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## Macroeconomic reforms in the Southern cone: lessons for developing and newly emerging market economies

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# Kieler Arbeitspapiere

# Kiel Working Papers

**Kiel Working Paper No. 614**

Macroeconomic Reforms in the Southern Cone –  
Lessons for Developing and Newly Emerging Market Economies



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Macroeconomic Reforms in the Southern Cone –  
Lessons for Developing and Newly Emerging Market Economies

by  
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## **Macroeconomic Reforms in the Southern Cone – Lessons for Developing and Newly Emerging Market Economies**

### **I. Introduction**

The 80s have been a lost decade for many developing countries. Macroeconomic mismanagement significantly contributed to this development. To a large extent, real exchange rate overvaluation and the lack of fiscal and monetary discipline can be blamed for low growth, high unemployment, and persistent debt problems (see, e.g., Sachs [1989] and Williamson [1990]). In the same vein, newly emerging market economies in the formerly socialist countries – after several lost decades – show the same indicators for monetary instability and macroeconomic disequilibrium [Nunnenkamp, 1992]: unsustainable fiscal deficits, excessive money creation, high and volatile inflation rates, and overvalued exchange rates.

Therefore, macroeconomic policy faces the same challenges in developing and newly emerging market economies. Inflation and real exchange rate disequilibrium has to be reduced by an appropriate monetary and exchange rate policy. Recently, a concept which has been often tried in developing countries was proposed for newly emerging market economies as well: exchange rate based stabilization [Bofinger, 1991; Schmieding, 1992; Hofmann, Sell, 1993]. The basic argument is that a nominal anchor in the form of a fixed exchange rate imports the anti-inflationary reputation of currencies by tying the hands of the own monetary authorities. If discretionary policy is ruled out and monetary policy is determined by the foreign central Bank, the credibility of the reform would improve, private agents would adjust at once, and inflation would decrease to the level of the stable currency.

Looking at the bleak experience with exchange rate based stabilization in developing countries [Schweickert et al., 1992], the persistent attractiveness of the concept is rather surprising. For developing and newly emerging market economies considering the concept, the relevant question is whether the concept or an inconsistent implementation is to be blamed for the failures of the concept in reality. This paper argues that it is rather the concept than the implementation. A consistent implementation is a necessary precondition to sustain the fixed exchange rate and to improve performance effects but – even in this case – the

concept contains a high risk because real exchange rate overvaluation is provoked and real exchange rate devaluation becomes a demanding task.

The paper derives at this conclusion on the basis of theoretical considerations and the evidence from the Southern Cone countries Argentina and Chile. Section II shows a small model sufficient to demonstrate the proper functioning of exchange rate based stabilization, the need to sustain a real devaluation, and the complementary policy measures necessary for a consistent implementation: fiscal reform and the liberalization of goods and capital markets.

The experience of Argentina and Chile (Section III) provides an appropriate test for the theoretical conclusions. The importance of complementary policy measures and the weakness of the concept in the case of negative shocks is stressed by the comparison of Argentina and Chile in the 70s and 80s (Section III.1.). Both countries started with comparable macroeconomic disequilibria at the beginning of the 70s, implemented an exchange rate based stabilization program at the turn of the decades, and had to devalue their real exchange rate in the 80s after the debt crisis broke out. While complementary policy measures and economic performance were strikingly different, even the good performer, Chile, could not sustain the fixed exchange rate.

Section III.2. provides a more detailed analysis of Argentina's present attempt to stabilize the economy by fixing the exchange rate. The performance during the Plan de Convertibilidad is highly telling for countries in a situation of acute crisis. Starting with hyperinflation, stagnation, fiscal imbalances, and a quasi-closed economy, Argentina implemented a radical shock program: the exchange rate was fixed against the US \$, the monetary base had to be covered by foreign exchange, the financing of fiscal deficits by the Central Bank was prohibited, the Peso became fully convertible for current as well as for capital account transaction, and the US \$ could be used as a legal tender. Argentina has sustained the fixed exchange rate for nearly three years now.

Section IV summarizes the results from theoretical considerations, from the comparison of Argentina and Chile, and from the analysis for Argentina's performance during the Plan de Convertibilidad. It also draws policy conclusion for the other developing economies and newly emerging market economies.

