). The 2002 Farm Act sets lending rates for 2002-2003 and 2004-2007, those for the latter period being slightly lower. For the commodities included (other than soybeans), the new rates are higher than the maximums authorized in the previous legislation. The most significant change in this policy instrument is the creation of fixed lending rates instead of variable rates based on the price averages of previous years.

Countercyclical payments are arrived at by comparing the highest actual price (calculated by one of the two methods described) with the target price set by the Government. Once this comparison has been made to determine whether or not a payment is due to producers, countercyclical payment amounts are calculated in much the same way as direct payments. The variables used are 85% of the growing acreage registered by the producer, the yield per commodity of each agricultural establishment or farm, and a countercyclical payment rate. The acreage is calculated using the same two methods as for direct payments; in turn, the yield per crop can be updated in three different ways, including re-rating of yields qualifying for inclusion up to 93.5% of 1998-2001 yields. The resulting formula is:

$$\text{Countercyclical payment} = (\text{countercyclical payment rate}) \times (\text{growing acreage} \times 0.85) \times (\text{pre-established yield})$$

where the countercyclical payment rate = (target price) - (payment rate) - (the higher of *a*, the average price over the last 12 months, or *b*, the loan rate).

TABLE 2

#### United States: Target prices (Dollars)

Commodity	Unit	2002-2003	2004-2007
Wheat	Bushel	3.86	3.92
Maize	Bushel	2.60	2.63
Sorghum	Bushel	2.54	2.57
Barley	Bushel	3.21	2.24
Oats	Bushel	1.40	1.44
Upland cotton	Pound	0.724	0.724
Rice	Hundredweight	10.50	10.50
Soybeans	Bushel	5.80	5.80
Other oilseeds	Pound	0.098	0.101
Peanuts	Ton	495.00	495.00

Source: United States Department of Agriculture.

<sup>5</sup> See United States Department of Agriculture, [www.usda.gov](http://www.usda.gov).

Target prices are true support prices in that they guarantee producers a minimum income irrespective of fluctuations in market prices. This new policy almost completely insulates United States producers from market signals and represents a step back in United States farm policy from the liberalization process begun by the Government. Given the rise in yields over recent years, particularly for certain products, these payments will increase disproportionately.

c) *Marketing assistance loans and payments in lieu*

The United States Government offers a range of non-recourse loans to farm producers, repayable after nine months. The 2002 Farm Act gives continuity to these programmes, widens the range of commodities covered and does away with the requirement for an annual direct payment agreement to have been signed as a precondition for receiving the loan. Loans granted to commodity producers can be repaid in three ways: i) by paying off the loan at a set rate plus the interest established by the Commodity Credit Corporation (CCC); ii) by transferring the crops grown to the Government, or iii) by paying off the loan at an alternative rate.

Marketing assistance loans enable producers to pay off non-recourse commodity loans at a rate lower than the original one, provided that world prices for the commodity concerned are lower than the initial payment rate plus interest; the idea behind this is for the Government to avoid an excessive build-up of stocks.

When world prices for the commodity in question are lower than the initial payment rate plus interest for the non-recourse loans granted, farm producers have an alternative: the Secretary of Agriculture is entitled to make discretionary payments directly to farmers who undertake not to apply for non-recourse commodity loans. Known as loan deficiency payments or LDPs, these are calculated by multiplying the payment rate of the marketing loan by the amount of the commodity qualifying for lending. In this way, the farmer does not take on the risk of a marketing loan. LDPs are countercyclical by their very nature, since more is paid out in price subsidies when prices are low and less when they are high.

Marketing assistance loans and LDPs are designed to keep potential credit arrears to a minimum and prevent the Government from having to build up commodity stocks. The 2002 Farm Act adds peanuts, wool, mohair, honey, chickpeas, lentils and peas to the products eligible for this type of loan (which are wheat, maize, sorghum, cotton, rice, barley, soybeans and other oilseeds).

d) *Support programmes by sector and product*

This section will describe different forms of assistance for producers of dairy products, peanuts, sugar, wool, angora, honey, chickpeas, lentils, apples, fruit and vegetables.

i) *Dairy products.* The 2002 Farm Act extends application of the government procurement programme and export incentive programme for dairy products, dismantles the North-East Dairy Compact programme (giving special treatment to the New England region) and sets up a new programme of payments for commodity marketing losses, known as dairy market loss payments, to replace the emergency payments authorized by Congress (market loss assistance) and made to dairy producers in 1999, 2000 and 2001.

The government procurement programme authorizes the Commodity Credit Corporation (CCC) to purchase butter, powdered skimmed milk and cheese at a pre-set minimum price. The prices set by the 1996 Farm Act were to decrease from 1996 until 1999, when they were to be done away with. The promise to abolish these price supports was not kept and the pre-set prices were extended until 31 May 2002. The 2002 Farm Act maintains these prices at their 1999 level and does not provide for any reduction until 2007.

Under the Dairy Market Loss Payment programme already alluded to, producers receive direct monthly payments whenever the monthly price of milk generally, skimmed milk, low-fat milk, etc. (Class 1 products according to federal marketing orders)<sup>6</sup> falls below US\$ 16.94 per hundredweight. Payments are limited to 2.4 million pounds of milk per organization per year, and the number of producers benefiting from these operations does not affect the scope of this limitation.

The Dairy Export Incentive Program (one of the export support programmes analysed further on) subsidizes exports of United States dairy products by means of bidding-based payments to companies selling dairy products for export. It specifically provides that the Secretary of Agriculture must authorize enough subsidies to achieve the maximum dairy export volumes permitted under the GATT Uruguay Round commitments. This programme is used for market

<sup>6</sup> Federal marketing orders for dairy products were designed to help establish and maintain clear, orderly marketing conditions. These provisions establish a pricing system whereby prices are classified and set according to the products milk is used for. Class 1 is the first step in an 11-category classification.

development purposes and was extended until 2007 by the 2002 Farm Act.

ii) *Peanuts*. The peanut price support programme is abolished and replaced by a system of direct payments, countercyclical payments and marketing loans much like the programmes for other commodities. The internal peanut marketing quota applied under the 1996 Farm Act is abolished and quota holders are compensated through a quota repurchase system. Under this new system, peanut growers have the same rights of access to government support programmes.

iii) *Sugar*. Before 1996, the sugar programme had to be administered on a no net cost basis. This no net cost condition meant that the CCC was debarred from building up stocks of sugar acquired under commodity assistance programmes. This requirement was met by adjusting import quotas or setting internal marketing allotments. The 1996 Farm Act did not include the no net cost condition and authority to set marketing allotments was not renewed. The 2002 Farm Act restored the mechanism, to prevent stocks built up under non-recourse loan programmes being diverted to the Government; it authorizes the non-recourse loan programme until 2007 (18 cents per pound of unrefined cane sugar and 22.9 cents per pound of refined beet sugar), and abolishes sugar marketing payments, along with the penalties for crop diversion.

Similarly, the 2002 Farm Act reintroduces a supply control system that was abolished by the 1996 Farm Act: the Secretary of Agriculture is authorized to set market quotas in order to balance out supply and demand, prevent products being diverted into government stocks and comply with sugar import commitments. The new law also creates a loan programme to facilitate sugar storage, which provides cane and beet sugar processors with financing to build or improve storage facilities.

The payment in kind (PIK) programme continues. This programme gives beet sugar producers the option of swapping part of their crop for sugar held in CCC stocks.

The sugar import quota is maintained, restricting imports of this product to support the domestic price. The quota is 1.23 million tons of raw cane sugar and 24,250 tons of refined sugar.

iv) *Wool, angora, honey, chickpeas and lentils*. These commodities, which were not supported by the 1996 Farm Act (except by ad hoc payments) have a guaranteed level of support under the 2002 Farm Act

through Marketing Assistance Loans and LDPS. The number of products supported directly by the Government has thus increased, and the possibility of new products being included in the near future has been established.

v) *Apples, fruit and vegetables*. The 2002 Farm Act includes US\$ 100 million of subsidies for apple producers, supposedly to compensate for low prices in 2000, and over US\$ 200 million in additional funding to purchase and distribute fruit and vegetables under various programmes.

e) *Maximum limits on commodity programme payments*

For direct payments, the limit has been kept at US\$ 40,000 per person. For counter-cyclical payments, the limit is US\$ 65,000. Marketing loan payments have a maximum of US\$ 75,000. Producers whose gross revenues average more than US\$ 2.5 million over three years will be entitled to payments only if 75% of these revenues are from agriculture.

The 2002 Farm Act keeps the three-entity rule, whereby an individual farmer who owns three farms or agricultural establishments can receive a full direct annual payment for the first farm and half-payment for each of the others. In other words, the farmer may receive up to twice the total annual payment in the form of contract and marketing loan profit payments for three separate farms (one full payment for the first operation and up to half for each of the other two).

Although the 2002 Farm Act contains measures to limit subsidies under specific programmes to a total of US\$ 360,000 per agricultural establishment or farm, a range of exceptions in the Act may have the effect of nullifying this limit. By means of crop loan certificates, for example, farmers who have taken out non-recourse loans for the largest amounts and have had to hand over their crops as payment can purchase these certificates from the CCC at a rate lower than the original rate plus interest on the loan they took out, and then swap them for the crops delivered as surety. In this way, big producers recover their crops and pay off their loans at a lower rate. With provisions like this, the many payments provided for by the 2002 Farm Act are going to benefit large producers rather than the small farmers at whom this law is supposedly aimed.

f) *The cost of commodity subsidies*

Early estimates put the cost of direct subsidies and countercyclical payments at between US\$ 11 billion



and US\$ 12 billion a year. Payments made under the loan programme in 1999-2001 have totalled between US\$ 6 billion and US\$ 8 billion, and if prices were to hold steady then spending would be similar in the coming years. Payments are expected to increase, however, because the 2002 Farm Act will hasten the fall in the prices of the affected products.

Thus, it is estimated that annual commodity spending will reach between US\$ 15 billion and US\$ 20 billion a year for crops alone. This represents a rise of 70% (other preliminary estimates put it as high as 80%) over the stipulations of the 1996 Farm Act in its last year of operation (European Union, 2002).

## 2. Conservation programmes

Land and natural resource conservation programmes have existed since the 1930s and are of great importance in United States agricultural policy. As well as promoting environmental values, payments linked to the conservation of natural resources can act as measures of support for agricultural production.

The 1996 Farm Act provided for a number of conservation programmes, among them the Conservation Reserve Program (CRP), the Wetlands Reserve Program (WRP) and the Environmental Quality Incentives Program (EQIP). In its conservation title, the 2002 Farm Act maintains existing programmes and creates a new one, the Conservation Security Program (CSP), which offers producers incentives to adopt or maintain a range of structural management practices targeted on one or more resources of interest, such as soil, water and wildlife. This title provides for an 80% increase in the funding hitherto assigned to environmental and conservation programmes, bringing the combined total to US\$ 17.1 billion.

The Conservation Reserve Program (CRP) entails annual payments by the Government and a cost sharing system. Owners of farmland sign 10 to 15-year contracts in which they agree to retire cropland and establish long-term land cover (such as trees or grass) in exchange for annual payments. When this programme began its main objective was to reduce erosion, but the 1990 Farm Act extended its environmental objectives to water quality and wildlife. Annual disbursements during the 1990s averaged US\$ 1.5 billion. The land included varied from 30 to 36 million acres and there was a ceiling of 36.4 million acres, representing about an eighth of all land suitable for commodity growing. The 2002 Farm Act increased the maximum coverage of this programme to 39.2 million acres and changed the qualifying criteria.

The Wetlands Reserve Program (WRP) is based on a system of State purchases and of cost sharing and payment facilities as incentives to bring producers into the programme. The 1996 Farm Act authorized the payment of US\$ 1.3 billion over a seven-year period to help farmers and ranchers carry out environmental improvements and conservation work on their properties; the maximum land area covered by the programme was 1.075 million acres. The 2002 Farm Act increases this to 2.275 million acres, with a maximum annual enrolment of 250,000 acres.

The Environmental Quality Incentives Program (EQIP) offers technical assistance, cost sharing and financial incentives to help farmers and ranchers adopt and implement environmental improvements and conservation measures in their establishments. The 1996 Farm Act authorized up to US\$ 1.3 billion for the seven years of the implementation period. The 2002 Farm Act significantly increases the funding for this programme, as it provides for a gradual increase from US\$ 400 million to US\$ 1.3 billion for the period 2002-2007.

## 3. Export support programmes

Products from Latin American countries often have to compete with United States goods in both domestic and export markets. The support programmes run by the United States for its own exports facilitate the country's export operations abroad by means of special incentives and credit facilities for potential buyers and infrastructure abroad for storing United States farm produce. The United States Government operates a number of export assistance programmes: the Export Enhancement Program, the Dairy Export Incentive Program, the Market Access Program, the Foreign Market Development Cooperator Program and the Emerging Markets Program. Meanwhile, the United States Department of Agriculture runs four export credit guarantee programmes: i) the CCC-run short-term Export Credit Guarantee Program (GSM-102), which is the largest export promotion programme in the United States; ii) the intermediate-term Export Credit Guarantee Program (GSM-103); iii) the Supplier Credit Guarantee Program, and iv) the Credit Guarantee Programme for infrastructure. The provisions of the 2002 Farm Act affect the different United States export assistance programmes as follows:

- The 1996 Farm Act allocated an annual minimum of US\$ 5.5 billion to the GSM-102 and GSM-103

programmes and specified the minimum proportion of credit guarantees that had to be used for high-value processed products: 25% in 1996 and 1997, 30% in 1998 and 1999, and 35% thereafter. The 2002 Farm Act keeps these provisions, so that no less than 35% of guarantees have to be used for products of this type.

- The term of short-term credits granted under the Supplier Credit Guarantee Program is extended by the 2002 Farm Act from 180 to 360 days, with a view to encouraging United States exporters to expand, maintain and develop markets for their country's export products in areas where commercial financing may not be available without a CCC payment guarantee.
- The 2002 Farm Act provides for US\$ 1 billion to go to direct credit or credit guarantee programmes for exports to emerging markets, the aim being to provide facilities and services or supply United States products to improve transport, handling, marketing, processing, storage or distribution conditions for United States farm products in the markets identified.
- The United States supplies food aid through the Food for Progress programme (Public Law 480). The 2002 Farm Act allows the programme to be extended until 2007. It also includes conflict prevention as an objective and raises minimum assistance levels from 1.875 billion to 2.5 billion metric tons a year, among other provisions.
- As well as modifying existing programmes, the 2002 Farm Act establishes new programmes with the aim of eliminating, resolving or mitigating

sanitary and phytosanitary barriers and other technical obstacles to trade:

- The Biotechnology and Agricultural Trade Program deals with non-tariff regulatory barriers to United States commodity exports. It authorizes donations for public-sector and private-sector projects concerned with biotechnology, food safety, diseases or other sanitary and phytosanitary issues.
- The Technical Assistance for Specialty Crops Program helps exporters overcome particular barriers that prevent or jeopardize exports of specialized products from the United States, by means of public- and private-sector projects and technical assistance to deal with delicate strategic issues of market retention, access and expansion. The amount made available for this is US\$ 19 million.

The new feature of the 2002 Farm Act where export support programmes are concerned is the requirement for the United States Agriculture Secretary and Trade Representative to consult regularly with Senate and House of Representatives committees on negotiations over export credit guarantee programmes for farm produce that are conducted in WTO and the Organisation for Economic Co-operation and Development (OECD). If the United States and other OECD countries have so far been unable to commit themselves to minimum restraints on the use of government-guaranteed export credits and export subsidies, this new consultation mechanism is going to make it considerably harder to achieve, even if the United States makes an ambitious proposal at WTO to dismantle such credits.



### III

## The 2002 Farm Act and WTO provisions

### 1. Agricultural assistance measures and their classification by WTO

The WTO Agreement on Agriculture<sup>7</sup> places internal measures of assistance for the production and marketing of farm produce in three “compartments”: “amber box” measures, “green box” measures and “blue box” measures. These “compartments”, which embody the general rules for subsidy use in agriculture, are of the greatest importance for understanding the nature of the new programmes included in the 2002 Farm Act.

- Amber box measures are those considered trade-distorting. They include, among others, support prices, direct payments that affect output volume (“coupled payments”) and input and capital subsidies. These measures are subject to progressive reductions and periodic review, and are the ones taken into account to calculate the Aggregate Measurement of Support (AMS).
- Green box measures are those that do not involve direct payments to producers, have little or no effect on output and trade, do not increase market prices, and have to be financed out of the public budget. These measures are identified as “decoupled payments” and are exempt from reduction commitments.
- Blue box measures are direct payments made under output limitation programmes based on fixed acreages and yields, apply to 85% or less of the base output level and, in the case of livestock payments, are made for a fixed number of head. These payments are exempt from AMS reduction commitments.
- The *de minimis* clause is an exception to the amber box reductions. It states that small-scale subsidies do not have to be reduced or abolished. Assistance for specific products must not exceed 5% of the total output value of the product in the case of developed countries or 10% in the case of developing ones.

Internal assistance that is not product-specific must not exceed 5% of total agricultural output by value in the case of developed countries or 10% in the case of developing ones.

A key condition for classifying subsidies is whether or not payments to producers are decoupled, i.e., whether or not they are independent of output, domestic and external prices and input use. Insofar as these payments are pre-set and do not vary with output or market conditions, the relationship between support and production is broken. To put it another way, output would be virtually the same with or without these payments. Consequently, such decoupled payments are said to be “minimally distorting”.

Underlying the idea of decoupled payments and their relatively undistorting effects is the fact that freedom to plant and choose among crops year by year reduces the distortions that arise when subsidies are based on a particular crop. If all support to agriculture were decoupled, farmers would respond to marginal price changes in world markets and would thus produce the same as they would have done had there been no market intervention. Where payments are not tied to any of the main variables influencing production decisions, farmers will invest their money in the activities that offer the highest returns. But the most important thing in judging whether so-called decoupled payments are market-distorting or not is to ascertain whether this assistance encourages farmers to plant a larger acreage or produce more with the aim of receiving greater benefits from the government in future.

Depending on whether or not payments qualify as decoupled, subsidies are classified in the different compartments and the regimes they should follow are determined. If payments are coupled to some variable that affects the volume of production and do not comply with “blue box” rules, they belong in the “amber box” and are thus subject to the limits established by the Aggregate Measurement of Support and to reduction commitments. Conversely, coupled payments that do meet the “blue box” provisions classify as exceptions and are exempt from the reduction commitments. Where payments are decoupled, they belong in the

<sup>7</sup> See GATT (1994).

“green box” and are not subject to AMS limitations or reduction commitments.

## 2. Classifying direct payment programmes

Being coupled, direct payments rightly belong in the amber box and should count towards AMS commitments, i.e., towards the annual farm support spending limit to which the United States has committed itself at WTO.

In 1996, LDPS were replaced by the decoupled payments established by the AMTA. This seemed to be the beginning of a commitment by the United States to move away from the highly coupled nature of the traditional farm income support programmes created since the 1930s. When AMTA payments were introduced in 1996, they seemed to be quite closely attuned to the requirements for decoupled payments. They were applied on the basis of fixed acreages and yields corresponding to pre-1996 averages, they did not vary with changes in output, prices or input use, and farmers were not required to have grown any crop previously to receive them. The United States reported them to WTO as decoupled payments.

Until 2001, payments classified as decoupled met clearly defined criteria based on pre-1996 acreages and yields. The 2002 Farm Act, however, offers farmers the option of updating these acreages and yields to 1998-2001 averages. Consequently, farmers who planted more and/or cultivated their land more intensively from 1996 onward, in the expectation that their lobbyists would be able to persuade Congress to update the future payment basis and thus increase the amount of their payments at a later date, succeeded in achieving a permanent increase in their incomes from decoupled payments.

## 3. Classifying countercyclical payment programmes

According to the provisions of the WTO Agreement on Agriculture, subsidies tied to product prices should be in the amber box, and should count towards the upper limits agreed at WTO. The sponsors of the 2002 Farm Act maintain, however, that countercyclical subsidies should not be set against the agreed maximum, but against the *de minimis* subsidies permitted. They also maintain that these subsidies are non-specific.

The *de minimis* clause, however, allows subsidies not exceeding 5% of the output value of each crop included in the payments to be exempted from the AMS

calculation. For payments that are not product-specific, the exemption is based on the total value of agricultural output. Given the high value of United States agricultural production (some US\$ 190 billion a year), 5% of this (about US\$ 10 billion) is enough to cover any kind of subsidy. Furthermore, the 2002 Farm Act states that countercyclical payments are to be determined by what was grown in the base year, which means that they will reflect the price movements of each crop included. It is clear that these payments are product-specific and cannot be classified as non-specific.

Again, approvals of emergency assistance packages from 1998 to 2001 rose as prices fell. These payments were distributed among farmers on the basis of the same acreages and yields as were used for AMTA payments. After a number of delays in submitting the required notifications, and after lengthy discussions in government, academia and producers' organizations, the United States Government began to notify these additional payments to WTO as part of its AMS, i.e., as being among the internal assistance measures deemed market-distorting and thus subject to the agreed reductions.

## 4. Is the 2002 Farm Act in breach of the Aggregate Measurement of Support commitments?

The question of how different support programmes should be classified is not a minor one, since the answer determines whether the 2002 Farm Act conforms to the limits agreed by the United States in the AMS. The AMS is the annual level of assistance, expressed in monetary terms, that is provided to an agricultural commodity or to the producers of the base commodity, or the level of non-product-specific assistance provided to farmers in general. The AMS applies to all internal measures of support, except those included in the green and blue boxes and in the *de minimis* clause.

The most important thing is to know what is going to happen to the AMS limit of US\$ 19.1 billion a year to which the United States committed itself in the Uruguay Round. The total budget for the 2002 Farm Act has been put at US\$ 180 billion over the implementation period (European Union, 2002). Given the obvious discrepancy between the upper limit bound at WTO and the expenditure anticipated, disbursements seem likely to exceed the limit bound in the AMS. Some statements made by the United States Department of Agriculture also suggest, however, that there will be a heated debate over how each expenditure item should be classified,

to determine whether or not it should be counted in the AMS.

To avoid problems, the 2002 Farm Act authorizes the Agriculture Secretary to make adjustments “insofar as this is feasible” to prevent WTO commitments from being exceeded. One extreme option should excessive disbursement occur is to require farmers to return any portion of the payments they have received that exceeds the limit, but this would raise both operational problems and political ones, given the strength of farmers’ objections. Another option is simply to break the agreements and then deal with the complaints of the country or countries affected, which can be done through the dispute settlement system, or to offer compensation or find some other innovative way of reclassifying the subsidies. A third possibility is that the United States is not too worried about the long-term effects,

and that the 2002 Farm Act is in fact a strategic negotiating device created with the intention of altering existing commitments and changing the ground rules of the current WTO negotiations.

As for the question of whether the 2002 Farm Act is in breach of the rules agreed to within WTO, opinions are divided. Hitherto there has been no formal submission to WTO questioning the legality of the new Act, although many delegations, including those of Brazil, Colombia, Paraguay and Uruguay, have expressed concern about its content and some Governments (that of Brazil, for example) have informed the press that they intend to begin consultations within WTO (the first step in challenging a measure under the dispute settlement system). The matter can only be settled in the longer term, however, once the annual results of the AMS calculation are known.

## IV

### The impact of the 2002 Farm Act on Latin American agriculture

The United States Farm Act of 2002 is a complex piece of legislation, and this makes it difficult to evaluate fully the economic and trade impact that it will have. Even so, a preliminary attempt can be made to gauge its possible implications for agriculture in the Latin American countries.

#### 1. The effects of certain support programmes

The United States exports about 25% of its agricultural output, a figure that rises to as much as 40% for some crops, such as wheat. LDPs and countercyclical payments will lower the export prices of United States products in receipt of them, so that they will be subsidized when they reach world markets.

Countercyclical payments and LDPs guarantee United States farmers a certain level of income. Consequently, farmers pay less attention to market signals, something that is particularly harmful at times when prices are depressed. Because of the way these payment mechanisms work, a fall in prices may mean that farmers actually receive higher incomes than they

would have if market prices were higher. This can create a disincentive to rein in overproduction. Because the guaranteed income means an assured return on crops, there is no reason whatsoever why United States farmers should refrain from maximizing their output, or worry about the prospects of fetching a good price for their crop. The most likely outcome is that overproduction will saturate the market and drive prices down, while the incomes of United States farmers will be protected by yet larger LDPs and countercyclical payments.

The central fact is that subsidies result in overproduction, driving down prices and leading to a kind of dumping of commodities on the world market. According to preliminary estimates, international prices might be driven down by some 5% to 8% by the 2002 Farm Act (Gardner, 2002). The kind of unfair competition thus generated by the 2002 Farm Act entails serious threats to farm producers, not only in Latin America but in all countries involved in agriculture.

In fact, these support programmes not only result in inefficient production, but encourage monopoly practices. This is happening, for example, with grain

and cotton producers. Of the more than 2 million farm producers receiving government subsidies in the United States, 10% account for 67% of the US\$ 19 billion paid out each year (Clarín, 2002). According to United States statistics (United States Department of Agriculture, 2002), these big farmers have used government cheques to enlarge their holdings by buying up neighbouring farms and thus increase output. The business is still profitable for them, because any shortfall is made up by the Government.

Another consequence of the 2002 Farm Act is that, by bringing down the price of commodities in the domestic market, it provides the food processing industry with cheap inputs. Beef, poultry, pork and milk producers are a good example: cheaper fodder increases their competitiveness in external markets or discourages imports of these products from more efficient countries. This forces marginal exporters to withdraw from the market, whereupon subsidized exports from the United States may well fill the gap. By artificially lowering commodity prices in the domestic market, the United States makes itself less attractive to potential importers. The insulation of United States producers from international market signals thus comes full circle.

## 2. The impact by sector and country

- The products of greatest interest to the countries in the region, such as sugar, citrus fruits, orange, grapefruit and lemon juice, apples, vegetables in general, peanuts, cotton and tobacco, are very unlikely to be allowed greater access to the United States market. The effects of the 2002 Farm Act

on imports and local output will vary from country to country. In the case of wheat, the United States will increase its competitiveness relative to Argentina and Canada in all the markets of the region. The new law also seems to be taking the battle to Canada in the market for high-quality wheat.

- United States subsidies for maize and sorghum will particularly affect small local growers in the Latin American countries, who are going to suffer from their impact and find it hard to survive. The region's big producers will see their export revenues fall and local consumers will benefit from the lower prices. Soybean subsidies will mainly affect Brazil and Argentina, whose export revenues will drop because of lower prices.
- The new United States regulations will adversely affect dairy production in all the Latin American countries. Continuing and increased subsidies for domestic production and export of dairy products will depress international prices yet further. The region's less competitive producers are going to find it hard to stay in business because the tariff levels required for them to do so might exceed the aggregate commitments accepted at WTO.
- Local poultry producers will be among the worst affected. Cheaper food, and subsidies in general, will increase the competitiveness of United States poultry exports and this will force an adjustment in local output, particularly in countries that retain protection for maize and/or sorghum.
- Exports of United States prepared foods, such as breakfast cereals, will become more competitive, discouraging local production.

# V

## Final considerations

The United States Farm Act of 2002 has a number of objectives, and these operate on two levels at once. On the one hand, it represents an effort to bolster the production capacity of the United States farm sector and respond to pressure from traditional farming lobbies. On the other, it is an attempt to change the ground rules of the multilateral system governing agriculture.

This paper has provided details of the support programmes included in the Act that are likely to have the greatest effect on the economies and markets of the Latin American countries. It has sought to characterize the new programmes established by the Act by analysing WTO rules on internal support measures and the classification of subsidies. In an effort to calculate the impact the new United States farm support measures

may have on Latin American agriculture, it has outlined the long-term effects that might arise for the different sectors and commodities in the Latin American countries.

The 2002 Farm Act raises the number of protection and assistance mechanisms for the United States agricultural sector, and increases the sums provided for by the 1996 Farm Act. It is very likely to insulate United States farmers/agricultural producers from market signals and depress international commodity prices. By updating the acreages and yields used as the basis for determining subsidy amounts, the new law changes the payments made by the Government from “decoupled” to “recoupled” ones. Given the characteristics of the support mechanisms used, the funds that will have to be disbursed under the 2002 Farm Act will probably exceed the Aggregate Measurement of Support bound by the United States at WTO.

Some recent events have borne out the initial fears about the United States position on agricultural support measures and their relationship with the 2002 Farm Act. At the recent WTO Ministerial Conference in Cancun, corresponding to the Doha Round of Multilateral Trade Negotiations, the trade negotiations collapsed because agreement could not be reached on agriculture.

The path taken by the United States in implementing the 2002 Farm Act has revealed a position very different from the official one of support for trade

liberalization. It even seems to be running counter to the recent reforms made by the European Union to its Common Agricultural Policy, the thrust of which was to decouple payments to farmers and reduce blue box measures, although green box ones increased. The alliances which emerged during the agriculture negotiations laid bare the protectionist position of the United States. By contrast with the Uruguay Round, where the main struggle in agriculture was between the United States and the European Union over subsidy cuts, in the current negotiations the United States and the European Union submitted a joint negotiating proposal. This proposal, which was quite far from the original United States proposal, alerted developing countries and obliged them to create a new alliance to counter this position.

The failure of the Cancun Conference raises serious doubts about the prospects for completing the Doha Round in 2005, the date set for ending the negotiations. This could represent both a threat and an opportunity for the Latin American countries; what is absolutely certain is that the 2002 Farm Act is a strategic device to alter the commitments accepted and change the ground rules in the current WTO negotiations. This being so, the greatest concern, apart from the large sums set aside for subsidies, has to be about the efforts to reclassify assistance programmes at WTO in a way that legitimizes the new United States support programmes.

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# Trade liberalization *and economic growth* in Central America

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This article examines the long-run relationship between export performance and economic growth in three Central American countries from 1950 to 1999. Therefore, it excludes the recent years of slowdown in the world economy, 2000-2002. The cointegration analysis supports the view that the external sector has been a key determinant of these countries' long-run rate of economic growth. The article also suggests that the trade liberalization experiences seen since the mid-1980s have had very disparate impacts on these countries' long-run rates of economic growth. Lastly, the implications of these results for trade liberalization strategies and the possible impact of a United States-Central America Free Trade Agreement are examined.

# I.

## Introduction

Like many other developing economies after World War II, Central American countries adopted a development strategy based on industrialization via import substitution and State-led economic growth. The strategy propelled the region's economic expansion for several decades. However, it gradually ran out of steam as the elementary phases of import substitution concluded and the countries failed to build a robust capital goods industry capable of competing internationally. By the late 1970s, the import-substitution strategy had run its course, and the region increasingly faced ballooning fiscal deficits, acute inflation, supply shortages and, ultimately, severe balance-of-payments crises coupled with economic recession.

The 1980s—the “lost decade” in Latin America's economic development—were marked by a series of attempts to correct these macroeconomic disequilibria in the face of serious limitations to accessing foreign credit and capital markets. Drastic stabilization and structural-adjustment programmes were implemented aimed at reducing inflation and correcting fiscal imbalances. Two important elements of these programmes were the adoption of trade liberalization policies—to reduce tariff and non-tariff barriers—and the downsizing of the public sector.

These programmes succeeded in lowering inflation and correcting the fiscal imbalances in most of the region. In addition, they brought about a change in the composition of exports, most notably in Costa Rica and El Salvador, both of which witnessed an extraordinary growth in exports in the 1990s. However, notwithstanding this strong export drive, Central

America's economic expansion in the 1990s was weaker than the one seen from 1950 to 1970, the peak years of the import-substitution period (see table 1). This contrast is also becomes apparent when rates of demographic growth are included in the analysis. Indeed, Central America's real per capita GDP grew at an average annual rate of 1.1% in the 1990's, significantly below the 2.9% average seen in the 1960s and the 1.7% witnessed in the 1970s.<sup>1</sup>

Central America's lacklustre economic performance did not help improve the social conditions of the population. Moreover, its dismal performance during the 1980s further worsened these conditions. With the exception of Costa Rica, more than 50% of the Central America's population lives under the poverty line or in extreme poverty.

The search for alternative strategies for improving the welfare of their populations led Central American economies, starting in the 1990s and in some cases even as far back as the mid-1980s, to intensify their outward orientation and deepen their commercial ties with their northern neighbours. In 1994 and 1997 Costa Rica and Nicaragua signed free trade agreements with Mexico. In 2000, El Salvador, Guatemala and Honduras (the so-called Northern Triangle) followed suit, and more recently Costa Rica signed a free trade agreement with Canada. While these trade agreements may stimulate exports—and, thus, economic growth—they fall short of Central American Governments' goal of gaining access to the United States market on a footing equal to that afforded by the North American Free Trade Agreement (NAFTA)—that is, on equivalent terms regarding tariff and non tariff restrictions as those enjoyed by Mexico and Canada. In its current form, the Caribbean Basin Initiative (CBI) partly compensates that shortcoming by giving textiles and other specific products preferential access to the United States market.

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<sup>1</sup> See Bulmer-Thomas and Kincaid (2000).

TABLE I

## Central America: GDP growth, 1950-1999

Country	Period					
	1950-99	1950-60	1960-70	1970-80	1980-90	1990-99
Costa Rica	4.9	6.6	6.0	5.5	2.1	5.0
El Salvador	3.5	4.8	5.4	3.0	-0.8	4.6
Guatemala	3.7	3.7	5.0	5.4	0.9	4.1
Honduras	3.7	2.9	4.7	5.2	2.2	3.1
Nicaragua	3.1	5.5	6.1	0.8	-0.8	3.2

Source: Prepared by the authors with ECLAC data.

Influenced by NAFTA, Central America is currently negotiating a free trade agreement with the United States and the rest of the Americas for the not-too-distant future. This initiative is seen by the small economies as a fundamental tool for enhancing their growth potential. They expect that the Free Trade Agreement of the Americas (FTAA) would not only increase intrahemispheric exports but would also attract foreign direct investment to Central America. An important feature of the proposed FTAA is the agreement to “take into account differences in the levels of development and size of the economies of our Hemisphere, to create opportunities for the full participation of the smaller economies and to increase their level of development”.<sup>2</sup> For the smaller economies, the recognition of such structural differences would represent a key principle to orient their initiatives and demands in the trade-negotiation process.

In accordance with the notion that the balance of payments is a fundamental constraint on developing countries’ long-run economic-growth rate,<sup>3</sup> this article examines the relationship between export performance and economic growth in three Central American countries. It then builds upon the empirical findings to infer implications regarding trade agreements and the prospects for trade liberalization.

A main assumption of this analytical perspective, in its most simplified version, is that the difference between the rate of growth of a given country and that of the rest of the world is proportional to the ratio of its respective income elasticity of imports to that of exports. In a nutshell, the model posits that, *ceteris paribus*, the growth rate of a given country will, in the long run, diverge from that of the rest of the world if the country’s income elasticity of imports is greater than the rest of the world’s income elasticity for that country’s exports.

The article is divided into six sections. Following the introduction, the second section presents, albeit briefly, the theoretical model adopted in this article, in the version initially introduced by A.P. Thirlwall in the early 1980s (and later referred to by P. Krugman as “the 45-degree rule”). The third section introduces the methodological considerations and the long-run econometric techniques used in the article. The fourth section applies these techniques to derive the foreign-trade elasticities. The fifth section examines the behaviour of the income elasticities of imports and exports over time and links these results with free trade negotiations and trade liberalization policies. Lastly, the conclusion and final reflections are given in the sixth section.

<sup>2</sup> See Fourth Trade Ministerial Meeting, Summit of the Americas (1998), and Fifth Trade Ministerial Meeting, Free Trade Area of the Americas (1999).

<sup>3</sup> The model was originally developed by Thirlwall (1979). Recent contributions to this theoretical perspective include those made by McCombie and Thirlwall (1997), Moreno-Brid (1998-99 and 2001) and Barbosa (2002).

## II

### A theoretical model to analyze trade liberalization and growth

Regarding the assumption that a country cannot rely on foreign capital to finance its trade deficit indefinitely, Thirlwall's model states that there are the terms of trade or other price effects exert no influence, that the ratio of the growth of income in a given country to that of the rest of the world is equal to the ratio of the income elasticity of exports of the rest of the world to that country's income elasticity of imports. Expressed as a formula:

$$[1] \quad y_b/y_w = \pi/\xi$$

where:

$y_b$  = real rate of growth of domestic income ( $dy/y$ );

$y_w$  = real rate of growth of the rest of the world ( $dw/w$ );

$\pi$  = income elasticity of exports;

$\xi$  = income elasticity of imports.

Equation [1] is easily obtained as the solution to the simple trade-growth model expressed by the following three equations:

$$[2] \quad dx/x = \eta (dp/p - dp^*/p^*) + \pi dw/w$$

$$[3] \quad dm/m = \phi (dp^*/p^* - dp/p) + \xi dy/y$$

$$[4] \quad dp^*/p^* + dm/m = (dp/p + dx/x)$$

in which equations [2] and [3] are the standard demand functions for exports and imports, although expressed in terms of their growth rates, and  $x$  represents real exports;  $m$ , real imports;  $p$ , domestic prices;  $p^*$ , external prices;  $w$ , real income in the world;  $y$ , domestic income in real terms;  $\eta < 0$  and  $\pi > 0$ , the price and income elasticities of exports; and  $\phi < 0$  and  $\xi > 0$ , the respective elasticities of imports. For simplification, the nominal exchange rate is assumed to be fixed and equal to one. Equation [4] is merely the dynamic expression of a balance-of-payments identity that states that in the long run exports and imports attain equilibrium (i.e., the trade deficit must be eliminated, such that  $X = M$ ). Solving the system

of equations [2] to [4] yields the following expression of the economy's long-run growth rate ( $y_b$ ):

$$[5] \quad y_b = \frac{\pi dw/w + (\eta + \phi + 1) (dp/p - dp^*/p^*)}{\xi}$$

And, if the Marshall-Lerner condition is just fulfilled, equation [5] is simplified to:

$$[6] \quad y_b = \frac{\pi dw/w}{\xi}$$

which is easily transformed to give the same expression as equation [1] above.

$$[7] \quad y_b/y_w = \pi/\xi$$

According to equation [7], if the ratio of income elasticities to foreign trade is less (greater) than one, the local economy's real income ( $y_b$ ) will grow at a slower (faster) pace than that of the rest of the world ( $y_w$ ).

This has several implications for trade liberalization, and, in general, for regional free trade agreements. First, a trade liberalization policy will spur economic growth if it is associated with an increase in the income elasticity of the country's exports ( $\pi$ ) greater than any increase that it may bring about in the country's income elasticity of imports ( $\xi$ ). This conclusion, insofar as it emphasizes the impact on economic growth, may provide a simple benchmark to distinguish between successful and unsuccessful trade liberalization strategies. Second, within a regional-integration process that includes economies of different sizes and levels of development, a less developed economy will tend, over time, to catch up to (fall behind) industrialized economies, if the elasticity ratio is greater (less) than one. Third, and more importantly, if the relevant ratio of elasticities differs for, say, two groups of developing economies, a regional-integration process will inevitably result in divergence between them. Some economies will

benefit and catch up with the most advanced ones; others will lag further behind, and thus may run the

risk of seeing an increase in their relative and perhaps absolute levels of poverty.

### III

## Methodological considerations

An empirical analysis of equation [1] requires a framework specifying the import and export demand function from which the income elasticities of exports and imports are obtained. In this article, we follow the conventional approach, known as the *imperfect-substitutes model*.

This approach is based on the assumption that domestic and foreign goods are not perfect substitutes. And, in treating an infinite elasticity of supply as a given, the model posits that exports and imports are essentially demand-determined. It thus argues that the main determinants of imports are the importing country's income, the price of imports and the domestic price of locally produced goods and services tradable in international markets. Likewise, the main determinants of exports are the rest of the world's income and the price of export goods relative to the price of foreign-made goods that compete with them in the international market. In addition, monetary illusion is typically assumed away, and a zero-homogeneity restriction is imposed to ensure that the foreign and the domestic price elasticity of import (export) demand are of the same magnitude in absolute terms.

The assumptions of the imperfect-substitutes model validate the use of single-equation econometric methods to estimate a country's foreign trade performance.<sup>4</sup> Stated as logarithms, the standard specifications of import and export demand are:

$$[8] \quad \ln(m_t) = a_0 + a_y \ln(y_t) + a_p \ln(Pm_t/Pd_t) + u_t$$

$$[9] \quad \ln(x_t) = b_0 + b_y \ln(y^*_t) + b_p \ln(Px_t/P^*_t) + v_t$$

where  $u_t$  and  $v_t$  stand for white noise disturbance terms;  $m_t$ , real imports; and  $y_t$ , the real domestic income of the

importing country.  $Pd_t$  and  $Pm_t$  stand, respectively, for domestic-price indices of locally produced tradable output and of imported goods and services expressed in local currency. Accordingly,  $Px_t$  and  $P^*_t$  are the corresponding price indices of exports and of goods from abroad. In both equations, all prices are expressed in units of the respective local currency. The parameters  $a_y$  and  $b_y$  correspond to the long-run income elasticities of import and export demand, and  $a_p$ ,  $b_p$  represent their long-run price elasticities.

Note that, given the article's focus on long-term foreign trade performance, equations [8] and [9] assume away all short-run (lagged) influences of income and relative prices on import and on export demand.<sup>5</sup> Therefore, the coefficients of the two log-linear equations reflect the long-run income and price multipliers of export and of imports.

An empirical analysis of long-run economic relationships must take into account the potential non-stationary properties of the data; that is, it must take into account the fact that time series processes may not have a constant mean or a bounded variance. The standard method for allowing for non-stationarity in the estimation of long-run economic relationships is to apply cointegration methods. The first step of this method requires verifying that the relevant variables have compatible orders of integration,<sup>6</sup> which is done here by applying the conventional and the augmented Dickey-Fuller tests.

Once such compatibility has been verified, the next step consists of estimating the number of stationary linear

<sup>4</sup> Goldstein and Kahn (1985) present the standard view of these models.

<sup>5</sup> Note that this concept of long-run equilibrium does not presume a steady-state growth path; such a path implies a unitary income elasticity of demand to maintain a constant ratio of imports (or exports) to income in the steady state, when relative prices are constant.

<sup>6</sup> The order of integration of a stochastic variable  $X(t)$  is defined as the number of times it must be first-differenced to obtain a stationary series.

combinations (so-called *cointegration vectors*) of the relevant variables. If no such combination is identified, it is said that the variables are not cointegrated, that is, that there is no stable long-run linear relationship between them. On the other hand, if at least one such combination exists, the variables are said to be cointegrated, and the estimated coefficients are

interpreted as the long-run linear multipliers of the relevant regressors. To estimate the number of any such cointegrating vectors, we applied the Johansen methods.<sup>7</sup> To apply these methods, a vector autoregressive (VAR) system must first be specified with the set of relevant variables and then the number of long-run equilibrium relationships among them must be estimated.

## IV

### Central America's long-term import and export demand

#### 1. Sources of the data

To derive the data used here to estimate import and export functions for Guatemala, Costa Rica and El Salvador, the authors used official figures from ECLAC and International Monetary Fund (IMF) databanks for the time domain 1950-1999. The figures for gross domestic product ( $y$ ), imports ( $m$ ) and exports ( $x$ ) are measured at constant prices in units of local currency. Both exports and imports include trade in goods as well as in services. In accordance with standard procedures, the relative price variables  $-Pm_t/Pd_t$  in equations [8] and  $Px_t/P^*_t$  in equation [9]— were replaced with the real exchange rate, defined as the ratio of the consumer price index of each Central American nation to that of the United States, measured in units of domestic currency. Given that the main destination of Central American exports is the United States, this country's national income, measured in real terms, was used to estimate world income in the econometric analysis of export demand.

#### 2. The empirical results

As mentioned above, the first step in the econometric analysis of long-run import and export demand was to apply Dickey Fuller and augmented Dickey Fuller (DF and ADF) tests to assess stationarity properties of the time-series considered in equations [8] and [9] for 1950-1999. The Akaike information criterion (AC) and the Schwarz criterion (SC) were used to select the optimum lag  $k$  for the ADF tests. The findings indicate that, for each country, the log-levels of real GDP, real imports,

real exports and the real exchange rate are I(1) processes and their first differences are I(0) processes (table 2).

In addition the log-level of the United States' national income in real terms was also found to be an I(1) process, and its first difference an I(0) process (table 2). In each case, the model-selection criteria suggested an optimum one-year lag for the unrestricted VAR systems for both imports and exports (table 3).<sup>8</sup>

Table 4 gives the results of the Johansen cointegration analysis for export and import demand of the three countries under consideration. In each case the results indicate—at a 5% significance level—the existence of one cointegrating vector for import demand, as given by equation 8. Note, moreover, that the magnitude of the long-run income elasticity of imports of these three economies is similar—within the 1.27 to 1.49 range. With the exception of Guatemala, the long-run price elasticities of import demand are not significant at a 5% confidence level.

In the case of exports, the results of the Johansen tests for each of these countries fail to disprove the hypothesis of having only one cointegrating vector.

<sup>7</sup> Simple introductions to unit-root testing and cointegration analysis may be found in Cuthbertson and others (1992), Charemza and Deadman (1992) and Enders (1995).

<sup>8</sup> Some individual equations of the VAR-systems of import demand for El Salvador and Guatemala as well as of export demand for Guatemala failed to pass the Lagrange Multiplier (LM) test for no residual serial correlation in 1950-1999. The problem may be solved by introducing a "dummy" variable to reflect methodological changes in reporting data on in-bond industries.



TABLE 2

**Three Central American countries: Dickey-Fuller (DF) and augmented Dickey Fuller (ADF) unit-root test, 1950-1999<sup>a</sup>**

Country	Variable	DF (ADF)	
		AC	SC
Costa Rica	LGDP	-2.4	-2.4
	ΔLGDP	-6.4 <sup>b</sup>	-6.4 <sup>b</sup>
	LX	-2.4	-2.4
	ΔLX	-7.7 <sup>b</sup>	-7.7 <sup>b</sup>
	LM	-2.6	-2.6
	ΔLM	-5.2 <sup>b</sup>	-5.1 <sup>b</sup>
	LRER	-2.5	-2.5
	ΔLRER	-7.2 <sup>b</sup>	-7.2 <sup>b</sup>
El Salvador	LGDP	-2.2	-2.2
	ΔLGDP	-3.3 <sup>b</sup>	-3.3 <sup>b</sup>
	LX	-2.0	-1.2
	ΔLX	-6.2 <sup>b</sup>	-6.2 <sup>b</sup>
	LM	-2.3	-2.3
	ΔLM	-5.2 <sup>b</sup>	-5.2 <sup>b</sup>
	LRER	-0.92	-2.2
	ΔLRER	-3.0 <sup>b</sup>	-8.3 <sup>b</sup>
Guatemala	LGDP	-2.2	-1.8
	ΔLGDP	-3.4 <sup>b</sup>	-3.4 <sup>b</sup>
	LX	-2.6	-2.6
	ΔLX	-5.4 <sup>b</sup>	-5.4 <sup>b</sup>
	LM	-2.6	-2.6
	ΔLM	-4.6 <sup>b</sup>	-5.6 <sup>b</sup>
	LRER	-3.8 <sup>b</sup>	-2.3
	ΔLRER	-6.0 <sup>b</sup>	-6.0 <sup>b</sup>
United States	LNI	-3.1	-3.1
	ΔLNI	-6.0 <sup>b</sup>	-7.0 <sup>b</sup>

<sup>a</sup>  $\Delta X$  stands for the first difference  $X_T - X_{T-1}$ . DF and ADF are the Dickey-Fuller and augmented Dickey-Fuller unit-root statistical tests. AC and SC are the Akaike information criterion and Schwartz criterion statistics.

<sup>b</sup> Significance at a 5% confidence level.

According to these findings, Costa Rica has the highest long-term income elasticity of exports (2.64), followed by El Salvador (2.24). The estimated income elasticity for Guatemala was much lower (1.07). Without exception, the long-term price elasticity of exports was not significant at a 5% confidence level.