## II. The Theory

### II.1. A Model with Traded and Non-Traded Goods

The general implications of exchange rate based stabilization and real exchange rate adjustment can be shown by means of a simple graphical presentation [Schweickert, 1993a; 1994b].<sup>1</sup> In Figure 1, the vertical axis measures the real exchange rate ( $s$ ) defined as the price of traded relative to the price of non-traded goods ( $p_t/p_n$ ). The horizontal axis measures real absorption ( $a$ ), i.e. total domestic demand for domestically produced and imported goods. It is assumed that the planned level and the structure of domestic supply is constant in the short run.

The curve T shows all combinations of  $s$  and  $a$  with external balance, i.e. with balanced trade if no capital flows are observed.<sup>2</sup> This curve has a positive slope because, starting at any point on T, an increase in absorption would increase demand for traded goods. Therefore traded goods have to become more expensive, i.e.  $s$  has to increase, in order to reduce demand for traded goods to the previous level. With a constant real exchange rate an increase in absorption would lead to a trade deficit (points to the right of T) and a decrease in absorption would lead to a trade surplus (points to the left of T).

The curve Y shows all combinations of  $s$  and  $a$  with internal balance, i.e. with demand for non-traded goods equal to the supply of these goods. The curve Y has a negative slope because, starting at any point on Y, an increase in absorption would increase the demand for non-traded goods and these goods have to become relatively more expensive in order to maintain internal equilibrium. Points to the right of Y mark situations of excess demand, points to the left of Y indicate excess supply.

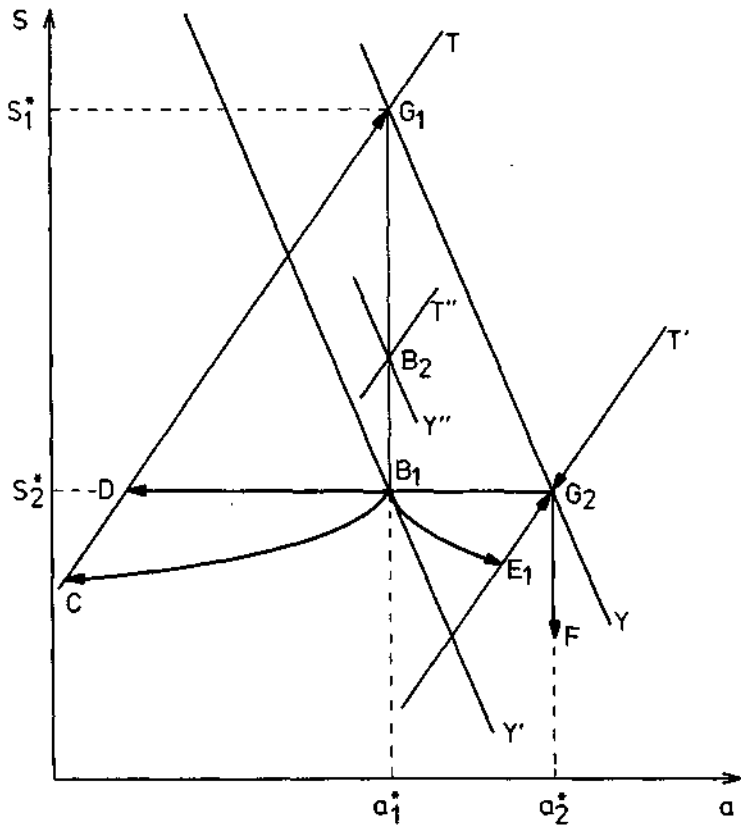
The adjustment in the case of disequilibrium differs between the two markets. If the domestic currency is convertible, the prices of traded goods are given by the

<sup>1</sup> For the underlying model, see Dornbusch [1980, pp. 100-103]. The graphical presentation is adopted from Corden [1991].

<sup>2</sup> The curves are assumed to be straight lines in order to simplify the exposition. The slope of the indifference curve and the transformation curve is neglected. Under the usual assumptions this would imply convex curves T and Y. The qualitative results, however, would be unchanged.