There may be various causes for the real exchange rate's lack of a significant long-term influence on these three Central American countries' exports and imports. One possible cause is the relatively small long-term variation in the exchange rate in the period under analysis. Another possible cause may be the fact that we did not use the trade-weighted real exchange rates in the econometric analysis. It could also be caused by reflect problems of aggregation. And, finally, this lack of influence may be actually make clear that in the long-run non-price factors have a much more definitive influence on trade that do relative price variations. In any case, it supports the analytical model expressed in equation [1], suggesting that Central America's long-term trade performance has been determined mainly by non-price factors. This buttresses the argument that boosting these countries' long-term export potential requires changing their export mix in favour of goods for which demand —both globally and locally— is highly income-elastic. Hence, in addition to avoiding a loss in their competitive advantages through price reductions, tariffs or nominal devaluation, developing countries should seek to implement policies to improve their technological prowess, innovative skills and scientific capacities.

Finally, the empirical validity of equation [1] can be substantiated by comparing the elasticity ratio derived from the cointegrating equations with the ratio of each of the Central American countries' average GDP growth to that of the United States. In every case, even if the sample includes the INTEL effect in the case of Costa Rica (see section V.2 below), the export-import elasticities ratio approximates the growth ratio, indicating, to some extent, the existence of a long-run relation between the two magnitudes.

TABLE 3

**Three Central American countries: Trivariate VAR optimal lag structure and tests of residual serial correlation of single-variable import equations<sup>a</sup>**

Country	VAR Variables	Test Diagnostic/Lag order			Lagrange Multiplier Test $\chi^2(1)$		
		AC/lag	sc/lag	ALR p-value/lag chosen <sup>b</sup>			
Import equation							
Costa Rica	LM, LGDP, LRER	192.3/1	176.5/1	0.34/1	LM 4.6	LGDP 0.8	LRER 0.0
El Salvador	LM, LGDP, LRER	159.9/1	148.2/1	0.22/1	5.5 <sup>c</sup>	13.9 <sup>c</sup>	2.6
Guatemala	LM, LGDP, LRER	193.8/1	183.1/1	0.28/1	4.3	10.3 <sup>b</sup>	0.8
Export equation							
Costa Rica	LX, LNI, LRER	172.9/1	162.2/1	0.77/1	LX 0.6	LNI 0.6	LRER 0.02
El Salvador	LX, LNI, LRER	180.1/1	169.4/1	0.88/1	0.0	0.4	2.1
Guatemala	LX, LNI, LRER	188.7/1	176.4/1	0.63/1	5.2 <sup>c</sup>	0.0	1.1

Source: Prepared by the authors.

<sup>a</sup> Optimal order selection of VARs, according to Akaike information criterion (AC), Schwartz criterion (SC) and the adjusted likelihood ratios (ALRS) calculated with up to a six-year lag.

<sup>b</sup> ALR = Adjusted Likelihood Ratio

<sup>c</sup> Significance at the 5% confidence level in the results of the Lagrange Multiplier (LM) tests of residual serial correlation.

TABLE 4

**Trivariate Johansen cointegration procedure for Central American countries, 1950-1999<sup>a</sup>**

Country	Lag	Johansen cointegration test results				Cointegrating vector	Likelihood ratio test $\chi^2(1)$
		Ho:	H1:	LRS	5%CV		
Import equation							
Costa Rica	1	Ho: r=0	H1: r<1	LRS 61.0	5%CV 22.0	LM = -1.32 + 1.36LGDP -0.15LRER (1.40) (0.07) (0.32)	0.16
		r<1	r=2	10.6	15.9		
		Ho: r=0	H1: r<1	LRS 44.4	5%CV 22.0		
r<1	r=2	8.5	15.9				
Guatemala	1	Ho: r=0	H1: r<1	LRS 82.7	5%CV 22.0	LM=-3.3 + 1.27LGDP -1.09LRER (1.7) (0.08) (0.39)	7.86 <sup>b</sup>
		r<1	r=2	8.6	15.9		
		Export equation					
Costa Rica	1	Ho: r=0	H1: r<1	LRS 65.9	5%CV 22.0	LX = 4.3 + 2.64LGDP -1.89LRER (20.9) (1.4) (4.2)	0.87
		r<1	r=2	15.6	15.9		
		El Salvador	1	Ho: r=0	H1: r<1		
r<1	r=2			4.7	15.9		
Guatemala	1			Ho: r=0	H1: r<1	LRS 60.4	5%CV 22.0
		r<1	r=2	10.9	15.9		

Source: Prepared by the authors.

<sup>a</sup> The values in parentheses in the fourth column correspond to the asymptotic standard errors. The likelihood ratio test  $\chi^2(1)$  in the fifth column refers to the chi-square ( $\chi^2$ ) with one degree of freedom, under the null hypothesis that the terms-of-trade parameter in the cointegrating vector equals zero.

<sup>b</sup> Significant at the 5% level.

TABLE 5

**Three Central American countries: Income elasticity of imports and exports  
and the growth ratio<sup>a</sup>, 1950-1999**

Country	Income elasticity of imports	Income elasticity of exports	Elasticity ratio ( $b_y/a_y$ )	Growth ratio ( $y/y_{rw}$ )
Costa Rica	1.36	2.64	1.94	1.50
El Salvador	1.49	2.24	1.50	1.03
Guatemala	1.20	1.07	0.89	1.11

Source: Tables 2 to 4

<sup>a</sup> The elasticity ratio is also expressed as  $\pi/\xi$  in section 2, equation [1].

## V

### Trade liberalization and foreign-trade performance

#### 1. The behaviour of the income elasticity of imports and exports

The previous section estimated the long-run income elasticities of the export and import demand functions. Equation [1] was used to compare the elasticity ratio to the long-run average growth ratio. To shed light on the relationship between potential economic growth and changes in trade regimes we examined the behaviour over time of the income elasticities of imports and exports.

More specifically, the exercise consists of recursively changing the sample size of the time domain used in the econometric estimates in order to correlate variations in the elasticity parameters with changes in the orientation of trade and in general of economic policy. Thus, a visible shift in, say, the import and/or export elasticities of income may stem from the adoption of outward-oriented policies, changes in the production structure or a combination of the two. In this exercise, 1986 was chosen as the year marking a critical change in the trade regime, from protectionism to the adoption of trade liberalization policies. That year was chosen because it marks the beginning of the Uruguay Round (1986-1994).

The Uruguay Round signalled a fundamental turning point in the conception of trade relations. Most countries, even when they did not immediately become

members of GATT, accepted that, whatever their level of development, they should adhere to the same principles, rules and obligations required by a multilateral free trade agreement. In keeping with this general trend, Central American started to gradually dismantle its trade barriers.<sup>9</sup>

In accordance with this methodology, cointegrating equations for imports and exports were run for all countries considered for a fixed number of observations —of which there was a total of 30— with 1950-1980 the starting period and 1969-1999 the end period.<sup>10</sup> The calculation of these equations yielded a series of 19 observations for the income elasticities of imports and exports for Costa Rica, El Salvador and Guatemala, which are plotted in figures 1 to 4.

Figures 1 to 4 show, firstly, that the income elasticity of imports is more stable over time than is

<sup>9</sup> Costa Rica joined GATT in 1990, and El Salvador and Guatemala joined in 1991. However, the beginning of their trade reform process preceded their formal accession to GATT. This is shown, for the case of Costa Rica, in appendix B, which lists selected trade reform measures from 1984 to 1988.

<sup>10</sup> An identical exercise could be carried out by using a smaller sample, but this would require a different set of econometric techniques.

FIGURE 1

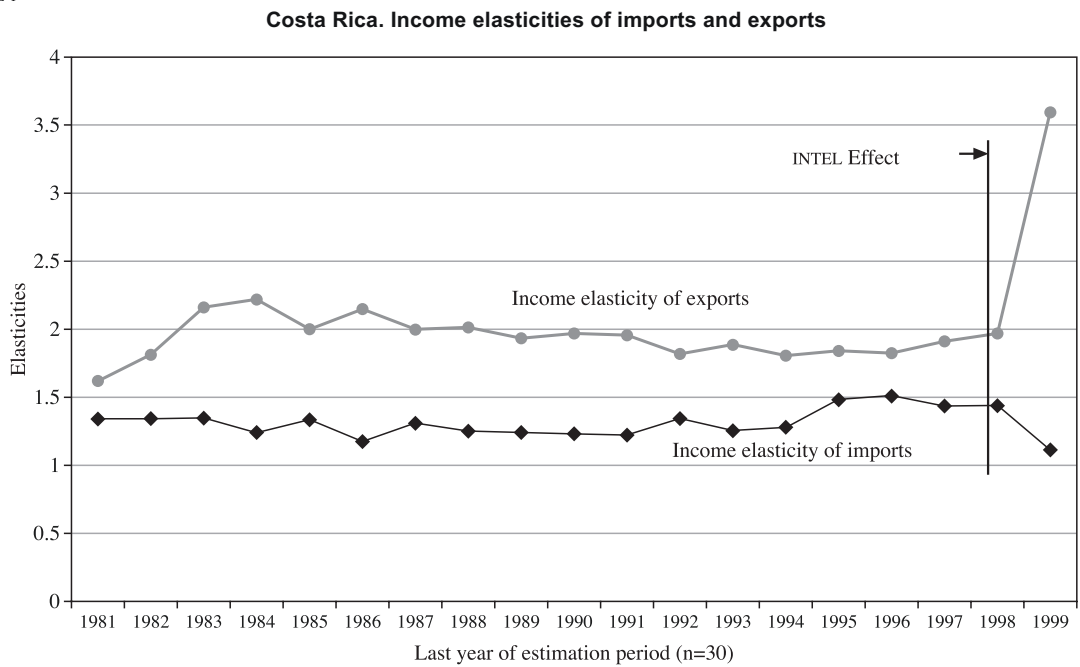


FIGURE 2

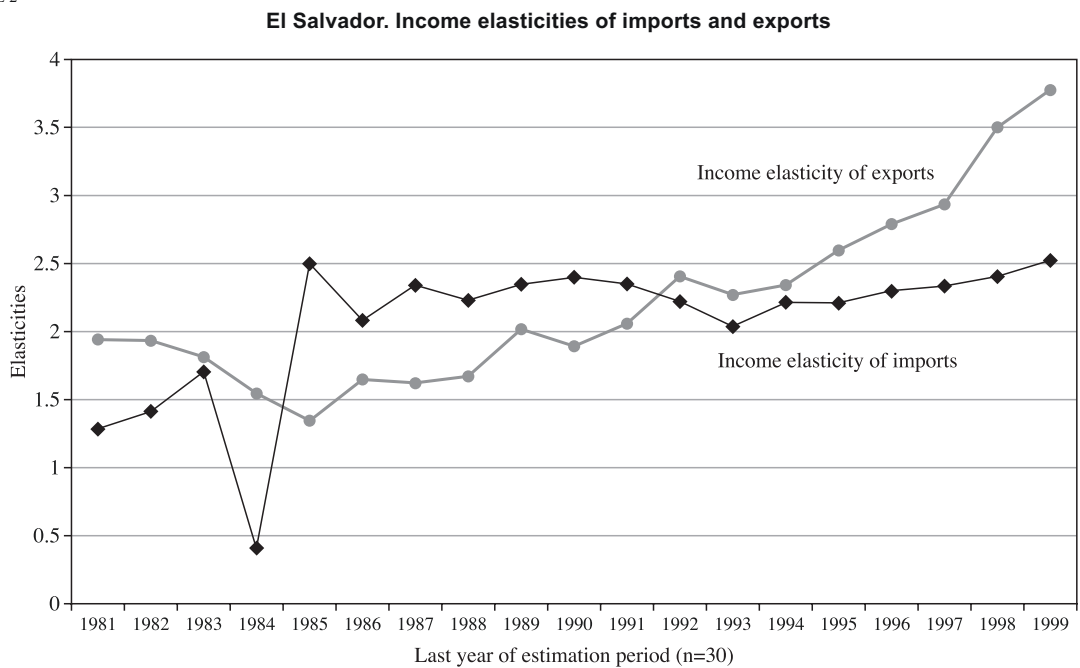


FIGURE 3

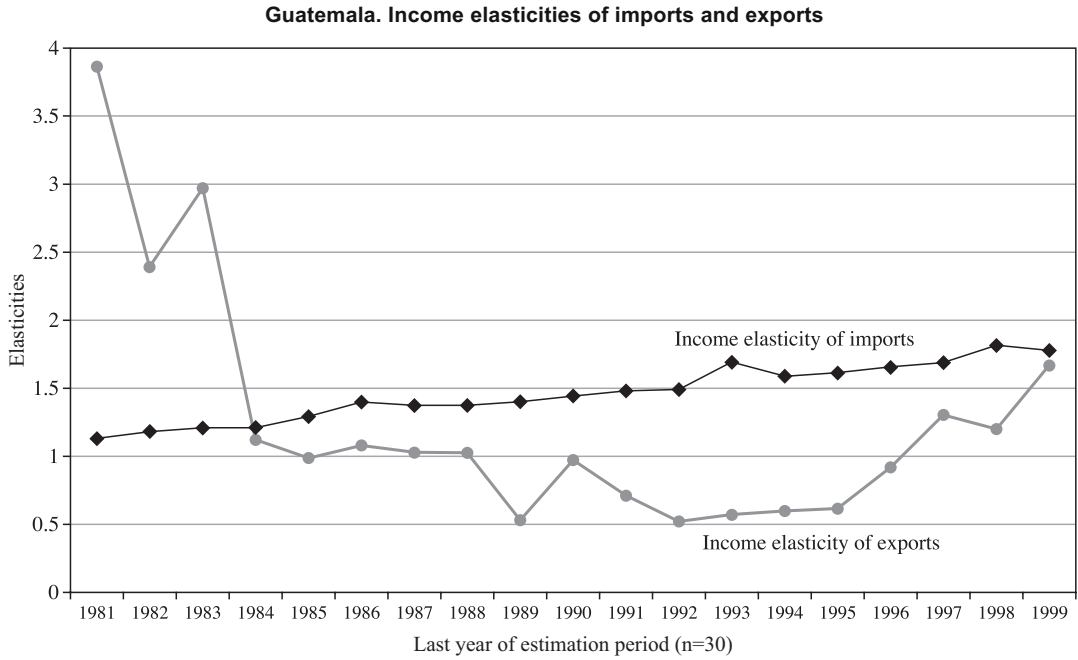


FIGURE 4

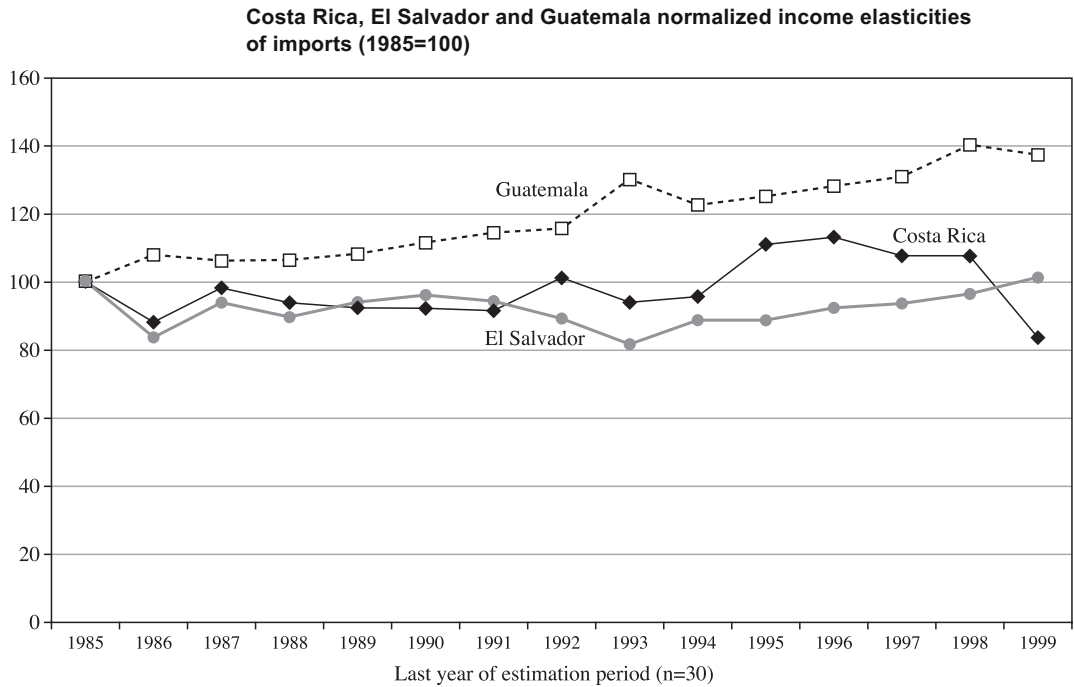


TABLE 6

**Three Central American countries:  
Ratio of income elasticity of exports  
to income elasticity of imports**

	Protectionism	Trade liberalization	
	Before 1986	1986-1991	1992-1999
Costa Rica	1.5	1.6	1.6
El Salvador	1.9	0.7	1.2
Guatemala	2.2	0.7	0.5

Source: Authors' own calculations based on official figures.

the income elasticity of exports;<sup>11</sup> they also cast doubt on the extent to which export policies in fact have precise and predictable consequences. Second, trade liberalization seems to have altered the relationship between the two parameters in two of the three cases considered: El Salvador and Guatemala (table 6). In every case, these policies are associated with an increase of the income elasticity of imports greater than the increase in the income elasticity of exports. In both El Salvador and Guatemala, the change in the trend for both parameters occurs at the same endpoint (1994). In Costa Rica, trade liberalization's impact on the propensity to export and import did not affect the elasticity ratio (see table 6).

Third, the change in the composition of exports to the main trading partner—from primary commodities to manufacturing or high-technology goods—alters the income-elasticity of exports. The most extreme example is Costa Rica for the last period in question (1969-1999), which includes the effects on trade performance of the INTEL plant that began operating precisely in 1999 (figure 1).<sup>12</sup> As a result, between 1968-1998 and 1969-1999 the income elasticity of exports increased from 1.96 to 3.59. For

<sup>11</sup> This validates earlier estimates of both parameters obtained for different periods and for a set of developing and industrialized economies (Hieke, 1977).

<sup>12</sup> At the other end of the spectrum, other free-trade zone activities, such as textiles, have a low value-added component. However, it should be stressed that this refers only to the added value of their export products. This is the free-trade zones' direct contribution to the generation of added value. However, there is also an indirect effect that cannot be excluded: free trade zone foreign-exchange earnings that can in fact be invested in other high value-added activities. Thirlwall's Law focuses on the importance of having access to foreign exchange to promote investment and growth.

TABLE 7

**Three Central American countries:  
Percentage composition of main export  
products to the United States, 1990-1999**

Countries	Product	Year			
		1990	1993	1996	1999
Costa Rica	Machinery	0.2	0.4	0.3	37.4
	Fruits and nuts	22.8	22.4	20.0	13.0
	Textiles	37.4	41.2	35.5	20.8
	Electrical machinery	4.4	5.3	7.8	6.5
	Subtotal	64.8	69.3	63.6	77.7
El Salvador	Textiles	22.8	51.5	67.2	82.8
	Coffee and tea	36.1	20.2	4.9	4.2
	Electrical machinery	10.3	6.5	3.1	1.9
	Fish and crustaceans	5.2	4.3	3.7	1.7
	Subtotal	74.4	82.5	78.9	90.6
Guatemala	Textiles	24.0	45.8	47.7	54.9
	Coffee	23.7	12.9	15.6	13.4
	Fruits and nuts	15.3	11.6	10.8	8.6
	Mineral fuels	2.9	2.0	3.6	4.2
	Subtotal	65.9	72.3	77.7	81.1

Source: Authors' own calculations based on official figures and ECLAC MAGIC (Module for the Analysis of Growth of International Commerce) software (2001).

its part, the income elasticity of imports decreased from 1.43 to 1.11. A glance at figures 2 and 3 points to similar conclusions for El Salvador and Guatemala. For both countries, the estimation periods, which include the 1990s, show an increase in the income elasticity of exports that coincides with a change in the composition of exports from agricultural goods to manufacturing goods (table 7).

However, in both El Salvador and Guatemala the increase in the income elasticity of exports fails to compensate for the rise in the import-elasticity of income. As shown in table 6, the elasticity ratio decreased during the trade liberalization period. Moreover, in the case of Guatemala this pattern was reinforced during the export-promotion period, which points to this economy's tendency to lag behind its main trading partner. Beyond the immediate implications, which underscore the correlation between growth, exports and income elasticities, these results reveal a further and more fundamental consequence: a process of divergence in the growth rates of Central American economies as they integrate into the world economy.



TABLE 8

**Central America and the United States: Correlation coefficients between the differences in their growth rates, 1950-1999<sup>a</sup>**

Correlation variables	1950-1960	1960-1970	1970-1980	1980-1990	1990-1999
DCRG, USG	0.26	0.24	0.37	0.58	0.42
DCREL, USG	0.09	-0.24	-0.04	0.07	0.51

<sup>a</sup> DCRG = difference between Costa Rica's growth rate and that of Guatemala; DCREL = difference between Costa Rica's growth rate and that of El Salvador; USG = United States' growth rate.

## 2. Trade and convergence

The model presented in section 2 posits a long-run proportional relationship between a country's ratio of income elasticities of imports to its income elasticities of exports and the ratio between that country's economic growth and that of the rest of the world. The empirical findings shown in figures 1 to 4 and in table 7 indicate that the ratio between the income elasticities of exports and those of imports did not change systematically while trade liberalization policies were being applied. Consequently, countries were unable to enhance their economic growth potential and, therefore, the wellbeing of their population.

In the case of Costa Rica, the income elasticity of exports remained, throughout the estimation period, above the income elasticity of imports. This tendency was accentuated in the most recent estimation period (ending in 1999) as Costa Rica began to export higher value-added goods such as electronic components, as a result of the establishment of the INTEL plant.

In the cases of El Salvador and Guatemala, the trade liberalization period (i.e., starting in the second half of the 1980s) saw a decline in the ratio of income elasticities of exports to those of imports, which suggests that this process, in conjunction with other factors such as adverse external developments and internal strife, rather than alleviating the balance-of-payments tension, may have made it more restrictive, further limiting these countries' long-run economic growth potential. Nonetheless, following export-

diversification processes in the early 1990s, El Salvador was the only country able to reverse the trend in that ratio and capitalize on the momentum of its external performance.

These findings suggest that the expansion of external demand that may follow a regional-integration process brought about by the lowering of tariff and non-tariff barriers and the reduction of asymmetrical treatment may, in fact, lead—in the absence of offsetting policies—to growth divergence among the three Central American countries considered in this study. In accordance with the sheer logic of the model presented in section 2, an increase in external demand not compensated by a decline in the non-export sectors will increase the growth rates of Central American economies. But given the differences in the ratio of income elasticities of exports to those of imports, it will increase their growth potential to varying degrees.

To examine the empirical bases of this hypothesis, the correlation coefficients between the rate of growth of the national income in the United States and the differences in growth rates of, on the one hand, Costa Rica and, on the other, Guatemala and El Salvador were calculated on a ten-year basis for the period 1950-1999. As shown in table 8, in all cases the correlation coefficients increased starting in 1980 and yielded positive values. Moreover, this result suggests a direct association between the expansion of external demand and divergence within Central America, with Costa Rica rapidly closing the gap vis-à-vis the United States and the others lagging behind considerably.

# VI

## Conclusions

This essay examines the relationship between export performance and economic growth using a balance-of-payments growth-constrained model. Briefly stated, our approach shows that a country's economic growth is determined essentially by two factors: (1) the effect of the rest of the world's income elasticity on the country's exports; and (2) the country's own income elasticity of imports. The balance-of-payments model has important implications for trade negotiations and the trade liberalization proposals that may result from them. In particular, it states that tariff and non-tariff barriers to foreign trade will bring about an improvement in the country's economic growth potential if the boost to its export sector more than compensates any slowdown in its non-export sector.

During the study period, Central American countries adopted varying trade policy regimes and at the same time were buffeted by a series of external shocks, unforeseen events and abrupt changes in domestic economic policy. Nonetheless, the econometric relationships discussed here show a long-run proportional correlation between the ratio of export-to-import elasticities in Central America and the ratio between rates of income growth in Central America and those in the United States. Furthermore, the findings presented for Central America also suggest that trade liberalization has had rather disparate results among the cases examined.

Costa Rica's has been the most successful experience. Its trade liberalization-cum-export promotion strategies are associated with an improvement in its external demand and an insignificant, relative decline in the domestic sector that competes with imports. Thus, its economic growth potential improved.

The experience of the two other countries of the region has been less favourable. Trade liberalization has not alleviated the external constraint on El Salvador's and Guatemala's economic growth paths. Importantly, in view of their economic history, trade liberalization may have acted as an aggravating factor of both countries' listless economic performance.

The important issue, from a policy perspective, is how to ensure that trade agreements and trade liberalization promote economic growth. Along this line, the econometric results presented here indicate that Central American countries can improve their long-term growth potential by changing the composition of their tradable output in favour of goods for which world and local demand is highly elastic to income. Therefore, these countries should ensure that trade negotiations become a vehicle to strategize policies that improve their technological prowess, innovative skills and scientific capacities.

As shown above, the structural differences in the three Central American economies' responses to trade liberalization has significant implications for the potential impact of an FTAA on the tendency of their growth paths to converge. In fact, we have seen that, in conjunction with other factors, in the last two decades, when trade liberalization has begun to be implemented, rising demand in the United States has tended to widen the gap between Costa Rica and the other countries in the region. These results suggest that an exogenous expansion of external demand may lead to an intensification of regional divergence in economic growth in Central America. Such a conclusion may imply that the free trade agreement, in and of itself, may not be sufficient to ensure convergence and a faster rate of economic growth in Central America.

## APPENDIX A

**Three Central American countries: Macroeconomic indicators, 1950-1999**  
(Annual growth rates)

Variable	Costa Rica	El Salvador	Guatemala
		1950-1999	
GDP	4.9	3.5	3.7
Exports	6.8	4.7	4.4
Imports	6.6	6.3	4.9
Current account deficit as a % of GDP	4	1.4	2.9
Real exchange rate	0.6	2.3	0.1
		1950-1970	
GDP	6.0	4.9	4.1
Exports	6.2	5.3	4.1
Imports	8.5	6.2	4.1
Current account deficit as a % of GDP	-2.4	-0.4	-2.3
Real exchange rate	0.1	-0.4	0.5
		1970-1980	
GDP	5.5	3.0	5.4
Exports	4.7	4.6	6.9
Imports	6.3	3.7	6.8
Current account deficit as a % of GDP	-6.0	-1.0	-1.8
Real exchange rate	0.0	-1.7	-0.7
		1980-1990	
GDP	2.1	-0.8	0.9
Exports	5.7	-3.8	-2.4
Imports	1.8	1.4	-2.1
Current account deficit as a % of GDP	-4.9	-3.1	-3.7
Real exchange rate	3.1	-2.9	4.3
		1990-1999	
GDP	5.0	4.6	4.1
Exports	10.7	12.0	6.4
Imports	8.4	12.7	8.8
Current account deficit as a % of GDP	-4.3	-2.1	-4.5
Real exchange rate	-1.3	-2.7	-2.0

Source: Data calculated by the authors based on official and ECLAC figures.

## APPENDIX B

**Costa Rica: Selected reform measures related to trade liberalization  
in the 1980s and 1990s**

Year	Measures
1984	Law on financial equilibrium in the private sector; seeks to promote exports through three export regimes: export contracts, temporary admission and free trade zones.
1985	Standard Central American Tariff Code. Import tariffs range from 1% to 100%.
1986	First structural-adjustment programme. Includes the phasing out of import tariffs and the elimination of quantity restrictions.
1987	Import deposits are reduced from 50% to 10%, before being eliminated in 1992.
1989	Second structural-adjustment programme; seeks to unify import duties on a 5%-40% tariff scale; includes a programme to phase out the tariff ceiling.
1989	The 10% <i>ad valorem</i> tax on coffee profits is modified to stand at between 2.5% and 10%.
1990	Costa Rica joins GATT. Pursuant to GATT rules, it agrees to replace quantity restrictions on imports with tariffs. Tariffs are set at between 55% and 274%. Agricultural products are included. Tariff quotas are applied to two agricultural categories: chicken parts and dairy products.
1992	Elimination of the Central Bank import surcharge, which ranged from 0% to 100%.
1992	The law governing all tax exemptions and the exceptions thereto (Law No. 7293), which eliminates most such exemptions, including those on import taxes.
1994	The 3% tax on all imports is reduced to 1%.
1995-1996	Parameters of the Central American Common External Tariff: 0% for raw materials and capital goods, 5% and 10% for intermediate inputs and 20% for finished goods; the 20% ceiling is further reduced to 15% in 1997.
1996	The export-contract and temporary-admission regimes are replaced with the <i>régimen devolutivo de derechos</i> and the <i>régimen de perfeccionamiento activo</i> .
1997	Costa Rica adopts a final tariff-reduction programme, with the aim of arriving at the 15% ceiling by 2000.
1998	In July 1999, the authorities apply the common external-tariff programme by reducing tariffs on intermediate goods from 16% to 15%.

*Source:* Prepared by the authors.

## APPENDIX C

Estimation of elasticities<sup>a</sup>

Year	IEICR	IEEER	IEIEL	IEEEL	IEIG	IEEG
1981	1.3346	1.6132	1.2807	1.9383	1.1284	3.8641
1982	1.3354	1.8078	1.4131	1.9358	1.1799	2.388
1983	1.3391	2.1518	1.7063	1.813	1.2068	2.9595
1984	1.2341	2.2144	0.40724	1.5464	1.2054	1.1191
1985	1.3273	1.9984	2.4947	1.3458	1.2917	0.98767
1986	1.1694	2.1439	2.083	1.6452	1.3971	1.0782
1987	1.3026	1.9934	2.3401	1.6233	1.37	1.0248
1988	1.2462	2.0119	2.2333	1.6683	1.3749	1.0255
1989	1.2315	1.9259	2.344	2.017	1.3969	0.52705
1990	1.2212	1.961	2.3982	1.8938	1.441	0.96059
1991	1.2151	1.9478	2.3511	2.058	1.4786	0.71146
1992	1.34	1.8168	2.2228	2.4079	1.4924	0.52329
1993	1.2442	1.8783	2.0358	2.2666	1.6847	0.57335
1994	1.2691	1.801	2.2128	2.3393	1.5831	0.59729
1995	1.4726	1.839	2.2092	2.6002	1.6141	0.61551
1996	1.5018	1.8219	2.3019	2.7889	1.6549	0.91555
1997	1.4296	1.9099	2.3339	2.9328	1.6893	1.3046
1998	1.4289	1.9611	2.4029	3.5019	1.8124	1.1948
1999	1.1096	3.5884	2.5243	3.7771	1.775	1.6678

Source: Prepared by the authors.

<sup>a</sup> IEICR: income elasticity of imports, Costa Rica.

IEEER: income elasticity of exports, Costa Rica

IEIEL: income elasticity of imports, El Salvador.

IEEEL: income elasticity of exports, El Salvador

IEIG: income elasticity of imports, Guatemala.

IEEG: income elasticity of exports, Guatemala.

## APPENDIX D

Standardized income elasticity of Imports<sup>a</sup>

Year	IEICR	IEIEL	IEIG	IEICR	IEIEL	IEIG
1985	1.3273	2.4947	1.2917	100	100	100
1986	1.1694	2.083	1.3971	88.1037	83.4970	108.1598
1987	1.3026	2.3401	1.37	98.1391	93.8029	106.0618
1988	1.2462	2.2333	1.3749	93.8899	89.5218	106.4411
1989	1.2315	2.344	1.3969	92.7823	93.9592	108.1443
1990	1.2212	2.3982	1.441	92.0063	96.1318	111.5584
1991	1.2151	2.3511	1.4786	91.5467	94.2438	114.4693
1992	1.34	2.2228	1.4924	100.9568	89.1009	115.5377
1993	1.2442	2.0358	1.6847	93.7392	81.6050	130.4250
1994	1.2691	2.2128	1.5831	95.6152	88.7000	122.5594
1995	1.4726	2.2092	1.6141	110.9470	88.5557	124.9594
1996	1.5018	2.3019	1.6549	113.1470	92.2716	128.1180
1997	1.4296	2.3339	1.6893	107.7074	93.5543	130.7811
1998	1.4289	2.4029	1.8124	107.6546	96.3202	140.3112
1999	1.1096	2.5243	1.775	83.5983	101.1865	137.4158

Source: Prepared by the authors.

<sup>a</sup> IEICR: income elasticity of imports, Costa Rica.

IEIEL: income elasticity of imports, El Salvador.

IEIG: income elasticity of imports, Guatemala.

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# Education, communication *and culture in the information society: a Latin American perspective*

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The swift changes being wrought by the information society in the spheres of production and communication have inevitably meant rapid, large-scale alterations in the way knowledge is transmitted, communication carried out at a distance and information used in the new media. Progress in education has to be driven forward in combination with another pillar of the information society, namely access to communication via interactive media, where what is at stake is not only competitiveness but also cultural identity and, increasingly, civic participation. This is why the interaction among education, culture and new information and communication technologies is so vitally important. Educating people with new information and knowledge technologies means teaching them to impart meanings to these that reconcile the new ways of producing and working with the new ways of exercising rights, affirming cultures, acquiring knowledge, communicating at a distance and participating in networks.

# I

## Education on the pedestal and in the dock

Education has long been regarded as the prime link in the chain of cultural integration, social mobility and productive development. A society with high levels of schooling and good educational attainments tends to be more egalitarian in its income structure (owing to the occupational returns on education), to have greater cultural cohesion and more diversified culture markets, and to grow economically by means of leaps in productivity rather than through overexploitation of human or natural resources. Both in the development literature and in the political debate, the importance of education as this “prime link” is now widely recognized.<sup>1</sup> Hard upon the question of what type of development we want comes the question of what type of education we have.

As the consensus of the day has it, the centrality of education for social and occupational mobility and productive development is becoming even more decisive today, given the growing importance of innovation and knowledge in the economic process. The argument is that education enables people to participate in the information technology revolution, get “intelligent” jobs and join in the networks where knowledge circulates. A lack of education, on the other hand, leaves them stranded in cybernetic illiteracy and low-productivity, low-wage jobs and deprived of long-distance dialogue and much cultural interaction. The prospect of well-being offered by education today means not only the future opportunity to generate higher incomes than our parents had, because of our greater human capital, but also the opportunity to use the skills acquired to exercise new forms of citizenship, participate constructively in multiculturalism, combine immediate experience with media-transmitted experience, in short, update one’s own life history with the emancipating ideas of modernity.

Meanwhile, in a more instrumental dimension, openness to the world is making national societies more and more dependent on external competitiveness, and this in turn depends on intelligence and fresh knowledge

being incorporated into the production system. As a result, development options require large, swift educational leaps. It is not just a matter of having a population with more years of formal education. It is necessary to learn more, but above all to learn differently. It is necessary to acquire the skills that are now needed to join creatively in the new forms of work and to participate with a “dialogical” rationality in negotiating and decision-making. ECLAC and UNESCO warned a decade ago that “since knowledge will be the central element of the new paradigm of production, educational change will become a fundamental factor for developing the qualities of innovation and creativity, together with integration and solidarity, which are key aspects both for the exercise of modern citizenship and for attaining a high level of competitiveness” (ECLAC/UNESCO, 1992, p. 113).<sup>2</sup>

This requires assets that people will have to acquire from different knowledge creation and transmission sources. The supply will have to consist of variable combinations between formal education and the culture industry to develop aptitudes that are useful in the information society and the media society: the ability to express demands and opinions in communications media and exploit the growing flexibility of these, personal initiative, a willingness to change and the ability to adapt to new challenges, the management of multiple rationalities, a critical spirit in selecting and processing messages, the ability to translate information into learning, and so on.

<sup>2</sup> In the same spirit, the document adds: “The transmission of values, the ethical dimension and the forms of behaviour typical of modern citizenship, together with the generation of the capacities and skills which are essential for international competitiveness (which is increasingly based on technical progress), receive a decisive boost from education and the production of knowledge in a society. Reform of the system of production and dissemination of knowledge is consequently a crucial instrument for tackling both the internal challenge, which is that of building citizenship, and the external challenge, which is that of competitiveness. It will therefore be understood why this dimension has a central place in the ECLAC proposal on changing production patterns with equity” (p. 17).

<sup>1</sup> See ECLAC/UNESCO (1992); Hopenhayn and Ottone (2000).

The acquisition of these new skills does not begin with a blank slate. It is not just a matter of acquiring knowledge: there needs to be an interactive learning process, where the emphasis is placed far more on the production of new cognitive syntheses in the student than on the acquisition of ready-made knowledge. All this implies positive engagement, interaction and a critical spirit. The very redefinition of learning involved in the transmission of these skills entails a paradigm shift in the style of education: from memorizing to understanding, from absorbing information to discriminating between messages, from the encyclopaedic acquisition of knowledge to a selective approach, from mechanical discipline to responsible autonomy, from learning to learning to learn.

From a cultural perspective, the status of education is more ambiguous. On the one hand it is regarded as having performed an undesirable historical role, being subordinated to cultural homogenization projects driven by the model of a nation-State that always sought to align territorial unity with symbolic unity. Thus, more recent defenders of cultural pluralism and identity diversity have put forward a critical reinterpretation of the traditional role of education. The charge is that education was treated in part as an Enlightenment crusade whose objective was the acculturation of ethnic minorities and the imposition of a common rationality to consolidate political and territorial unity by drilling people more thoroughly in the codes of modernity and loyalty to nationalist values. Another criticism is that education, or more traditional versions of it, did not so much stimulate the potential of those being educated as stifle their creativity and repress their truest feelings.

But the cultural role of education has also been reinterpreted positively, as the basis from which reality can be critically reappraised and new collective projects devised, and from which we can learn to live in a multicultural world. Learning about difference or plurality should not be understood as just one more subject for study (like geography, history or anthropology). It is about reformulating the linkage or intersection between a top-down curriculum and the cultural identities that come from below, or between the subjects learnt and those learning them, just as it is about anchoring global content in local realities and, conversely, reformulating content from the worlds of life that students bring into the classroom with them. This linkage will not be forged in the upper reaches of educational planning but in the more particular context of each school. More than curricular content, what is required is the creation in people of a general

willingness to change the ways they learn, communicate and produce. "The future of work," warns Alain Touraine, "is so unforeseeable, and will be so far removed from what most of those now at school have learnt, that the first thing we need to ask schools to teach them is preparedness for change rather than specific skills that will probably be obsolete or useless for most of them before too long" (Touraine, 1997, p. 328).

To think of difference is to think of learners as "traversing" difference and of the other as a questioning of the self. This holds true for the encounter between different cultural identities, but also for the relationship between teachers and students, and between male and female students. Learning about difference thus comes to mean learning about citizenship: learning to put oneself in the other's place and to see things through the other's eyes. As Magdaly Téllez puts it, "unless this relationship (alterity) is involved, the recognition of difference means no more than the acknowledgement of plurality, and what is required is for difference to be resolved into experiences that construct democratic and civic relations (...) What is at stake is not just the problem of the existence of others as a historically and culturally produced difference, but the fact that the *self* is deterritorialized and reterritorialized, and thus resignified in the sense that it ceases to be a closed identity in terms of membership of a nation, a race, a social class, a political organization, a profession, an academic community, etc., and becomes a plural space in which multiple narratives and languages interact" (Téllez, 1998, pp. 136-137). Opening up to difference, then, is not just a politically correct exercise in tolerance towards others. It involves people being transformed by the development of their ability to put themselves in the place of others, enrich themselves with others' world views, enlarge their own sensibility with that provided by the experience of difference. Thus, "educating people in respect for diversity, recognition of the other and the exercise of solidarity are preconditions for the growth and enrichment of one's own identity" (Cubides, 1998, p. 45).

Cultural challenges to education are also intensified by the dynamism of identities in media interaction: the existence of differences in close proximity owing to the increase in migrants and their families, the segmentation of tastes due to increased supply in culture markets, the greater visibility of the ethnic issue in politics and the media, hybridizations between new and old and between local and external. All this undermines the rigid, general ways in which education and culture

have traditionally interacted and challenges the education system over those very historical referents that governed it for so many decades: the same education for all, long-running syllabuses decided on by the centre, a universal and traditional conception of the culture to be transmitted, and cultural unification through formal education. Both learning processes and the shared school environment are divided between an educational imaginary tinged with aspirations towards unity and new realities in the field of knowledge and everyday life that fill students' minds will all sorts of contrasting texts. These tensions require new cognitive syntheses and maps, and so far the formal education system has not been creative enough to take up the challenge.

The idea of providing an education that takes account of the cultural processes and contexts of those educated brings us back to some of the premises of the critical pedagogy that Paulo Freire proposed in the 1960s and 1970s, the aim of which was to bring education closer to the sociocultural realities of students and provide a critical, transformative perspective on the reality they live in.<sup>3</sup> In a paper summarizing case studies of Internet applications in deprived schools in Latin America, it is suggested that in rural schools in Argentina "success depended essentially on the ability to adapt the Internet to the needs and environments of local communities (...) following principles that enabled knowledge to be exchanged in an equitable, horizontal way" (Bonilla, 2001, p. 10).

José L. González suggests the "critical approach" as a pedagogic exercise, basing it on a constructivist model of teaching and learning. His objective, he states, is to "decode messages and contents by analysing, ranking and ordering the information put out by the media and the new information technologies", and "bringing communication and media educational material into the classroom and establishing it there means opening up the school to the outside" (González, 2000, pp. 4 and 5). The idea is to use the media in education as a tool for expression and questioning, i.e.,

as a teaching practice that is also a preparatory exercise in civic participation.

At the same time, the importance of education for the exercise of citizenship is defended. The argument is that as knowledge and education become progressively more central to development, they are having a significant effect on the dynamic of a democratic order in which the economy and political institutions relate increasingly to the broader use of knowledge, information and communication. To an ever-growing degree, the processing of demands in the decision-making process is going to be done through the new information and communication technologies, and citizens are going to have to be well-informed, develop management capabilities and operate by the codes of the information society if they are to make use of State or public services and benefits. All this means that education and knowledge will be more and more central in promoting the new forms of citizenship as well.

Between old and new functions, then, education can be seen as a hinge upon which three great aspirations of modernity turn: the production of human resources, the construction of citizens so that they can act in politics and public life, and the development of autonomous agents. I use the words production, construction and development deliberately here to refer to human resources, citizens and autonomous agents, respectively. I think this semantic detail differentiates and at the same time complements the instrumental, political and ethical components in the challenge of educating for modern life. In its history and its promises, it is precisely this threefold dimension that modernity enshrines for those who dwell in it: growing in productivity, in the exercise of citizenship and in personal autonomy.

Education, then, is placed both on a pedestal and in the dock. Observers are aware of how anachronistic and dysfunctional much of the educational heritage is. The flags of autonomy, decentralization, selectiveness, modernization, deregulation and others are hoisted at ministerial meetings and in press articles and turn-of-century documents. Education ideologues, futurologists, development theorists and politicians and experts from international agencies are increasingly given to proclaiming, and warning, that formal education systems in Latin America stand in urgent need of reform so that they can provide a platform for "relaunching" development. All this implies a radical readaptation of content, teaching methods and education planning. This is obviously a far from easy task, as it

<sup>3</sup> According to García and Pruyt (2001, p. 6), "At the heart of Freire's approach (...) students are encouraged to take up subject positions as critical analysts and agents" and "critical teachers following this philosophy are encouraged to engage learners and students in discussions and investigations of their lived realities and problematic situations. The concerns, needs and personal experiences of the students are at the centre of this process." See also Freire and Macedo (1987).

means shaking up the very settled habits of ministries, secretariats, teaching staff and those who run educational establishments.

In this educative impulse upon which all converge, the instrumental requirements of productive modernization are intertwined with the more complex ones of subjectivity and culture. There is the risk of placing too much faith in a process whose quality and attainments depend on as many variables as those of

education do. There is the risk, too, that education might become settled just at a time in history when the channels linking the education system with labour markets are fragmenting and when the urgency of inculcating the instrumental skills required for competitiveness might end up by crowding out other aspects of education that require a different pace, those concerned with learning how to experience emotions and process personal histories.

## II

### Where we stand with education

Latin America has achieved high levels of school enrolment over the last decade, so that this problem is now considered to have been virtually overcome at the primary level. The net primary enrolment rate for 8-year-olds is 96.3%, although the pre-school rate is only 23%.<sup>4</sup> In higher education, the attendance rate does not exceed 35% (as a national average) in any country of Latin America. Furthermore, the countries of the region have a serious problem with the school drop-out rate in secondary education. To confirm this, it is enough to compare the high enrolment rates in primary education with the very much lower ones seen in secondary education. This is all the more serious if we consider that, in different documents addressing the relationship between education and well-being, ECLAC has argued that 11 to 12 years of formal education are required for people to have a clear prospect of obtaining work that is well paid enough to lift them or keep them out of poverty. In the region, however, 40% of children do not complete primary school and between 72% and 96% of poor families have household heads with less than nine years of formal education, while 80% of young people in cities have parents with less than 10 years of formal education, which makes it especially likely that they will not achieve the level of education required to keep out of poverty (ECLAC, 2000).

Furthermore, there is a serious problem of social inequality in education. According to ECLAC figures, the attainment gap between the top and bottom income quartiles (1 and 4) widened in all Latin American countries during the 1990s. In other words, intermediate and higher education still have a class bias,<sup>5</sup> unlike primary education. This is serious, since statistics show a positive correlation between education and equity, which means that the countries whose educational attainments are most widely spread also have smaller income differentials and are more egalitarian in their social structure. There are large disparities in educational attainments (both in the number of years studied and in the quality of learning) by income group, resulting in the reproduction of social inequities. The more segmented attainments are, the more rigid the structure of social groups will be in future and the more segmented the opportunities of new generations in terms of social mobility, productive development and the capacity for civic activity and intercultural dialogue. In a society centring on information and knowledge, the opportunities for different groups to realize their life plans in accordance with their own values and views of the world will largely depend on the quantity and quality of the education they are able to receive. This at least is the consensus view.

<sup>4</sup> The data on education coverage presented here were obtained from the ECLAC Statistics and Economic Projections Division, the UNESCO web site and UNESCO (2000a).

<sup>5</sup> Other than in countries, such as those of the Southern Cone, where an ample majority go into secondary education.



Thus, for example, in the last 30 years nations such as Cuba, Spain and Portugal have expanded secondary and tertiary coverage quickly and steadily to levels far above the Latin American average. And contrary to the emerging thinking on education, which associates greater efficiency with less direct State intervention, these countries have achieved those high rates of growth with a public-sector education system and strong State planning.<sup>6</sup>

The question, therefore, is whether these shortcomings and the slow pace at which they are being overcome are inevitable given the constraints on resources. The answer must be no if we compare the rates of growth at the secondary and higher levels in Latin America with those of the OECD countries and South-East Asia (table 1).

As table 1 shows, between 1985 and 1997 the relationship between the newly industrializing countries of South-East Asia and those of Latin America and the Caribbean was reversed: the former started off behind, but in 12 years they were clearly more advanced educationally, whether the measure be enrolment or performance in tests standardized by level, hours of actual teaching per year and other indicators. Over the same period, the Organisation for Economic Co-operation and Development (OECD) countries, which started off in a considerably better position than those of Latin America, pulled even further and more quickly ahead. Latin America also lags behind in the duration of secondary schooling (shorter in the region than in other groups of countries) and years of compulsory education. Furthermore, in the OECD countries 85% of young people complete secondary education as against less than a third in Latin America.

There are also differences between Latin American students and those in industrialized countries as regards the quality of learning in mathematics and language use, as measured by standard reading, mathematics and science tests, with our countries clearly coming off worse (table 2). This gap looks all the harder to close if it is considered that the industrialized countries, which account for 25% of the world's students, spend six times more on human capital than the developing countries, where the other 75% live, and that in 1999 or thereabouts the developed countries, with 15% of world

population, were home to 88% of all Internet users (Brunner, 1999, p. 2).

The proportion of supply and enrolment for technical education at the higher secondary level (i.e., in the last two or three years of secondary schooling) displays significant differences, being far higher in the OECD and South-East Asian countries than in Latin America. These differences are very important, because the higher secondary level is vital both for improving the general capabilities of the workforce and for achieving desirable effects on equity and social mobility. The experience of some European countries also shows that a larger and better supply of technical and occupational training at this educational level, and in non-university higher education, has very positive effects on the results achieved by students when they enter the labour market and tends to raise productivity generally. Lastly, the low coverage and quality of these alternatives means that an opportunity is being missed to provide a broad training in the productive use of information and communication technologies which, to the extent that they are approachable and motivating for young people of school age, could be the subject of mass training courses of a vocational or technical type at the higher secondary level. This educational segment is perhaps the most suitable for providing mass access to these technologies for a generation of young people in our countries and training them to use them creatively. This would mean quantitative and qualitative progress towards an information technology society, the development of production and communication capacities and the ability to exercise citizenship and connect with the world.

Another fundamental gap is in the incomes of teachers, since teaching conditions obviously have a decisive impact on students' learning. In the region, teachers in the public sector earn on average only a fifth of what teachers in developed countries with the same number of years' experience are paid for the same hours. Although this difference is consistent with the gap in gross domestic product (GDP) between the two groups of countries, it does entail a large disparity in the conditions under which teachers work to impart education and update their own knowledge and methodologies. Furthermore, the ratio between the incomes of teachers and those of other groups of professionals is smaller in the industrialized countries than in the region.

How do these differences in education levels between Latin America and much of the industrialized (or newly industrializing) world correlate with cultural

<sup>6</sup> I point this out not to defend statism but to suggest that the enthusiasm for privatizing social services in some countries may have been overdone.



TABLE 1

**Groups of countries: Comparison of secondary and higher education enrolment in Latin America and the industrialized world, 1985 to 1997**  
(Percentages)

Groups of countries	Gross enrolment rates					
	Secondary education			Tertiary education		
	1985	1997	Percentage rise in enrolment rates	1985	1997	Percentage rise in enrolment rates
Latin America and the Caribbean	50.2	62.2	12.0	15.8	19.4	3.6
OECD countries	92.3	108.0	15.7	39.3	61.1	21.8
Newly industrializing						
Asian countries <sup>a</sup>	57.3	73.1	15.8	14.8	30.5	15.7
East and South-East Asia <sup>b</sup>						

Source: Beverley Carlson, on the basis of UNESCO (2000b) data.

<sup>a</sup> China, Hong Kong, Malaysia, Republic of Korea, Singapore and Thailand.

<sup>b</sup> Only developing countries (not industrialized, including newly or incipiently industrializing).

TABLE 2

**Latin American countries: Ranking in international studies of education quality**

Study	Countries participating	Latin American countries	Ranking
LLECE 1997	13	13	The average scores of the top-ranked country differ from those of the other 12 countries by between 1.5 and 2.0 standard deviations
TIMSS 1996	41	3	31, 37 and 40
TIMSS 1999	38	1	35
IALS 1998	22	2	19 and 22
IALS 1998	22	2	21 and 22

Source: Laboratorio Latinoamericano de Evaluación de la Calidad de la Educación (LLECE), International Adult Literacy Survey (IALS), Third International Mathematics and Science Study (TIMSS) and OECD (2001).

gaps? International experience and the world situation point to at least three plausible conjectures.

Firstly, globalization is having a very powerful impact on local cultures, both for better and for worse. For better, because the globalization of communications, particularly with new technologies, enables local cultures to become active participants in the planetary dialogue and more strongly assert their identities, demands and views of the world. For worse, because relationships of dominance, hegemony and acculturation arise in this great borderless flow of symbols and goods. In this mixed situation, access to knowledge seems to be a key to enhancing the positive aspect and mitigating the negative effects. The better and more highly educated people are, the better they can handle long-distance interaction and the more able they are to affirm their own identities and manage and mobilize their demands for a greater presence in the

global dialogue and a greater impact on “global civil society”.<sup>7</sup>

Secondly, the differences in education levels have also created a wider gap between the industrialized and developing worlds, and this gap seems harder and harder to bridge, condemning the developing world to the dismal status of globalization’s backyard. This situation can have a variety of effects, all of them catastrophic: cultural withdrawal and/or entrenchment, mass discouragement, loss of utopias and collective projects and, most notoriously, the rapid rise of

<sup>7</sup> One factor that tends to be overlooked in attempts to explain the greater assertiveness of Latin American indigenous groups in the last two decades is the university education received by their new leaders.

fundamentalisms of different kinds as a way of reacting to and compensating for exclusion and stagnation.

Thirdly, education, is the most massive, systematic and established tool available for socializing the new generations in multiculturalism, the new global democratic imaginary, the discourse and practice of human rights, learning about difference and the adaptation of universal knowledge to personal or group sensibilities.<sup>8</sup> Furthermore, as educators correct ethnocentric biases of their own and education reverses its historical purpose of cultural homogenization, it is possible that the new learning processes might open the way for radically different ones. Furthermore, by thematizing historical acculturation or homogenization and making them subjects of debate in the classroom, it is possible to promote affirmation of the identities that come together in that same classroom.

And what do States do in this situation, where the succession of educational achievements has not accelerated as hoped, education quality is unsatisfactory in different areas,<sup>9</sup> great inequality of achievement due to demand and supply conditions is found to persist when results are broken down by socio-economic stratum and between town and country,<sup>10</sup> and education system management has entered a deep crisis and an exhaustive process of reform?<sup>11</sup>

<sup>8</sup> This obviously depends on the type of education provided, but it can be an instrument for these purposes.

<sup>9</sup> The range of quality problems is very large and includes the following, among others: the irrelevance of pedagogic material to students' worlds of life and working futures; anachronistic teaching methods whose continuing focus on rote learning and head-on methods owes little to the new ways of acquiring and transmitting knowledge; the decline in teacher quality owing to poor living and working conditions and a lack of symbolic recognition; lack of appropriate equipment (textbooks, computers, audio-visual aids); very short school days or overcrowded classrooms; lack of support for learning conditions in the home, and lack of intermediate technical training options.

<sup>10</sup> On the demand side, the educational environment in the home is crucial to students' educational attainment: families with a low level of education (usually on low or medium-low incomes) tend to reproduce low attainment in their children. Furthermore, poor families do not have computers or access to information and communication technologies, which puts them at an ever more dramatic disadvantage when it comes to the development of new skills in the home. On the supply side, increasing private expenditure on schooling as families attach greater and greater importance to their children's education is continually widening the education standards gap between private and public-sector schools.

<sup>11</sup> Partly because the large increase in the number of young people enrolled over the last five decades has overwhelmed a system

Since the 1980s, recognition of these problems has led virtually all the Latin American countries to embark on reform, increasing human and financial resources to drive qualitative leaps in the teaching and learning of new generations. Although the emphasis has varied by country,<sup>12</sup> the reforms as a whole seek to act systematically on the most varied aspects of education, namely: curricular content and teaching methods; funding mechanisms; redistribution of functions between the public and private sectors; decentralization of education management, with responsibilities being handed over to municipalities and schools themselves; review of teaching practices and evaluation of achievements, and the beginnings of efforts to adapt curricula to new patterns of production and the sociocultural situation of students.

There has also been criticism in the different countries of the region, however, of the biases displayed by the current reforms. It is argued that the reforms are too technocratic, concentrating on financing and management mechanisms but not on content or actual teaching processes. It is objected that the emphasis on quality has come at the expense of the increased social equity in learning and educational attainment that is so urgently needed, and that the new ways of combining public and private action have led to increased segmentation in the quality of supply, and perhaps thence to the reproduction or exacerbation of social contrasts in future and decreased State responsibility for or oversight of schools and universities. It is claimed that the quality of teaching has not improved because teachers are still poorly paid and undervalued, and because neither the style nor the content of formal education has been successfully adapted to the cultural changes experienced by students in recent decades, particularly where media consumption and new youth imaginaries are concerned. It is maintained that the reforms are tending to prioritize knowledge that is functional to technological development and future production capabilities at the expense of less

designed for a different scale, partly because the State bureaucracy and the corporate behaviour of the system have accumulated certain "historical vices" that undermine the efficiency of public policy, partly because the system needs to be opened up to potential contributions by the private sector and other agents so that its practices can be improved, and partly because of the need to target resources on the most vulnerable groups and adapt education content to the sociocultural circumstances of students.

<sup>12</sup> For example, enthusiasm for decentralizing the system or giving a leading role to the private sector is not universally shared.

instrumental aspects of learning, such as self-expression and self-knowledge. And it is suggested that what is needed is to go back to the root of the education problem by asking about the meaning of education rather than

its utility and by realizing that an excessive focus on performance can lead to neglect of the really important goal: the emotional and intellectual development of students.

### III

## Differences of access and differences of meaning: how education interacts with information and communication technologies

### 1. Differences of access and ways to correct them

If a high-quality education is essential for the steady incorporation of large numbers of people into the knowledge society (and the globalization based on that model), access to communications is also essential, as not only is labour productivity at stake here, but symbolic integration as well. Density indicators for the audio-visual industry and audio-visual consumption, and for information technology and connectivity,<sup>13</sup> are becoming increasingly significant for the analysis of cultural trends, mainly because information and communication technologies will be more and more important in promoting cultural visibility, i.e., in enabling different cultural expressions to achieve a presence in the global media dialogue, as well as in the domestic political arena and public spaces.

Domestically, the communication industries provide the most important means of access to the public space for large sectors of society that lack means to express themselves, and thus offer the best opportunity for active civic participation. As of late 2002, communications density in the region was heterogeneous, varying from one medium to another. While most households had television, only 16% of them had fixed-line telephones, 20% of the population had mobile telephones, 8% had Internet access and just 0.3% had access to broadband (Hilbert, 2003). These

figures show that while a substantial part of the population has access to information, images, content and messages transmitted by others at a distance (and of which they are only passive recipients), few are in a position to communicate over distance on a one-to-one basis, and fewer still have access to long-distance interactive media that enable them to act as transmitters to larger groups.

If connectivity with interactive media is a crucial indicator of participation in the information and knowledge society, the contrasts observed between the United States and Latin America in 2002 are striking (ITU, 2003): while in the former there were 63 personal computers, 54 Internet users and 37 hosts per 100 inhabitants, Uruguay led the Latin American countries for hosts (2.1 per 100 inhabitants), Chile for users (20) and Costa Rica for personal computers (17.02).

When the different regions of the world are compared, the contrast in access to two-way communication goods (such as telephones and the Internet) is disturbing. At present, the 20% of the global population living in the poorest countries has just 1.5% of all telephone lines, while the 20% of the population in the richest countries has 74%. Regarding access to and presence on the Internet, it is also worrying that, according to the 1999 Human Development Report (UNDP, 1999), just 2.4% of the world population had Internet access, chiefly in industrialized countries, and 80% of all Internet communications took place in English (Brunner, 1999).

How far behind Latin America has fallen is also illustrated by the fact that in 1999 the region accounted for 8% of world population but only 4% of cyberspace

<sup>13</sup> By connectivity is meant access to interactive electronic networks.

activity; although it creates about 7% of world GDP, it is responsible for only 1% of all electronic commerce in the world (Hilbert, 2001a).<sup>14</sup> By contrast with these discouraging data, over recent years Latin America has seen the fastest expansion of its "Internet community" of any region in the world. While in 1999 the number of hosts increased by 30% in Europe, 61% in Asia and 74% in North America, the rise in Latin America was 136% (Hilbert, 2001a). This growth in access also reflects growth in electronic commerce, which began around 1998 and stood at US\$ 20 billion in 2002, 1% of Latin American GDP (ECLAC, 2003). In short, things are bad, but they are not going that badly.

If being outside the web means being symbolically deaf or shut out, the asymmetries between the connected and the unconnected represent an almost ontological divide. At the same time, connectivity is heavily skewed towards urban and metropolitan areas: in Argentina around 1999, 87% of all web sites and their physical locations were in the Federal Capital and Greater Buenos Aires. In Chile, Internet use is even more concentrated in Santiago than are population and GDP, and the percentage of electronic commerce that takes place in the capital is twice as great as the percentage of the country's population living there. As for segmentation by social strata, according to estimates by Emarketers 18.1% of the richest 15% of the Latin American population were connected in early 2000, but only 2.7% of the total population. By 2004, 68.9% of the richest 15% of the Latin American population aged 14 and over are expected to be connected, but only 10% of the total population aged 14 and over (Hilbert, 2003). According to the same source, 81.8% of the richest 15% of the Brazilian population is expected to be connected by 2004, as against 12.3% of the total population. If the web is the new focus of civic participation, what kind of participatory democracy can be expected with segmentation indicators like this?

Lastly, the Internet is creating surprising age segmentations. In Brazil, according to 1999 data, 15.8% of 14 to 19-year-olds had used the Internet, as against 11.3% of 20 to 35-year-olds, 5.6% of 36 to 45-year-olds and 3% of over-46s, while for personal computer use the figures by age group were 27%, 19%, 13.7%

and 6.3%, respectively.<sup>15</sup> The data on mobile telephone and Internet use in Chile and Mexico also reveal much greater prevalence among the young (figure 1). If these national situations can be extrapolated to other countries in the region, we can expect the generation gap to widen in future, since Internet use results not only in productivity differences but also in asymmetries in interlocution capacity, access to information and knowledge, cultural development and other aspects. Meanwhile, the data also reveal that ethnic discrimination is reproduced in access to audio-visual and information technology goods. The non-indigenous part of the population is five times as likely as the indigenous part to have a computer in the home, but only twice as likely to have a television set (figure 2).

The hopeful feature is that, despite the differences, connectivity is now spreading faster in Latin America than in any other region, and the proportion between access and equipment has improved by more than in other regions. The problem of network access diminishes as the cost of the equipment required for households to access microcomputers and the Internet falls, enabling connectivity to spread from higher-income to middle-income families. Apart from this, the need to "democratize" connectivity, i.e., spread it throughout the whole of society, has hitherto been addressed in three ways. First, there are the highly targeted programmes initiated by non-governmental organizations (NGOs) and some State or municipal programmes connecting up small groups in what is still an experimental way. The cases most often cited in Latin America are those of indigenous movements and community organizations that use the Internet to enlarge alliances, create a presence in the virtual public space, mobilize politically and obtain information on markets, loans and other services.

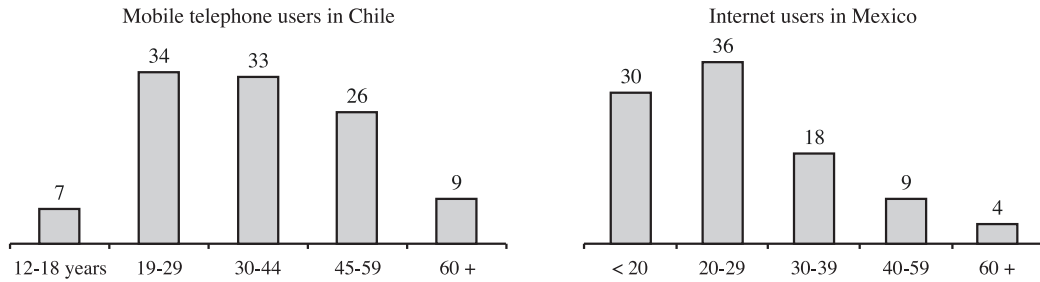
A second method is the provision of public facilities where people pay diminishing amounts to go on the Internet. The third, and the one that probably has the greatest potential to democratize access, is the provision of networked computers in State schools as part of public-sector educational reform programmes whose aim is to bring electronic networks into formal education as a learning tool. In these last two cases, the starting premise is that the digital era is defined not by ownership of computers but by access to the web; the most important capital is learning, not the machine. In

<sup>14</sup> In 2000, Brazil accounted for 69% of all electronic commerce in Latin America (Hilbert, 2001b). In general, commerce of this type is expected to increase exponentially, from virtually nothing in 1999 to about US\$ 100 billion in 2004 (Hilbert, 2001b).

<sup>15</sup> Brazilian Ministry of Health data, cited by Hilbert (2001b).

FIGURE 1

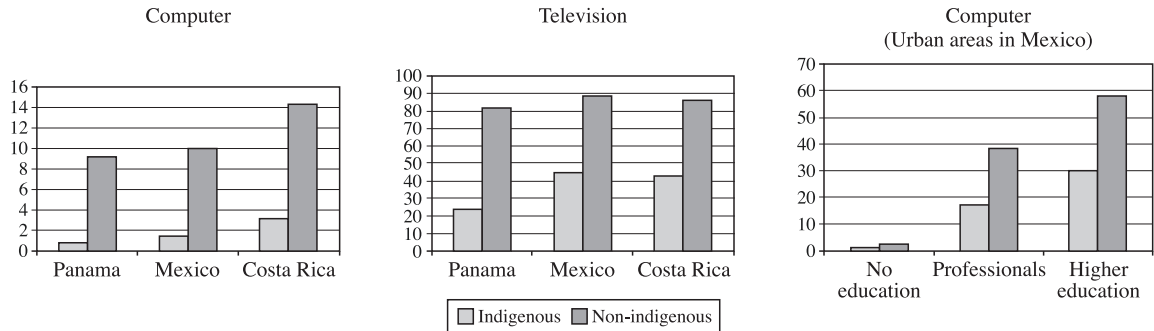
**Penetration rate of information and communication technologies, by age group, 2002**  
(Percentages of each group)



Source: SUBTEL (2002) and TNS (2002).

FIGURE 2

**Proportion of the population with a computer/television in the home, by ethnic origin, 2000**  
(Percentages)



Source: Microdatabases in Panama, Mexico and Costa Rica, 2000 census round.

countries such as Peru, Internet use is spreading not through computers in the home but through Internet cafes and public booths, while in countries such as Brazil, Chile, Costa Rica and Mexico, growth in user numbers is being driven by network installation in schools. If Chile is now the Latin American country with the highest connectivity index, this is essentially due to the success of its programme to install interconnected terminals throughout the education system.

Education coverage in Latin America is close to 100% at the primary level and is rapidly increasing at the secondary level. It is at school that children and young people are institutionalized and develop day by day their ability to learn and interact with their peers. At the same time, large social differences and high poverty rates in many of the region's countries mean that the great majority of households do not have a computer. It is in schools, then, that access can be

democratized. Furthermore, the shared use of terminals there offers positive synergies for the learning of computer languages, confidence and skill in cyberspace and the use of electronic networks to process information and construct knowledge relating to the school curriculum. Socializing in networks should be part of the socializing mission of schools.

In the region, there have now been numerous national initiatives to equip State schools for interactive media, with variable levels of success, coverage and continuity. Brazil has launched the Programa Nacional de Informática na Educação (National Programme for Computers in Education, or ProInfo) and, for communications media, the Programa Nacional de Educação a Distância: TV Escola (National Programme for Distance Learning: School TV), which supports teaching in the public education network by providing assistance with methodology, teaching technologies and support material for classroom work through a



television channel dedicated exclusively to education. In Costa Rica, the Programa de Informática Educativa (Educational Computing Programme), operated nationwide since 1988 by the Ministry of Public Education and the Omar Dengo Foundation, seeks to improve education quality by using computers in State primary schools. In Chile, the Red Enlaces (Links Network) project run by the Ministry of Education has created a computer-based inter-school communications network among students, teachers and professionals from other education-related institutions. This was started experimentally in 1992 and by 2001 some 62% of primary schools and 89% of secondary schools in the country were connected to the Internet through the Enlaces programme. Other countries including Argentina, Uruguay, Mexico and Cuba are also engaged in creating and extending school connectivity.

Some questions arise concerning the route taken by school computing programmes in the region's countries. The first relates to "computer density", i.e., the number of students sharing each computer in schools. This is crucial, because frequent, personalized access is essential if students are to familiarize themselves with computers and make good use of them. In Chile, which is one of the countries with the highest levels of school connectivity, it has not been easy to bring down the number of students per computer: this was estimated at 71 in 1998, falling to 65 in 2001 (Jara Schnettler and Pávez, 2001). In the United States, the ratio was 1 to 125 students in 1981, falling to 1 to 5 in 2000 in the case of computers without a multimedia connection and 1 to 10 for modern multimedia computers with a network connection (Cuban, 2001). The second question concerns the response of teachers, who tend to feel threatened by the greater rapidity with which students develop computer skills and watch anxiously as the gap between virtual culture and pedagogic culture widens. Given how little Latin American schoolteachers earn and how little free time they have for retraining, they are unlikely to be able to familiarize themselves with computers on their own account. A few free hours therefore need to be found in the timetable so that they can be trained in the schools themselves, as there is little likelihood of their having good equipment at home. The third question has to do with the prospects for keeping computers constantly updated and maintained once they are installed in schools, as this entails ongoing investment over and above what is provided under the initial equipment provision programmes.

Among the lessons learnt from the Chilean case and applicable to other national situations in Latin America, the following are important (Jara Schnettler and Pávez, 2001). Firstly, the introduction of information and communication technologies in the school system is a slow process whose pace is closer to the gradual one of cultural change than to the short time-horizon of elected governments. Secondly, innovation should be incremental and unforced, which means that the spread of these technologies should be coordinated with the pedagogic needs of teachers by supplying the latter with tools (equipment, software, guides) that are easy to understand and use. Thirdly, the provision of resources and skills cannot be uniform across the system, but must be adapted to the different needs of teachers and students in schools with very different learning environments. Fourthly, this aspect of education reform needs to be coordinated with others, so that synergies can be generated between school computerization programmes and programmes to create classroom libraries, change curricular content, develop the transversal curriculum and so on.

Lastly, it is not clear to what extent greater provision of computers, a better ratio between student and computer numbers and connectivity for all are sufficient conditions for really fast progress in computer literacy, learning capabilities and future prospects of higher occupational productivity for students. An exhaustive study (Cuban, 2001) conducted in the United States in the 1990s, the decade when the country did most to equip schools with computers, and paying particular attention to Silicon Valley, the area where computing is most highly developed, leaves a great many doubts. According to its author, there needs to be some scepticism about the enthusiasm of businesses and experts who believe that more and better computer technologies in schools will synchronize learning processes with the challenges of work in modern market economies.

The study notes that during the last two decades of the twentieth century, the United States Federal Government invested unprecedented sums in equipping all the State schools in the country with these technologies, with the fervent support of parents, company executives, public officials and educators, thereby democratizing access. What has not been confirmed in practice, though, is the assumption that drove this investment, namely that greater access in classrooms automatically leads to greater use, better and more efficient teaching and learning, and thence greater preparedness for work. Following a large-scale



review of the data and case studies, Cuban arrives at four unsettling conclusions. The first is that there is no real consensus as to what computer literacy is, i.e., whether it simply means using a computer with basic software or, for example, having the ability to download programs, update software and the hard disk, etc. The second is that in the 1990s the United States did not evince any major change in the quality of teaching and learning, as measured by increased academic achievement among urban, suburban and rural students, that might be attributed to increased computer access. The third is that teachers continue to be limited and occasional users of new technology where teaching methods in the classroom are concerned, however much they might use computers for administrative purposes. And lastly, school equipment levels have no clear impact on future access to highly paid jobs, since the students who subsequently obtain the best jobs usually attribute their skills to the use of computers outside school (Cuban, 2001).

## **2. Divergent perspectives among information and communication technologies, culture and education**

The technologies we use to interact in the virtual world have a dialectical relationship with culture. As Manuel Castells puts it, many features of the information technology paradigm, such as interconnection, porosity and flexibility, also become cultural traits (Castells, 1999, pp. 88-89). On the one hand, values characteristic of Western modernity are manifested in this turn-of-century setting by a paroxysm of mass communication in a virtual world: the speed of movement, the multiplication of interlocutors, the dissolution of national frontiers and spatial restrictions, the infinitesimal disaggregation of knowledge, the autonomy of individuals and their resistance to exogenous regulation and, as Paul Virilio would say, the usurpation of public affairs by public images, of faces by spectres, as though the new information and communication technologies gave material expression to the characteristic features of postmodernity or late modernity. At the same time, though, the use made of these technological devices as we traverse virtual space acts upon the very cultural frameworks that confer a certain destiny on technology. Thus, technology and culture are dynamically intertwined.

The new branches of the culture industry and information and communication technologies are radically redefining communication, access to

information and the way knowledge is produced. They are blurring the boundaries between active learning and passive receptiveness, between the roles of transmission and reception, between settled culture (values, religion, inherited knowledge) and contingent culture (video clips, soap operas, video games, chat, etc.), between high and low culture, between the erudite and the popular, between the national and the exogenous. The regime of rapid obsolescence that rules cultural markets and industries is changing people's perception of what, when, where and why they know and learn. Information is becoming so accessible, immediate, varied and detailed that the traditional figure of the tutor or teacher is losing meaning for the many children who enter and leave the world of their computer terminals as naturally as eating or walking. In its potential for continuous dialogue, culture is opening up in all directions, decentring its places of production and processing.

With change on this scale, education is being rapidly called into question. It is not easy for the State to dominate the field of education when there are these new sources of information, culture, knowledge and entertainment, combining the educational and informative functions of the light culture industry with those of the heavy culture industry. There is no one formula for incorporating the new media into a classroom routine, or for coordinating joint operations between the new output of the culture industry and the challenge of modernizing education in sectors with low and medium-low incomes, or for organizing the retraining of education staff (teachers, planners and educational "managers") to deal with these challenges, or for using installed capacity and its impact on the vast majority of households to implement environmental education, consumer education and responsible parenthood education programmes, among others.

Can there be any doubt? Audio-visual media use and access to interactive networks are a powerful tool for extending and democratizing learning opportunities among different income groups. The introduction of computer and audio-visual aids is a major contribution to education, as it enriches teaching and learning methods, makes up-to-date knowledge and information of all kinds accessible to students and teachers, revolutionizes teacher training, facilitates distance learning, improves the efficiency of educational management and makes learning more participatory.

On the other hand, though, education has to reconcile new skills with the cumulative tradition of thoughtful, critical reflection. Media euphoria cannot

sweep away pedagogic memory; rather, we need to find ways of using the new devices to enhance learning without thereby destroying the deeper meaning of learning. It is true that an encyclopaedic approach to education may be obsolete once information is stored on hard disks. But the same is not true of the humanism with which it was associated. Today more than ever we need a critical approach to instrumental reason (as a type of reason that nullifies other rationalities), the ability to distinguish selectively between the advantages of message transmission technologies and the risk of reducing spirit to the logic of mere transmission, misgivings about an overdose of media stimulation when this is reduced to pure sequence, and personal assertiveness to avoid being overwhelmed by the seduction of so many textures moving over the textureless surface of the monitor.

Here is the limitation and opportunity for education. On the one hand, to capitalize on the new learning materials in order to democratize access to productivity, citizenship, communication and the diversification of daily life. On the other, to mobilize its own heritage to ensure these materials are used in a way that does not lead to passivity or the unbearable lightness of being. There are no clear formulae to determine what needs to be discarded and what kept in pedagogy and the curriculum. In multimedia time and space there is no need to internalize the encyclopaedia: it is enough to know how to bring it up on the monitor. But the monitor does not teach you how to switch off the monitor.

There is also the drama of Latin American schools failing to absorb the new languages that students themselves bring to class. Narrowness comes from both sides, then. It is necessary to understand that “the transformation of ways of reading... is cutting away the ground from beneath the obstinate identification of reading with books rather than with the plurality and heterogeneity of texts, stories and writings (oral, visual, musical, audio-visual and telematic) now in circulation” (Martín Barbero, 1996, p. 12). And Jesús Martín Barbero is right to point out that television rivals school in a profoundly epistemological way, since while television “delocalizes” knowledge, blends it, uses it discontinuously and spasmodically in pursuit of entertainment and withdraws it from the “institutionality” whence it arose, school remains at the antipodes, dealing with long time periods, systematic thought, effort and discipline. Furthermore, television is now the place where “frontiers shift between reason and imagination, between knowledge and information,

nature and artifice, art and science, expert knowledge and worldly experience” (Martín Barbero, 1996, p. 14). For schools, there is the challenge of breaking out of the defensive position they have taken up in response to mass communication, using the plasticity of the mass media to transmit and combine knowledge while at the same time organizing this mosaic of media stimuli in such a way as to prevent knowledge being reduced to banality and to nurture in students a spirit of selectiveness towards what Baudrillard called communicational ecstasy.

Orozco (1996) suggests going beyond the two antithetical views of education vis-à-vis the communications media: the defence of the audience against the media, and the uncritical acceptance of the latter as an educational modernization resource. He proposes instead a “critical pedagogy of representation” that opens a debate on media receptiveness in the classroom, treats school as one institution among others competing to exercise hegemony over knowledge, inculcates skills that enable students to express themselves in a multimedia environment and regards literacy training as an ongoing process for the different alphabets –media, multicultural and that of ever-faster change– of a postmodern world.<sup>16</sup>

Where the new information and communication technologies are concerned, education is faced with at least three major long-term changes. Firstly, educating by means of new information and knowledge technologies involves linking their use in some way with the production of meaning, both individual and collective. This production of meaning is nourished, in turn, by people’s own culture. The idea, then, is not to transmit an “amnesiac euphoria” but to inculcate a taste and responsibility for the encounter between culture and technology, identity and alterity, ends and means. As Jesús Martín Barbero put it, education has to be a suitable space for moving from media to mediations.

Secondly, virtual interaction draws on a hypertext in which reading and writing, oral communication and image culture mingle. Its immediacy is oral, while typing is the basic motor action. The pre-eminence of one over the other may depend on what users decide in accordance with the way they visualize the interlocution of the moment through the screen. They may prefer written, acoustic or visual communication depending

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<sup>16</sup> See Orozco, 1996.

on the occasion and the effect desired. This undoubtedly affects the way knowledge is acquired, processed and transmitted. If school curricula are based on written culture and compartmentalization of genres and subjects, the hypertext of virtual communication transcends frontiers and watertight compartments. It is a matter not just of content, but also and mainly of learning and teaching styles. By the same token, changes in virtual practices challenge the basis of the system. How much should the teaching system be revolutionized to enhance learning through the new information and knowledge devices? There are no unequivocal answers to this question. Change may of necessity have to be rather gradual, given that teacher training and practices do not move at the same pace as innovations in information and communication technologies.

Lastly, virtual interaction oscillates between means and end. When people "chat", communication is the object and there is nothing that transcends it; but if we are looking for a piece of scientific information to use in our research, the virtual search is only a means. On this point, too, education is caught between the pedestal and the dock, so to speak. Children and young people of school age tend to use the web in a playful, unorganized way. What is appreciated, in other words, is "virtual immanentism" and not the potential of the web for gathering knowledge. The risk of this interchange of priorities is that the ability to organize knowledge and learning dynamics may be lost. The role of the teacher, and of education planners, must include the capacity to provide a context in which the use of computer and communication technologies in schools retains a relationship between means and ends such that communication is used to acquire and process knowledge in an ordered, holistic way. Critical thinking and a healthy dose of encyclopaedism (properly understood) have to provide the basis for learning practices that use these technologies. Otherwise, there is the risk of energy being wasted on uncoordinated acts of communication that neither construct nor systematize the information they generate.

To sum up: on the one hand, there can be no doubt that there is an urgent need for information and communication technologies to be widely incorporated into education, because this is the quickest and most economical way of closing the digital gap on a mass scale, between and within countries. If social inclusion increasingly depends on access to knowledge, participation in networks and the use of up-to-date information and communication technologies, the

formal education system is the key to widening this access. On the other hand, this does not mean that the "digitization" of education inspires us with knowledge and frees students from all traces of false consciousness and ignorance. There is nothing to guarantee how the tensions between school culture and youth culture and between instrumental reason and sense production will be resolved, computer or no computer. But these tensions can only be resolved on the move. And for there to be movement, schools have to be equipped. This is the double-edged sword for education: using the multimedia industry as a source of motivation, expressiveness and new forms of literacy, but without losing the critical spirit or the accumulated heritage of the learning experience. There are no clear formulae for this: just trial and error, and learning from the experience of others.

### 3. Questions

We know that most schools in the region still have severe shortcomings in teaching styles and curricular content. We know that, like learning a new language, it is far easier for children and adolescents to familiarize themselves with virtual networks than it is for adults. We know that the cost of computerizing public education means that a special room with network terminals might be affordable at best, but not intensive and extensive use in the classroom. But we also know that once the digital network begins to be used, this use grows exponentially and has an enormous contagion effect; that this very use produces a degree of expertise which can be socialized among students, and between students and teachers; and that networked study does not do away with the encyclopaedia but makes it accessible, approachable and adaptable to users' tastes.

By the same token, there is no clear ending to this process, which should bring the logic of the network and mass pedagogy into play together. There is fear and enthusiasm, insecurity and curiosity, resistance and openness. It is a culture clash with practical consequences. Certainly, teaching based on memorization and the compartmentalized presentation of knowledge cannot survive the ease with which memory is objectivized and expanded in a computer, or the swiftness with which heterogeneous data and disciplines are linked together in networked projects.

Among the issues raised by this are the tensions that are bound to arise between students who become skilled in network use and teachers who feel they are

losing authority in this process.<sup>17</sup> Another issue is segmentation of access, since there remain differences in the type of software installed, the accessories available, the intensity of Internet access and the training received by teachers. Furthermore, while in some schools computer use is confined to mechanical application exercises, in others its potential for learning, experimentation, project construction and teamwork is optimized; and while some use the Internet for games, others use it to learn (Trahtemberg, 2000, p. 10).

Daily use of information and communication technologies creates problems whose extent and solutions are not yet known, but which have to do with the values, attitudes and expectations of children and young people who spend a large part of their time in front of screens and monitors. New addictions to games and trivial information, low tolerance to frustration, unwillingness to defer gratification, difficulty in rationalizing effort, distaste for written forms of learning and for extended in-depth research into a single subject, delegitimization of the authority of teachers and other adult figures, an excessively utilitarian attitude to knowledge, unwillingness to communicate face to face and a diminished capacity for spoken expression may be some of the problems that need to be considered. Warning voices are not lacking: “An already weak capacity for reading comprehension will become weaker and weaker, not only because students will read fewer and fewer books, but because they will increase their reading of short, broken messages like those they encounter on the Internet and in chat or e-mail” (Trahtemberg, 2000, p. 14).

For this reason, it is “vital to emphasize values and the importance of attitudes once again, as well as the indispensable acquisition of abilities, skills and knowledge that help individuals develop their own talents to the utmost and then apply them to the positive development of social institutions” (Almada, 2000,

p. 16). Research by FLACSO in a number of Latin American countries suggests that one of the problems as regards the social impact of the Internet on school culture is the tendency for it to be implemented in a merely instrumental or technical way that fails to capitalize on its potential as a language and system of representations in which young people create and recreate narratives and views of themselves and society (Bonilla, 2001). Again, a study among school students in Bogota showed that Internet use in schools tended to amount to no more than an electronic substitute for the time-honoured encyclopaedic approach, reproducing traditional pedagogies (*ibid.*). Methods need to be devised to follow up and evaluate the use of information and communication technologies in the school learning process, so that both students and teachers not only learn how to use these technologies, but also develop criteria that enable them to learn better, develop a critical spirit and combine recreational and educational aspects as a result.<sup>18</sup>

Other criticisms of the way computer provision programmes are applied in the education system relate to the role and training of teachers. Among other things, it is pointed out that when training is carried out, programmes do not specify the profile of the teacher to be trained and information and communication technologies are not incorporated into training curricula (Martínez Santiago, 2000). It is also pointed out that teaching a networked course is very different from teaching a traditional one, since teachers have to encourage the interaction of participants. This “requires teachers to spend the day answering questions, monitoring discussions, providing feedback”, which means “getting into contact several times a day, reading their students’ notes and answering them, quite apart from correcting homework and checking individual or group work, which also needs dedication” (Trahtemberg, 2000, p. 6). Thus, teachers have to be simultaneously learning new methods and content and acting as pedagogic reformers and facilitators, all this in relation to a new tool that their students are probably learning to use faster than they are.

<sup>17</sup> Research by the Latin American Faculty of Social Sciences (FLACSO) using case studies conducted in different Latin American countries found that “the informal exchanges that arise among students during practical computing sessions neutralize and diminish the teacher’s ability to exercise control”, and that “the virtual classroom is a place where the playfulness of students clashes with the vertical authority of the teacher (...) the Internet marks the boundary between experience inside and outside the classroom, inside and outside the educational order (...) between the culture of books, understood as a way of relating, of exerting pedagogic control over the student, and new forms of learning involving journeys through cyberspace by young people...” (Bonilla, 2001, pp. 9-10).

<sup>18</sup> It is not easy to evaluate the impact and achievements of educational computing programmes, however, since equipment and information programmes and the prior capabilities of teachers in their use vary from one establishment to another, and because it is difficult to separate out the effects of information and communication technology use in schools where all sorts of different activities are taking place (Jara Schnettler and Pávez, 2001).



Classroom use of conventional audio-visual resources such as radio, video and television should also become more and more widespread in schools, and this once again places teachers in an unaccustomed position. Experience shows that students' attention, motivation and absorption can increase considerably when audio-visual material is introduced and then used as the basis for work with a more horizontal and conversational structure. By introducing these media and encouraging critical discussion of them, schools can overcome the opposition between school learning and media consumption, stimulating students to be more selective and critical in their cultural consumption. The challenge for schools, particularly in the public sector, is to relinquish their defensive attitude towards mass communications and take advantage of the plasticity of these media to transmit and combine knowledge, while at the same time organizing this mosaic of media stimuli in such a way that knowledge is not trivialized and students are encouraged to be selective.

The use of information and communication technologies in schools opens up different theoretical perspectives which in turn raise questions to which there are no easy answers (Jara Schnettler and Pávez, 2001). Are these technologies just supporting instruments for the learning process or the engine of pedagogic and organizational change, or both at once? Who are the best agents to bring about change through the use of these technologies in schools, and what technological capabilities need to be promoted there to empower and be empowered by information and communication technologies? What is the reason for promoting the use of these technologies in schools: results, motivations, processes, capabilities? What is certain is that their use has an immanent meaning related to the learning process itself and the motivations involved in this process: a purpose within the school that has to do with changes in teaching practices, and a clear objective beyond the

school, which is to educate people to operate in the knowledge society.

Concerning learning processes in schools, it is argued that information and communication technologies make it easier to understand key concepts in the sciences, language and mathematics and enable students to absorb the logic of these disciplines through the use of methods that allow more profound and immediate assimilation (interactivity, simulation, play, modelling). Consequently, training in these technologies is an end in itself, as they are an indispensable minimum in the working and cultural world of today and because they enable more significant learning of knowledge as a whole. As has been noted, however, the spread of these technologies in schools is hindered by the complexity and heterogeneity of education systems, large differences in computer resources, institutional plans, teacher training, the priority given to them and the number of hours of use in the school day, among other aspects.

Lastly, providing schools with audio-visual and computer equipment is the beginning of a process and not the core of educational transformation. Educating people for the information and knowledge society means much more than swapping books for screens or monitors. It means combining the best of the critical tradition and pedagogic experience with the new technological options and coordinating formal education with daily long-distance communication practices in a society where these practices are becoming more and more important, massive and intertwined. The road is a long one and it will test planners, school heads, teachers, students, students' families, software writers and culture industry communicators and strategists. From society it will demand a broad consensus that outlasts terms of government, both to ensure continuity and ever-increasing achievement and to provide the resources needed for a leap forward in education and knowledge that matches up to the challenges dealt with here.

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# Microfinance institutions *in the development* of financial markets

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For the last two decades, microfinance has ranked high on the list of policy instruments for fighting poverty. Supporting the creation of access to formal financial services for low-income households holds out the promise of improving the living conditions of poor families and fostering economic development. Furthermore, it is claimed to be a very cost-effective approach because some non-governmental organizations (NGOs) that have been upscaled into microbanks have shown that financial services can be offered to low-income households while covering costs and even earning a moderate profit. Recent studies, however, are sceptical about the high expectations raised by the microfinance approach, since profitable microfinance institutions (MFIs) are the exception rather than the rule. Institutional innovation is called for in order to reproduce these rare successes on a larger scale. This article aims to offer preliminary insights into the potential of two rather new institutional alternatives to upscaling: the creation of microfinance departments at existing for-profit banks (i.e., downscaling) and the founding of greenfield banks.

# I

## Motivation: can proper institution-building make the microfinance promise come true?

*“About one billion people globally live in households with per capita incomes of under one dollar a day. The policymakers and practitioners who have been trying to improve the lives of that billion face an uphill battle...*

*Amid the dispiriting news, excitement is building about a set of unusual financial institutions prospering in distant corners of the world—especially Bolivia, Bangladesh, and Indonesia. The hope is that much poverty can be alleviated—and that economic and social structures can be transformed fundamentally—by providing financial services to low-income households.*

*These institutions, united under the banner of microfinance, share a commitment to serving clients that have been excluded from the formal banking sector...”<sup>1</sup>*

The glimmer of hope raised by the “microfinance promise” could hardly be captured any more vividly than in this opening passage of Jonathan Morduch’s lead article of the same title in the December 1999 issue of *Journal of Economic Literature*. The essay deserves to be considered a milestone in the literature on microfinance, for two reasons.

- Firstly, the topic of microfinance had for years received broad attention from development practitioners and politicians alike. However, up to the time of that publication, interest in the topic had been confined to a small community of scientists leading a rather closed-shop existence. Morduch’s achievement was to introduce the topic to a broad range of economists in academia.
- Secondly, the paper explicitly states that despite the millions of dollars of donor aid that for more than two decades were devoted to and are still flowing into the building of microfinance institutions (MFIs) “the greatest promise of microfinance is so far unmet, and the boldest claims do not withstand close scrutiny” (Morduch, 1999, p. 1571).

What is the promise of microfinance all about? What hopes have so far been disappointed? The basic idea of microfinance is fairly simple: the development of the financial market through the creation of access

to formal financial services for low-income households—and, more importantly, for small-scale entrepreneurs and microentrepreneurs—gives beneficiaries the opportunity to help themselves. They can escape poverty by stabilizing their consumption streams and by obtaining investment loans to improve their businesses, thereby raising household income, contributing to job creation and fostering the development of a vibrant sector of small enterprises as well as economic growth in general. Furthermore—and this seems to be the most attractive feature of the microfinance approach—fighting poverty by offering access to financial services holds out the promise of being relatively cost-effective. After an initial phase of subsidized institution-building, MFIs are supposed to reach financial sustainability.<sup>2</sup> The promoters of the microfinance movement are convinced that financial services for the poor can be organized so as to cover costs, enabling MFIs to survive in the market without any further financial support and even to earn a moderate profit. If this could indeed be achieved, microfinance would create a “win-win solution” advantageous to poor clients and the owners of MFIs alike. With no need for further fuel in the form of continual subsidies, the commercial forces of the financial market could continue to fight poverty as if they were a *perpetuum mobile*.

<sup>1</sup> See Morduch, 1999, p. 1569.

<sup>2</sup> See Krahen and Schmidt (1994).

The evidence examined in Morduch's paper gives reason to be sceptical about how realistic feasible microfinance really is. Concerning the impact on poverty, very few empirical studies actually monitor the data of MFI customers for possible biases.<sup>3</sup> Therefore, other than some illustrative case studies, empirical evidence of a positive impact of microfinance on clients' living conditions and job creation is scarce. Furthermore, there also seems to be good reason to question the claim that microfinance—after a limited period of subsidized institution-building—can develop into a zero-cost weapon against poverty. Although many MFIs can point to considerable successes in assessing the credit risk of microfinance clients once presumed to be “unbankable”, “high repayment rates have seldom translated into profits as advertised” (Morduch, 1999, p. 1571). The dream of MFIs creating a “win-win solution” and of commercial banking becoming a driving force in fighting poverty seems to be highly unrealistic. Of the thousands of MFIs in the world, only a handful of flagship institutions are really meeting their dual mission of serving the target group of the poor and simultaneously being financially sustainable.

In the light of these sobering facts, Morduch concludes that one needs to be more realistic about the microfinance promise, although without giving it up altogether. The idea of offering self-help in the form of access to financial services is simply too attractive to be abandoned, not least because the history of microfinance has shown that considerable improvements can be made by learning from past mistakes. The first generation of microfinance projects, which came into being in the 1970s and relied on subsidized loans as a “gift” for the unbankable poor, had dismal results.<sup>4</sup> Huge amounts of money were lost, because loans were seldom repaid.<sup>5</sup> Furthermore, as subsidized loans have a broad appeal, the money often did not even reach members of the target group.<sup>6</sup> The lessons learned from these failures resulted in a new approach to microfinance designed to prevent such loans from being misconstrued as gifts. Such financial “gifts”, rather than helping to develop financial-market

mechanisms, had disrupted them. This led to the creation of the so-called market-oriented approach to microfinance. Low-income households not served by formal banks were regarded as clients able to repay their loans if the MFI insisted on a repayment discipline. Furthermore, interest rates on microloans had to be at least as high as the market rate for larger loans in order to make them unattractive to unintended recipients. Henceforth, microfinance ceased to be regarded as a vehicle for the transfer of wealth to the poor, and instead came to be considered as an instrument for the development of financial markets.

This first wave of institutional innovation, focusing on credit technology and client-institution relations, has allowed today's MFIs to attain high repayment rates. These successes—which, at least for some shining examples among MFIs, translated into cost coverage, profits and formal registration as financial institutions (an achievement presumed impossible only a few years before)—were the root of the dream of the “win-win solution”. Given that this dream has not yet come true on a large scale, the advice offered by Morduch and others<sup>7</sup> is to improve the institutional set-up of MFIs and “take another hard look at management structures and mechanism design in order to lower costs while maintaining outreach. Doing so will be far from simple, and it is hard to imagine substantial progress without a second major wave of innovation” (Morduch, 1999, p. 1609).

In fact, much innovation has taken place in this field during the last few years, in particular regarding the institutional set-up of MFIs and their ownership and governance structure. The vast majority of MFIs on which Morduch's assessment is based are still, or at least started off as, NGOs. The most successful of them may have changed their legal structure during the process of “upscaling” (i.e., while becoming formal banks specializing in microfinance), as did the flagship institutions of the microfinance movement in Bolivia, BancoSol and Caja Los Andes.<sup>8</sup> Inspired by their successes and the dream of commercializing microloans, donors started to experiment with institutional alternatives to the upscaling of NGOs. Projects to establish microloan departments in existing institutions of the formal financial sector (i.e., to “downscale”) were among the institutional innovations

<sup>3</sup> See Khandker, Samad and Khan (1998); Morduch (2000).

<sup>4</sup> See Vogel (1984).

<sup>5</sup> “The most important element of credit subsidization was not the artificially low lending rate, but rather the fact that clever (and influential) borrowers had a good chance of avoiding repayment of their loans altogether”. Krahen and Schmidt (1994, p. 20).

<sup>6</sup> See Adams, Graham and Von Pischke (1984).

<sup>7</sup> Such as Banerjee (2002) and Hulme and Mosley (1998).

<sup>8</sup> See Rhyne (2001).

that were experimented with in the 1990s. In the latter part of the decade, donors took to another new approach. Instead of upscaling NGOs, they set up greenfield banks specialized in microfinance but possessing a banking licence from the very outset. These banks were founded as corporations, with donor institutions and private investors acting as the shareholders. Furthermore, an investment company specialized in equity holdings in MFIs assumed a leading role in founding these *de novo* banks. These institutional innovations sound much more like “real” financial business than does the long drawn-out process of transforming an NGO originally meant to help the poor into a formal banking institution. Has the era of commercial microfinance begun, after all? Do these institutional innovations in building MFIs have

the potential for making the microfinance promise come true on a bigger scale? These are the questions that the following sections of this article will address.

Section II classifies the institutional options for building MFIs into upscaling, downscaling and the founding of greenfield banks. This structure is intended to serve as a kind of theoretical basis for not only identifying the different institutional characteristics of these three approaches but also affording a preliminary glimpse of their potential advantages and drawbacks. Sections III and IV provide some empirical evidence on selected downscaling projects and on initiatives involving the creation of greenfield banks that may give an initial idea of their potential. The last section draws some preliminary conclusions.

## II

### Downscaling a for-profit bank: the opposite strategy to upscaling an NGO

Convincing an established commercial bank to hand out microloans on its own account, without government regulations requiring it to do so, used to be considered a rather hopeless endeavour. After all, it was these banks' lack of interest in serving low-income customers that gave rise to the idea of microfinance as a tool of economic development. Even experts who were well informed about the successes of the market-oriented approach to microfinance in the 1980s and the early 1990s were rather sceptical about downscaling projects. Hulme and Mosley, who published the results of their research on institution-building in microfinance in 1996, concluded: “The most significant observation must be that non-profit institutions (including public-sector and non-governmental organizations) appear to have a comparative advantage over for-profit institutions in providing formal financial sector services to poor people” (Hulme and Mosley, 1996, p. 157). They base their assertion on three central arguments:

- The first is of an empirical nature: hardly any of the institutions examined was a purely for-profit company: “the only private company in our study that was providing such services, and that had reached a relative state of maturity, was BancoSol.

This had its origins in PRODEM, a non-governmental organisation” (Hulme and Mosley, 1996, p. 157).

- The other two arguments are of a more theoretical nature and refer to the institutions' governance structure: firstly, “private companies are simply not prepared to provide the venture capital for experimental services to low-income borrowers (and savers)... The second reason relates to the erroneous assumption that features of private-sector management that are essential to the effective provision of financial services (costing and pricing services, recovering costs, promoting a performance orientation in staff...) are found only in for-profit concerns” (Hulme and Mosley, 1996, pp. 157 and 158).

None of the three arguments, however, is truly convincing. Firstly, the fact that something has not been attempted does not mean that it cannot be done. Secondly, private companies may not be willing to invest venture capital in microfinance, but donors do not expect them to. In downscaling projects, a donor agency typically subsidizes the start-up costs of the microloan department. Thirdly, the authors are

TABLE 1

## Institutional options for microfinancing

		Non-profit		For-profit
Large institution	Formal	Public policy bank		Privately owned bank
↓				⇕
↓	Formal FI serving target group	Upscaling ↑	Greenfield bank	⇕
↓		↑		Downscaling
↓	Semiformal	NGO		
Small	Informal	Church funds		Private moneylender

undoubtedly correct in asserting that private-sector management techniques can be transferred to non-profit organizations. This is precisely the purpose of upscaling an NGO and what led to the success of the market-oriented approach to microfinance. However, an equally or even more successful approach to building MFIs might be to utilize the “natural” incentive of for-profit companies to cover costs, rather than transforming a non-profit institution geared to helping a given target group into an organization that abides by budget constraints and the requirements of economic efficiency.

Nevertheless, Hulme and Mosley’s arguments contain the key to understanding the crucial difference in alternative institution-building approaches (table 1). They compare non-profit with for-profit MFIs, rather than upscaling with downscaling. By alluding to an institution’s size and to its movement up or down a scale, these expressions, established in the microfinance literature to characterize the two opposing strategies for building MFIs, are, at best, misleading. In institution-building, size is less important than other considerations. The key difference is the ownership and governance structure of the partner institution that is to be transformed into an MFI. In upscaling projects, the typical NGO partner is a small non-profit institution that belongs to the informal or semiformal financial sector. A commercial bank that serves as the partner of a downscaling project is generally a bigger entity that is already registered as a formal financial institution. However, the essential conditions for such a project are the business goals and the ownership structure of the commercial bank: for a “genuine” downscaling project, the institution should be a private-sector for-profit bank. If the institution is a State-owned bank, it will have features similar to those of an NGO, regardless

of how large and formal it may be. In contrast, a private moneylender, even if small and informal, shares key characteristics with private commercial banks. Seen in this light, the creation of a greenfield bank is not really an additional option.<sup>9</sup> In addition to the fact that creating a *de novo* bank saves the time needed to transform an existing institution, and instead requires the effort of building an institution from the ground up, greenfield banks may have the institutional features of either non-profits or for-profits, depending on their ownership and governance structure—an issue that needs to be examined (table 1).

What are the main differences in the ownership and governance structure of non-profits and for-profits that determine the distinct challenges of transforming each type of institution into a formal MFI? The most common prejudices as to the essential difficulties faced in institution-building and that prevent an MFI from fulfilling its dual mission might provide the first clues. While a non-profit partner institution would, naturally, set out to serve the target group of the poor, it is commonly assumed that it would encounter difficulties in ensuring efficiency and taking the necessary steps to cover costs. In contrast, a private bank will supposedly strive, on its own account, to ensure cost-efficiency and profitability. The main problem of institution-building will be to convince the bank to serve the target group of microclients.

These portrayals are certainly oversimplified. To give just one example, albeit an important one: non-profit MFIs as well as for-profit banks usually have appointed managers, who could (mis-)use such

<sup>9</sup> See Baydas, Graham and Valenzuela (1997).

institutions to attain certain personal objectives instead of meeting the needs of the target group or maximizing profits. Therefore, one may not take for granted that non-profits will use funds exclusively for the target group, nor can it be assumed that cost efficiency is *the* natural attribute of a for-profit bank. Nevertheless, the common prejudices certainly contain some truth. Indeed, the main challenge in the design of the governance structure of a non-profit institution—whether an NGO or a State-owned bank—is the establishment of tight budgetary constraints that prevent it from losing money. The main difficulties in establishing such constraints in non-profit institutions have to do with the structure of ownership and control: if equity is donated to an institution or its ownership structure is diluted, as is typically the case with State-owned banks, there is no owner with a personal interest in using the rights of control and accountable for the institution's (financial) successes and failures (table 2). Private companies certainly have an advantage in this regard. Not only do their owners have an incentive to multiply their shareholder value by exercising their rights of control, but such companies also face the threat of insolvency if they lose their capital—a risk that also compels appointed managers to be more cautious. Finally, private companies usually face competition, which limits the margin of inefficiency that each individual company can afford. To compensate for their weaknesses in financial sustainability, non-profits may imitate the management techniques of for-profits mentioned by Hulme and Mosley (1996). However, even if the “transplant” of these for-profit techniques into a non-profit is successful—and there are numerous examples to the contrary<sup>10</sup> it is a time-consuming and expensive proposition, as the lengthy and protracted process of upscaling NGOs illustrates.

The ownership structure of a for-profit bank therefore undoubtedly has advantages in cost coverage, as a guarantor of the institution's sustainability. The main difficulties lie (and here, again, the most common prejudices against for-profits contain some truth) in achieving target-group orientation. The main barrier is not start-up costs, because donor institutions are willing to subsidize entry costs. It is the long-term business prospects of serving microclients that could make a for-profit institution unsuitable as an MFI.

While a non-profit institution will reach sustainability as soon as it covers its operational and financial costs and avoids decapitalization, neither a microfinance department in a for-profit bank nor a for-profit MFI will break even and become sustainable at the same point. For microfinance to be lucrative and for a for-profit institution to continue providing that service even while donor subsidies are phased out and the accompanying donor controls are removed, not only must it be profitable but it must be just as profitable as any business activity competing for a bank owner's limited resources. This benchmark, which determines the sustainability of microfinance in for-profit banks, has been referred to in microfinance literature as “full financial sustainability”. This degree of sustainability includes, among other things, the need to cover the opportunity costs of the owner's equity.

This threshold is unavoidable for a for-profit, but it is irrelevant for the survival of a non-profit institution. A private company that is fully integrated into the market is considered to be driven by the goal of profit maximization and by the forces of competition to put scarce resources to their most efficient use. Non-profit institutions are not bound by these market forces in the same way. They are subject to different rules of survival because by definition they are motivated by factors other than purely financial ones. The simple fact that equity is donated to an NGO frees it from the necessity to cover the opportunity cost of equity. As long as it does not incur losses, it could survive almost forever, even while earning significantly less return on equity (ROE) than a for-profit bank.

Hence, microfinance in a for-profit bank is the touchstone of the microfinance promise: if microfinance can be made a truly profitable business in for-profit banks, there is no need for lifetime subsidization of non-profit institutions. Even if such subsidies are provided only in the form of donated equity, donor control will always be necessary to prevent them from being misused through organizational slack.<sup>11</sup>

For-profit MFIs do have advantages, *if* microfinance can, in fact, be made a win-win solution within a limited period of time. We need to ask if the innovations in the institutional set-up of MFIs, namely downscaling and

<sup>10</sup> The many failed attempts to reform State-owned policy banks should suffice as examples.

<sup>11</sup> This has been a recurring problem in the history of German savings banks. Two hundred years after their founding as non-profit institutions owned by the states and municipalities, they are still organized as non-profit NGOs.



TABLE 2

**The challenges of institution-building:  
non-profits versus for-profits**

	Non-profits	For-profits
<i>Sustainability</i>	“Transplanted” mechanism	“Natural” mechanism
Cost coverage	Threat of insolvency if donation flow is cut off	Risk of insolvency because owners’ funds are limited
Efficiency	Prevention of organizational slack through imitation of for-profit management techniques/ donor control	For-profit management techniques; competition; management under or controlled by owner
Target-group orientation	Donor control to prevent managers from misusing the institution for personal goals	Donor control to prevent owners from using subsidies for more profitable, non-target-group business
<i>Subsidies</i>		
Temporary	To cover losses until institution is able to cover costs and maintain equity	To ensure that target-group business covers costs (including the opportunity cost of the equity)
Open-ended	Equivalent to the return on equity on an alternative investment	
Donor control	For an indefinite period/ until transition to a for-profit company	Until target-group business is as profitable as alternative investments

the founding of greenfield banks, actually imply experimentation with for-profit ownership structures,

and if so, if they hold out the potential of making the microfinance promise a reality.

### III

## Is downscaling for-profit banks worth trying?

Downscaling of this type has been tried, and, although some of the partner commercial banks were State-owned, there are cases of true downscaling projects in which partner banks were privately owned and that therefore constitute typical examples of for-profits.

#### 1. Latin America: downscaling in Paraguay

One very prominent downscaling project was the Programa Micro Global, which started in 1995 in Paraguay with Inter-American Development Bank (IDB) financing.<sup>12</sup> Eight partner institutions, of which only

<sup>12</sup> See Schor (1997).

one was a State-owned bank, took part in the programme. The rest were privately owned financial institutions (*financieras*) that had formerly specialized almost exclusively in consumer loans. At all of these institutions a microloan department was established with donor support in the form of technical assistance. Microloan officers were trained to issue individual loans to microentrepreneurs using the customary microloan technology: a careful assessment of clients' payment capacity, the issue of a short-term instalment loan, and close monitoring of payment discipline, followed by longer-term and/or larger loans if the client proved reliable. Furthermore, the donor would offer a credit line, distributed by a second-tier bank, to fund new businesses. This credit line was not, however, issued as a soft loan to the first-tier lending institution. The only advantage of this credit line was the access it afforded to funds with slightly longer maturities than could be found on the financial market.

By late 1996, five institutions had proven particularly active in the new line of business: they had built up portfolios of between US\$ 0.5 and 6 million and issued loans for an average of US\$ 1,300 and with an average maturity of just over one year. Although the State-owned bank was one of these five institutions, two years after the programme began, it already showed remarkable differences *vis-à-vis* the private *financieras*: the average loan granted was almost double that of the *financieras* (US\$ 2,120 versus approximately US\$ 1,000), the average maturity was significantly longer (22 versus 12.5 months) and the interest rate was, at 3.3% per month, lower than that of the private institution charging the lowest rate (4.8% per month) and less than half that of the *financiera* charging the highest rate (6.8%).<sup>13</sup> These figures seem to suggest that the State-owned bank was less interested in generating profits than were the other banks, although at that time none of the five had reached the break-even point. However, the two largest were reported to be approaching profitability.

At the end of the programme, in the spring of 2001, all four of the active *financieras* were on the verge of profitability. The two biggest had built up microloan portfolios of between US\$ 8 million and US\$ 12 million,<sup>14</sup> which represented a significant portion (25% and 70%) of their total portfolio volume

and generated much (75% and 60%) of their profit.<sup>15</sup> All these institutions remained in the microfinance business, and for one of them microloans are its most important business line—in fact, its advertising touts it as “the leader in microfinance”.<sup>16</sup> The average loan amount remained at US\$ 1,000 over time, which is a clear indicator that these institutions actually serve microclients. Real annual interest rates, on loans in local currency, are as high as 60% per year—rather high, considering that inflation in Paraguay is below 10%. Nevertheless, these rates are not unusual in the country.

This provides clear proof that microloan departments established in for-profit financial institutions in Latin America can attain full financial sustainability. Consequently, the institutions will remain in this line of business after subsidies for entering the market are phased out. However, the experience in Paraguay might not be representative of all of Latin America. Paraguay is not the only country where downscaling has been tried. Indeed, the Programa Micro Global was implemented in several countries, and Paraguay was clearly one of the most successful cases and is probably the most successful example of true downscaling in Latin America.<sup>17</sup>

## 2. Eastern Europe: downscaling in Kazakhstan

In Eastern Europe, a kind of testing ground for institutional innovations in microfinance, the history of projects aimed at establishing microfinance in private commercial banks is generally much shorter; nevertheless, it can be expected that showcase projects with experiences comparable to those of Paraguay are being developed. The Small Business Programme in Kazakhstan, started in 1998 by the European Bank for Reconstruction and Development (EBRD), may be an outstanding example.<sup>18</sup> Seven commercial banks either privately owned or privatized by 2001 participated. By late 2002, the banks had built up a microloan portfolio of US\$ 73 million. The average loan amount disbursed is US\$ 5,100 and the average amount outstanding is US\$ 4,200. These figures are four to five times higher than in Paraguay. However, the average amount of customary loans for all Eastern European microloan

<sup>15</sup> Oral information from the programme consultant.

<sup>16</sup> See [www.vision.com.py](http://www.vision.com.py).

<sup>17</sup> For more information, see Wenner and Campos (1998).

<sup>18</sup> Information gathered during a visit to the programme; source of data: [www.ipcgmbh.com](http://www.ipcgmbh.com).

<sup>13</sup> Ibid.

<sup>14</sup> See Mommertz (2001, p.8).

projects is typically higher than it is in Latin America. As of now, not much can be said about the profitability of these microloan departments, as subsidies for institution-building have not been phased out and figures on contribution to profits are not publicly available. Still, in personal interviews, the managers of the participating banks clearly stated their long-term commitment to microfinance because of its favourable business prospects. Furthermore, not only is the largest commercial bank of Kazakhstan, Kazkommertsbank, one of the partner banks but it has also built up one of the largest single microfinance portfolios (US\$ 16.9 million). These are highly reliable indications that microfinance will survive after the donor agencies have ceased to support them.

Nevertheless, in Kazakhstan there are also clear signs that banks do not consider microloans, and especially those for smaller amounts, the most attractive business for allocating their own resources. Firstly, most of the banks are more interested in the medium-sized and large individual loans granted under the Small Business Programme. Some of the banks would even like to see the upper limit for loans granted under the programme raised. The supporting donors, in contrast, have a special interest in ensuring that the programme reaches the smaller microclients. Secondly, staff members trained as loan officers under the Small Business Programme are frequently promoted within the banks to fulfil duties with greater responsibilities. Microfinance seems to be valued because the programme offers training and the transfer of know-how, which are valuable in and of themselves, even if the microloan business per se is less attractive than are transactions with bigger clients. The drain of human resources will most likely continue until scarce resources used for microfinance can generate the same profitability as those used in other lines of business. This could occur in the near future because Kazakhstan's financial sector is characterized by high competition.

Kazakhstan clearly meets the requirements for becoming a resounding success story for the downscaling approach. However, as with the Latin American case, in Eastern Europe not all downscaling projects have had equally favourable results. After a relatively slow beginning, the programme in the Ukraine seems as promising as the one in Kazakhstan. The programme in Russia, the oldest in Eastern Europe, began in 1994 but was hit hard by the Russian financial crisis, which not only affected the quality of the loan portfolio but also drove several partner banks into insolvency. Only one of the partner banks, which has the legal structure of a corporation whose largest shareholder is the government and therefore cannot be classified as a true for-profit partner, is still operating. Several small projects, such as those in Armenia, Romania and Macedonia, are either too recent to allow a prognosis or are less promising than the Kazakhstan project.

Although the evidence on downscaling provided here comes down to two rather successful cases, some preliminary conclusions on the potential of establishing microfinance departments in for-profit financial institutions can be drawn:

- Successful examples do exist, but they are (still) rare.
- Those examples have the following characteristics:
  - The financial market in both countries is very competitive, and existing for-profit institutions are therefore always looking for new business.
  - The financial market for microclients is not sufficiently covered by established non-profit institutions, which offer the same product but have the competitive advantage of being precisely that: non-profits.

In sum, microfinance with for-profits is possible, but thus far the successful examples do not indicate that the era of commercial microfinance is under way.<sup>19</sup>

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<sup>19</sup> Mommertz (2001) and Berger (2000) arrive at similar conclusions.

## IV

### **Building greenfield banks: a compromise between for-profit and non-profit**

The sample of greenfield banks surveyed here covers some of the most prominent but certainly not all the greenfield banks that might have been founded around the world. All of the MFIs mentioned here belong to the same “microfinance network”, encompassing donor institutions, a microfinance investment company, a consulting firm specializing in development finance and the micro banks themselves. Within this sample, the greenfield bank approach was first applied to Eastern European countries in transition. The first MFI, called Micro Enterprise Bank (MEB), was founded in Bosnia and Herzegovina in 1997, followed soon afterwards by FEFAD Bank, in Albania. Meanwhile the greenfield bank approach has extended to Africa, Latin America and Asia, although with only one or two institutions on these continents. To date, most of the 15 greenfield banks are located in Eastern Europe.

As all these MFIs had a formal banking or financial institution licence from the outset, most of them are already offering, or at least aim to offer, complete banking services. Besides micro- and small-business loans and time and savings deposits, both in local and foreign currencies, these banks offer payment services, and some also issue letters of credit or traveller's cheques. Obviously, these banks do not want their microclients to transfer their transactions to other formal banks once they become small or medium-sized firms. On the contrary: the greenfield banks aim to become established players in the local financial market.

The approach to building these banks was always similar. The banks were legally established as corporations, and the local minimum-equity requirements for founding a bank were met with funds raised from donor agencies.

As shown in table 3, which gives an overview of the ownership structure of the banks under consideration, the donors that appear as shareholders of all of these banks are, in general, the same: the German development bank Kreditanstalt für Wiederaufbau (KfW); International Finance Corporation (IFC), of the World Bank Group; Netherlands

Development Finance Company (FMO); the Dutch foundation DOEN; the European Bank for Reconstruction and Development (EBRD). At the same time, the donor community holds a majority interest in almost all of these banks.

The fact that the donors have a majority holding leads to one important conclusion: although these banks have the legal status of private companies and the governance structure of corporations with appointed managers and a supervisory board, they cannot be considered “truly” private. The legal structure is merely an instrument that donors use to experiment with institutional innovations in development finance.

However, the fact that a majority of the shareholders of these banks are non-profit institutions does not imply that private investors are not at all involved. One of the shareholders is a financial institution that operates solely for profit—Commerzbank, a big German commercial bank. Interestingly enough, this bank has invested exclusively in Eastern European banks, which might indicate that these banks' business prospects make them more attractive for private investors than would investing in a microbank in Ghana or Haiti.

One additional investor appears in all of these banks: IMI AG, a German investment company that specializes in holding equity participation in microbanks.<sup>20</sup> Most of its investments are in shares of these greenfield banks, although it has also invested in MFIs created via upscaling, such as Caja Los Andes, in Bolivia, or Calpiá, in El Salvador. The legal status of IMI AG is that of a private company, but it is justifiably characterized as a mixture of a for-profit and a non-profit company. An examination of the shareholder structure of IMI AG reveals a near duplication of that of the microbanks themselves, since its majority interest is held by the same non-profit institutions. The investment company Deutsche Investitions-und

<sup>20</sup> See IMI, <http://www.imi-ag.de>.

TABLE 3

**Ownership structure of greenfield banks**  
(Percentages)

	Development institutions (non-profit)					Mixed	For-profit	Others
	KfW	IFC	FMO	DOEN	EBRD	IMI	Commerzbank	(for-profit or non-profit)
<i>Eastern Europe</i>								
Micro Enterprise Bank, Bosnia and Herzegovina	8	23	12	-	23	22	12	
Microfinance Bank of Georgia	20	16	10	-	10	29	15	
Micro Enterprise Bank, Kosovo	16	16	16	-	16	16	16	
FEFAD Bank, Albania	25	20	-	-	20	15	20	
Micro Enterprise Credit, Moldova	-	15	-	15	15	40	-	15
Micro Finance Bank, Serbia	16	16	16	-	16	16	16	
Microfinance Bank, Ukraine	20	20	-	10	20	10	-	20
ProCredit Bank, Bulgaria	20	20	-	-	20	20	20	
MIRO Bank, Romania	20	20	10	-	20	10	20	
<i>Latin America</i>								
Micro Credit National, Haiti	-	20	15	-	-	20	-	45
Sociedad Financiera Ecuatorial, Ecuador	-	-	-	33	-	56	-	11
<i>Rest of world</i>								
NovoBanco, Mozambique	-	13	13	13	-	25	-	35
MEB, Philippines	-	10	10	20	-	20	-	40
Sikaman SLC, Ghana	-	25	20	20	-	32	-	3

Source: Internationale Micro Investitionen Aktiengesellschaft (IMI), www.imi-ag.de.

Entwicklungsgesellschaft (DEG), which belongs to the KfW, holds 14% of the shares; IFC, 16%; DOEN, 16%; FMO, 14.5%; BIO, the Belgian Investment Company for Developing Countries (BIO), another 7%; and ProCredito, a Bolivian foundation involved in microfinance, 6%.

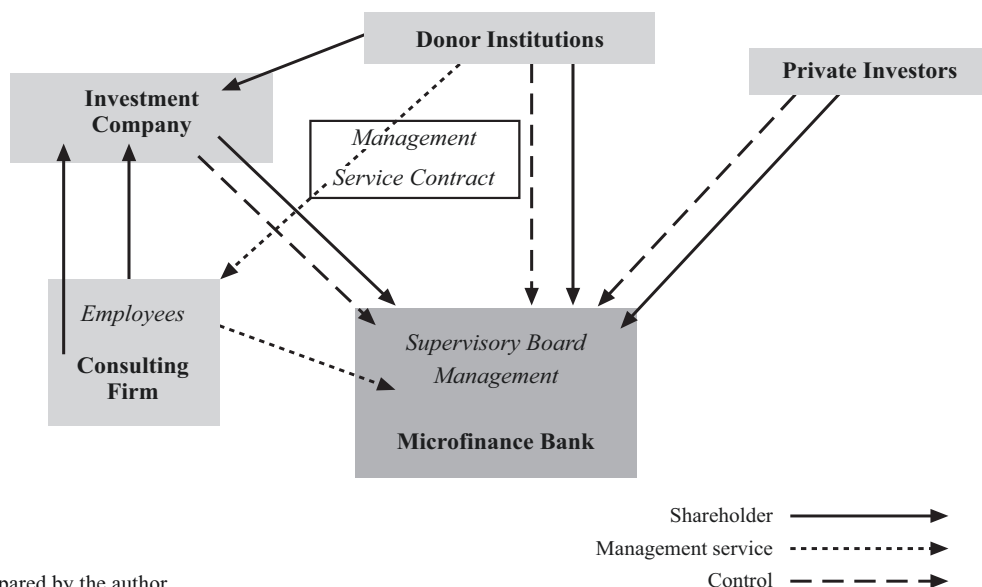
However, there are two purely private investors: IPC GmbH (19.5%) and IPC Invest (7%). IPC GmbH specializes in providing consulting services for microfinance; IPC Invest is a vehicle for IPC employees to invest their own savings. This is undoubtedly a very special set of private investors: the investments are made exclusively by private individuals who at the same time receive income from the microfinance consulting business and who, furthermore, are involved in the institution-building process of the microbanks, since their employer, IPC GmbH, is contracted by the donor agencies to provide management services for the microbanks during the initial institution-building phase. These private investors, who through IMI AG hold an indirect equity participation in the greenfield banks, complete the greenfield banks' institutional structure.

The greenfield microbanks as well as the investment company IMI AG have a truly innovative institutional structure:

- Behind the facade of for-profit companies is a mixture of non-profit and for-profit investors—a mixture that with little effort can be fine-tuned in keeping with the business prospects of any local MFI and, in general, of any microfinance. When microfinancing not only covers expenses but also begins to recover the opportunity cost on equity, then the microbank is performing well enough to be truly privatized. At this point, the structure of the shareholders could be changed by donors selling their shares to private investors. Similarly, when investments in MFIS have become truly competitive, donors could exit IMI AG, which could even go public.
- The similarity in the ownership structure of all these greenfield banks ensures information sharing, coordination and thereby the realisation of economies of scale related to control over investments and the accumulation of know-how.
- Furthermore, the fact that the consulting company IPC and its employees hold an indirect interest in the microbanks while simultaneously working, under a management services contract, for them, is a variation of a new incentive model. This model, called “consulting for equity”, has recently emerged in Western industrialized countries. The basic idea

FIGURE 1

## Governance structure of the greenfield bank network



Source: Prepared by the author.

behind it is to give consultants an incentive to act in the interest of the owners of a business that uses their consulting services. If the consulting service is successful, the consultants take part in the success, since the value of their shares rises. Likewise, if the consultants fail to solve problems, their equity holding earns no income.

How well has this institutional network, which was built in the last five years around the founding of greenfield banks, performed?

Concerning outreach<sup>21</sup> and target-group orientation, the success of the greenfield banks is impressive, as table 4 shows.

In fact, the average amount of the loans in Eastern Europe is significantly higher than that of those extended by, for example, the Latin American institutions. This reflects the different environment in the transition countries as well as, perhaps, a different definition of the target groups of the Eastern European banks, which do not aim to serve the poorest of the poor. All the institutions under consideration show very low rates of arrears (figure 2), which is consistent with a moderate level of write-offs. However, the question

of whether “high repayment rates translated into profit” remains (Morduch, 1999, p. 1571).

Table 5, which examines the return on equity realized by all greenfield banks, may provide a preliminary, although not altogether unbiased, impression.

In their official accounting reports, audited by recognized external auditing firms, the vast majority of MFIs more than two years old report a profit. Naturally, and unfortunately for academics interested in having statistics on the success of this institution-building approach, the official accounting data do not reflect the degree to which an institution still needs subsidies. These institutions may continue to receive subsidies, either in the form of technical assistance paid for by the donors (such payments for managerial services would not even appear on an institution’s books) or in the form of soft loans. To get a more realistic picture one would require “shadow” accounting data corrected to include subsidies—data that are not publicly available. However, the following information may give a first insight.

— After two to three years, banks should be able to cover their administrative costs, including management salaries. All banks that had begun operations two or three years before, and even some banks that had been created more recently, met this target.

<sup>21</sup> See Gonzalez-Vega (1998).



TABLE 4

**Greenfield banks: Outreach and target-group orientation**

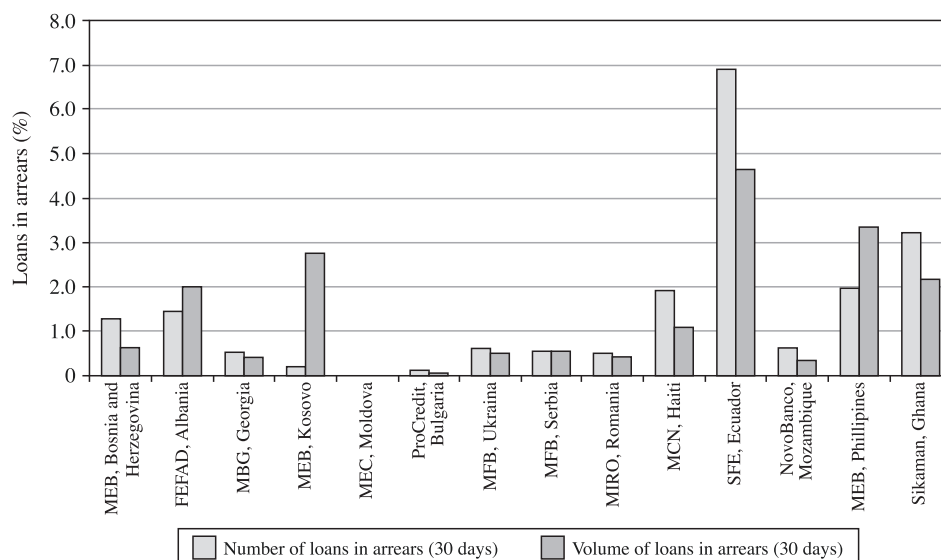
December 2002	Total amount of loans outstanding (thousand of euros)	Average amount of outstanding loans (euros)	Number of loans outstanding
MEB, Bosnia and Herzegovina	33 533	4 513	7 077
FEFAD, Albania	29 826	5 227	5 434
MBG, Georgia	33 098	1 110	29 815
MEB, Kosovo	23 731	5 018	4 504
MEC, Moldova	3 992	3 593	1 111
ProCredit, Bulgaria	29 317	5 467	5 107
MFB, Ukraine	26 055	4 098	6 056
MFB, Serbia	40 133	3 844	9 942
MIRO, Romania	10 104	3 900	2 591
MCN, Haiti	2 981	881	3 383
SFE, Ecuador	6 746	1 293	5 217
NovoBanco, Mozambique	1 998	277	7 212
MEB, Philippines	360	201	1 794
Sikaman, Ghana	282	552	487
<i>Benchmark institutions<sup>a/</sup></i>			
Caja Los Andes, Bolivia	61 272	1 200	51 073
Calpiá, El Salvador	42 717	954	44 771
CONFIA, Nicaragua	15 023	736	20 418

Source: IMIAG.

<sup>a/</sup> NGOs that had already been upscaled to microbanks.

FIGURE 2

**Greenfield banks: Arrears, December 2002**  
(Percentages)



Source: IMIAG.

TABLE 5

## Profitability of greenfield banks throughout the world

December 2002	Year founded	Return on equity	Equity (millions of euros)	Profits (millions of euros)
<i>Eastern Europe</i>				
Micro Enterprise Bank, Bosnia and Herzegovina	1997	8%	7	0.56
Microfinance Bank of Georgia	1999	-1%	11	-0.11
Micro Enterprise Bank, Kosovo	1999	53%	7	3.71
FEFAD Bank, Albania	1999	15%	7	1.05
Micro Enterprise Credit, Moldova	2000	-7%	5	-0.35
Micro Finance Bank, Serbia	2001	-26%	14	-3.64
Microfinance Bank, Ukraine	2001	-1.9%	10	-0.19
ProCredit Bank, Bulgaria	2001	1%	7	0.07
MIRO Bank, Romania	2002	-9%	10	-0.9
<i>Latin America</i>				
Micro Crédit National, Haiti	2000	27%	2	0.54
Sociedad Financiera Ecuatorial, Ecuador	2001	10%	3	0.3
<i>Rest of world</i>				
NovoBanco, Mozambique	2000	-6%	2	-0.12
Micro Enterprise Bank, Philippines	2001	-11%	2	-0.22
Sikaman SLC, Ghana	2002	-5%	2	-0.1
<i>Benchmark institutions<sup>a/</sup></i>				
Financiera Calpiá, El Salvador	1988	11%	11	1.21
Financiera CONFIA, Nicaragua	1990	18%	3	0.54
Caja Los Andes, Bolivia	1992	13%	10	1.3

Source: Internationale Micro Investitionen Aktiengesellschaft (IMI), www.imi-ag.de.

<sup>a/</sup> NGOs that had already been upscaled to microbanks.

— To create a greenfield bank from the ground up, including a home office and one or two branches, and for it to attain sustainability, in the sense of covering all expenses, an average of 1.5 to 2 million euros in subsidies is required. Naturally, this amount will depend on the size of the bank.

— Three of the microbanks (FEFAD Bank, of Albania; MEB, of Bosnia and Herzegovina; and MEB Kosovo) no longer receive direct subsidies. Only MEB's results are affected by soft loans.

Two or three of these banks, therefore, appear to be profitable, despite having existed for only a short period. However, the ROE is probably insufficient to cover the opportunity cost of equity that a private

investor would calculate, taking the country risk into account. Furthermore, ROE alone is not sufficient for a comparison of the profitability of investments. For a profitability assessment based on net present values, the total cost of investments and the amount that can be invested with a certain average rate of return need to be taken into account. Nevertheless, the data presented suggest that progress has been made in building MFIs, aided by intelligent and innovative ownership and governance structures.

It would be unfair, however, to conclude that these institutional innovations have brought the microfinance promise much closer to realization. The reason for this is given in the following section.

# V

## Conclusion and outlook

Institutional innovation was characteristic of the “microfinance industry” at the end of the 1990s and at the beginning of the new millennium. The term “microfinance industry” was deliberately chosen because these innovations were, undoubtedly, carried out by the faction of the microfinance movement that believes in microfinance more as an instrument for developing financial markets than as a development tool for directly fighting poverty. For this reason, the duration and degree of subsidization required to achieve financial sustainability are used as the main indicator of success, rather than a cost-benefit measure of the impact on poverty per dollar spent.

If such a cost-benefit measure were applied, institutions that reach much poorer clients and raise their income might possibly receive a more favourable evaluation than the greenfield banks discussed above, even if the former continued to depend on subsidies (Morduch, 1999, pp. 1592-1595). There is little point in carrying out a more in-depth analysis here because—to cite Morduch’s seminal paper again—“unfortunately, for now policy makers have little to go on beyond a handful of case studies and...theoretical examples and counter examples” (ibid., 1595). In all fairness, it has to be stressed that none of the institutions examined in this paper claim that their mission is to serve the poorest of the poor, even if some members of this segment of the population are among their customers. The concept of for-profit microfinance, as well as the founding of greenfield banks, seeks to develop the financial market by reaching customers who have not yet been served, but in a top-down rather than a bottom-up manner. In the light of this development goal, the time and money invested to achieve financial

sustainability seems to be a pragmatic, but acceptable, yardstick.

The use of this yardstick—albeit, due to a lack of information, as a very rough estimate—reveals some noteworthy examples of downscaling as well as of greenfield banks with very satisfactory performance. It cannot be ruled out, however, that most of the success of greenfield banks is attributable to the special economic situation of the transition countries. And, regarding downscaling projects, the very fact that few of them have been successful and that donors support the founding of greenfield banks with mixed ownership, even in some countries where the downscaling approach is simultaneously supported, seems to indicate that the day when microfinance will provide a win-win solution is still far off. And, last but not least, it should be mentioned that the new institutional model of greenfield banks might produce new institutional issues. To name just a few:

- Does the new “consulting for equity” incentive model, meant to bring the interests of consultants in line with those of donors, have the potential to lead to new incentive problems, as well? (Sties, 2003).
- What is the optimal exit point for the donor-owners of greenfield banks? And how is it guaranteed that such an exit will actually be executed?
- Could the founding of greenfield banks with mixed ownership constitute the future barrier to the entry of private banks into the microfinance business, with the adverse effect that institutions meant to develop the financial market would contribute to market distortions?

Much more research is required to give satisfactory answers.

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## Recent ECLAC publications

### Flagship publications

**Economic Survey of Latin America and the Caribbean, 2002-2003** (LC/G.2208-P). United Nations publication, Sales No. E.03.II.G.2, ECLAC, Santiago, Chile, December 2003.

The Latin American and Caribbean economy will grow by 1.5% in 2003, thereby making a modest recovery from its 0.6% contraction in 2002. With per capita GDP for the year remaining flat, at 2% below its 1997 level, this will be the sixth year in a row that has been lost to the region in terms of economic growth.

This economic picture denotes a levelling-off of growth in the region in 2003, in contrast to the outlook a few months ago, when ECLAC had projected growth of 2.1% for 2003.<sup>1</sup> That projection was based on the strengthening trend observed in 2002 as the economy made steady progress after reaching its lowest point in the first quarter. This growth profile, which pointed to a moderate upturn in the economy, had been expected to continue throughout 2003.

In December 2002, it was assumed that there would be a "short war" in Iraq, followed by a recovery of growth in the developed world (particularly the United States), along with a substantial decrease in international oil prices. The more robust growth of the world economy was also expected to halt the deterioration in the non-oil-exporting countries' terms of trade. Marginally more favourable conditions on international financial markets were projected, particularly in comparison to those prevailing in the third quarter of 2002, when country-risk indicators had peaked. This was also the most likely scenario according to most analysts.

The war did indeed prove to be short, but the other elements in this scenario have not turned out exactly as expected. The United States economy has not rebounded as analysts thought it would,<sup>2</sup> European economies have experienced an unforeseen loss of momentum, and Japan has yet to emerge from the stagnation in which it has been languishing since 1998. Moreover, these conditions are exacerbated by the fact that few degrees of freedom remain available to the United States and Japan for further expansionary policies, as there is very little margin left for making monetary and fiscal policy stances more expansionary than they already are. Europe has somewhat more manoeuvring room, although it is constrained by the rules of the European Union's Stability and Growth Pact. Nor have international oil prices fallen as much as expected. Forecasts regarding the region's terms of trade and a moderate improvement in external financial conditions are the only projections to be borne

out by the facts. In sum, the world economy has not served as an engine to drive the region's growth during the year.

Despite the situation in the world economy, the current value of the region's total merchandise exports in 2003 will increase by an estimated 4.4% (3.5% if petroleum exports are excluded). The Latin American economies with the more competitive exchange rates and those in which investment has been concentrated in non-renewable natural resources are the ones exhibiting higher rates of export growth in relative terms.<sup>3</sup> The value of imports will grow by 0.8% in 2003 for a marginal recovery from the 6.7% drop recorded in 2002. This indicates that the region's trade balance will continue to strengthen as it registers a surplus (estimated at US\$ 37 billion) for the second year running.

The balance-of-payments current account will reflect the improvement in the trade balance, since the other components of this account will not register sharp changes. The non-financial services balance will remain virtually unchanged.<sup>4</sup> A slight deterioration in the income (or factor services) account will bring it back to around its 2001 level (-US\$ 54.8 billion). The region's current transfers will remain on an upward trend, rising to US\$ 29 billion in 2003 (US\$ 27 billion in 2002).

From the standpoint of the region, the international financial situation will take a turn for the better in 2003 in terms of both flows and international market conditions, although the fact remains that 2002 is a poor basis for comparison. On the balance of payments, total capital flows are expected to make a comeback, with net inflows amounting to US\$ 40 billion. Nonetheless, net resource transfers from abroad will be negative for the fifth year in a row (-US\$ 15 billion, or 1% of the region's GDP) owing to the hefty deficit that, as noted earlier, will be recorded on the income account.

The transfer of resources associated with foreign direct investment (FDI) and the transfer associated with purely financial flows are following dissimilar trends. Net FDI transfers to the region (net inflows of FDI minus profit remittances) will still be positive in 2003 (0.6% of GDP), but they will also remain on the downward trend they have followed since peaking at 3.7% of GDP in 1999, thus falling to levels similar to those seen in the first half of the 1990s.

Net transfers of financial resources, on the other hand, will still be negative (-1.6% of GDP), but significantly less so than in 2002 (-3.9% of GDP). The trend in 2003 is chiefly a result of the turnaround in MERCOSUR and particularly Argentina.

In sum, the international economic environment in 2003 is mixed. Because the expected reactivation of the world economy has been slow in coming, no external engine of growth has been available. It is clear, in particular, that most of the economies that are more closely integrated with the United States (Mexico, Central America and the Caribbean) have continued to perform poorly in 2003. In South America, where the major economies faced crisis situations in 2002, the response to more competitive exchange rates has been apparent in a number of them, and the financial situation, although still troubled, is improving.

<sup>1</sup> See ECLAC, *Preliminary Overview of the Economies of Latin America and the Caribbean* (LC/G.2196-P), Santiago, Chile, 2002. United Nations publication, Sales No. E.02.II.G.126.

<sup>2</sup> Some leading indicators (especially stock prices) point to an economic recovery in the United States, but its reactivation has clearly been slower and later in coming than had been projected.

<sup>3</sup> Costa Rica is an exception. This country's economic performance has been influenced by Intel, whose international production strategy has helped boost its exports in 2002-2003. Costa Rica will see its exports jump by 15% in 2003 and will consequently join Brazil in posting the region's top export growth rates.

<sup>4</sup> A US\$ 14.6-billion deficit is projected for 2003, versus one of US\$ 14 billion in 2002.

Brazil is a particularly noteworthy case, since its combination of a growing trade surplus and declining sovereign risk (in conjunction with fiscal discipline) is providing it with more degrees of freedom that may allow it to achieve faster growth in the medium term. Meanwhile, the non-oil-exporting economies are obtaining some relief as the deterioration in their terms of trade has come to a halt for the first time since 1997. Finally, there are also some economies for which the international environment is of secondary importance in explaining their performance in 2003, such as Venezuela and the Dominican Republic.

The most remarkable events in the realm of economic policy in 2003 have been the deepening of structural fiscal reforms throughout the region and the recovery of degrees of freedom in the management of monetary policy in the major South American economies. This latter development stands in contrast to the situation the year before, when, as discussed by ECLAC in the 2002 *Preliminary Overview*, a great deal of autonomy was lost in terms of the capacity to use these policy tools in most of the economies, especially those of the MERCOSUR countries.

In fact, 2002 was the fifth year of what ECLAC has called the "lost half-decade", and in this issue of the *Economic Survey*, ECLAC points out that 2003 will be the sixth year in a row that has been lost to the region in terms of economic growth. In the 2002 *Preliminary Overview* ECLAC noted that the adverse international environment had been transmitted to the region through various channels. In a number of economies—especially those of MERCOSUR—the main factor was the deterioration in international financial conditions. For Mexico, the five economies of the Central American Common Market (CACM), Haiti, Panama, the Dominican Republic and part of the English-speaking Caribbean, the major factor has been the United States economy's loss of forward momentum since 2001. For other non-oil-exporting countries (especially Peru and Chile), the downtrend in the terms of trade that began in 1998 has been the most influential external factor in the slowing pace of growth. In several economies, the implementation of restrictive macroeconomic policies in 2002 has been an additional factor. In other cases, the economic slowdown brought to light problems with regard to the sustainability of the public debt, which also made the use of contractionary fiscal policies necessary. In other words, the adverse external environment was compounded by a policy mix that magnified the contractionary forces already at work. Of all the economies in the region, only those of Barbados and Chile (both of which had built up their degrees of freedom during the preceding boom years) implemented expansionary fiscal and monetary policies simultaneously.

#### Other publications

**Cuadernos estadísticos de la CEPAL**, No. 29 (LC/G.2191-P). United Nations publication, Sales No. S.03.II.G.22, ECLAC, Santiago, Chile, April 2003, 123 pages.

In the Latin American and Caribbean countries, the availability of data for analysing foreign trade differs greatly between goods and services.

Data on external merchandise trade are fairly complete, reliable and up to date, as this is one of the areas best covered by national statistical systems. The information available precisely identifies the origin, destination and prices of the goods traded, allowing them to be classified under standard headings that ensure international comparability.

This is not the case of data on internationally traded services, however. Some countries have relatively detailed information on certain specific transactions (such as shipments and tourist arrivals), but most face serious difficulties in measuring trade in services and must therefore resort to indirect methods and estimates.

Widespread dissatisfaction with the state of statistics on trade in services has been evident among national authorities and academics, on the one hand, and international and regional agencies, on the other, and has led to the adoption of measures to overcome these limitations. However, the expected improvements are not yet apparent in the data submitted by the vast majority of the region's countries.

In its capacity as a member of the Tripartite Committee supporting the negotiations on the Free Trade Area of the Americas (FTAA), ECLAC has updated and improved the study described here. The intention is to contribute to a better understanding of the subject and to facilitate the countries' integration into the FTAA process and into the work of the Trade Negotiations Committee (TNC), the Negotiating Groups and the Summit Implementation Review Group (SIRG).<sup>5</sup>

The introduction sets out the new definitions and coverage of the headings that make up international trade in services. There follows a comparison between the way those services are classified in the Balance of Payments Manual and in the Central Product Classification (CPC). The body of the text contains historical series providing uniform coverage of trade in services between 1980 and 2002 for 35 countries of the region, as well as tables summarizing each of the components at the regional level.

The data are taken mainly from balance-of-payments statements prepared and published by national institutions and by the International Monetary Fund (IMF). ECLAC used information provided by national sources in each country to update or adapt (as appropriate) the data from some countries to bring them into line with the scheme envisaged, which corresponds to the standardized components presented in the fifth edition of the *Balance of Payments Manual* published by IMF in 1993.

**Road maps towards an information society in Latin America and the Caribbean**, *Libros de la CEPAL* series, No. 72 (LC/G.2195-P). United Nations publication, Sales No. E.03.II.G.09, ECLAC, Santiago, Chile, July 2003, 119 pages.

The concept of an "information society" refers to a paradigm which is profoundly changing the world in which we live at the beginning of this new millennium. This transformation is being driven primarily by new ways of creating and disseminating communications. Coordination mechanisms are being digitized in many different sectors of society, and this process is gradually giving rise to new ways of organizing society and production. While this form of "digital conduct" is becoming an increasingly global phenomenon, it has its origins in what are, for the most part, mature industrial societies. Indeed, the adoption of this technology-based paradigm is strongly correlated with a society's degree of development. However, technology is not only the child of development (as it

<sup>5</sup> ECLAC presented an initial version of this document at the first meeting of the Working Group on Services of the Free Trade Area of the Americas, held at the Commission's headquarters in Santiago, Chile, in June 1996.

derives from the development process), but is also, to a large extent, its parent (since it is also a tool for development).

Viewed from the perspective of Latin America and the Caribbean, the question of how to employ this emerging paradigm to achieve broader development goals and to integrate the region more fully into the global information society is an issue of paramount importance. In order to tackle the challenging task of integrating the paradigm of the information society into the development agenda, ECLAC is seeking to address three key questions:

- What kind of “information society” is desired? Based on an analytical framework developed by ECLAC for the consideration of the complex issues involved in the construction and operation of an information society, it is of vital importance to determine the purpose and aims of all lines of action oriented towards the transition to an information society. The first chapter of this study lays the groundwork for such an analysis.
- What are the basic characteristics and specific traits of the transition towards an information society in Latin America and the Caribbean? In order to understand what paths the region can choose to follow in making this transition, the second chapter reviews some of the specifically regional features of the current process.
- What policies can be used to support the transition towards an information society? The third and final chapter proposes an agenda for Latin America and the Caribbean in the transition to an information society.

To support such national and regional initiatives, ECLAC initiated a research project that culminated in the Florianópolis Declaration, in which, for the first time, the Latin American and Caribbean countries expressed their shared aspiration to become full-fledged members of the information society (Florianópolis, June 2000). The Regional Preparatory Ministerial Conference of Latin America and the Caribbean for the World Summit on the Information Society took place in Bávaro, Punta Cana, Dominican Republic, from 29 to 31 January 2003. The meeting, organized by the Government of the Dominican Republic and ECLAC, formed part of the worldwide preparation process for the World Summit on the Information Society, which the United Nations General Assembly agreed to hold in two stages: the first in January 2003 in Geneva, Switzerland, and the second in 2005 in Tunisia.

The publication described here was prepared by ECLAC as part of this preparatory process, and served as a basis for discussion at the Regional Preparatory Ministerial Conference. An annex to the publication reproduces the text of the Bávaro Declaration, which serves as the region’s contribution to the World Summit. In this declaration, the countries of the region, recognizing that the information society is an economic and social system where knowledge and information constitute fundamental sources of well-being and progress, adopted a series of guiding principles for the transition to an information society and identified priority issues to which special importance should be assigned in the coming years.