Figure 1

Exchange Rate Based Stabilization and Real Devaluation in a Model with Traded and Non-Traded Goods



world market prices and the nominal exchange rate. With a fixed exchange rate and exogenous world market prices, the price for traded goods is fixed. Changes in domestic demand for tradable goods lead to changes in the trade balance rather than to price adjustment. Total demand for these goods always equals supply because the difference between domestic supply and domestic demand is always matched by external demand.<sup>3</sup>

By contrast, the prices of non-traded goods are flexible. In the case of a negative demand shock, they have to decline in order to maintain equilibrium. Otherwise, demand falls short of supply (a shift of  $Y$  to the left towards  $Y'$ ). This implies losses in terms of employment and income. Disequilibrium on the market for non-traded goods reflects the overall internal disequilibrium of the economy because the supply of traded goods is always demanded.

Due to the different signs of the slopes of curves  $T$  and  $Y$ , only one combination of  $s$  and  $a$  is consistent with internal and external equilibrium. This is shown by point  $G_1$  in Figure 1. At point  $G_1$ , overall supply with full employment,  $a_1^*$ , is realized with balanced trade. Moving from  $G_1$  along  $Y$  to the right implies an increasing trade deficit.<sup>4</sup> Moving along  $T$  to the left implies a decreasing overall supply.

## II. 2. Exchange Rate Based Stabilization

To see how a fixed exchange rate *can* stabilize an economy, assume that the economy is in macroeconomic equilibrium and net capital flows are zero ( $G_1$ , Figure 1). The difference between domestic and foreign inflation is compensated for by nominal devaluation so that the real exchange rate is constant, i.e. the real exchange rate is in equilibrium but inflation is significantly higher than abroad. If the exchange rate is fixed in such a situation, inflation decreases immediately because the price increases for traded goods are curbed by world market

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<sup>3</sup> A small country faces a perfectly elastic supply of imported goods and a perfectly elastic demand for exported goods on the world market. This implies that the supply of traded goods is always demanded at world market prices.

<sup>4</sup> The trade balance is given by the difference between the actual absorption along  $Y$  and  $a^*$ . This difference is smaller than the difference between the curves  $T$  and  $Y$  because a reduced absorption in the case of a trade deficit would reduce demand for both non-traded and traded goods. Thus the reduction in absorption needed to close a trade gap is always larger than the trade gap if demand for non-traded goods is positive.



conditions. But ongoing inflation for non-traded goods will lead to an immediate real appreciation ( $G_1 \rightarrow B_1$ ).

Real appreciation creates an excess demand for traded goods and an excess supply of non-traded goods. This is because traded goods become relatively cheaper and demand shifts from non-traded to traded goods. Excess demand for traded goods implies a trade deficit, an outflow of foreign reserves, and – with a passive monetary policy – a monetary contraction ( $B_1 \rightarrow C$ ).<sup>5</sup> As a consequence absorption decreases, the demand for traded goods declines and the trade imbalance is reduced. But the decrease in absorption further increases the excess supply of non-traded goods. This exerts a pressure to reduce the prices of non-traded goods. Domestic inflation must be even lower than abroad in order to remove the real overvaluation and the excess supply of non-traded goods caused by the initial real appreciation ( $C \rightarrow G_1$ ).<sup>6</sup>

A necessary precondition for private agents to adjust prices is that they expect the monetary contraction to occur. If this is not the case, ongoing inflation, growing real overvaluation, and increasing internal and external imbalances will end the stabilization program soon. Therefore, the credibility of the monetary contraction becomes a basic precondition for the flexibility of prices and for the success of the exchange rate based stabilization.<sup>7</sup> Problems with its credibility result from three macroeconomic constraints: the government budget, foreign exchange reserves, and employment [Schweickert, 1993b].

The need to finance the government budget may constrain the possibility of a monetary contraction in developing countries because the collection of the inflation tax and borrowing on thin domestic capital markets play a significant role in financing government expenditure. Therefore, a monetary contraction

<sup>5</sup> In the following, monetary contraction means a decreasing real money supply. Correspondingly, decreasing domestic prices mean a lower difference between inflation at home and abroad.

<sup>6</sup> In the absence of real shocks, the equilibrium of the real exchange rate remains constant and the actual real exchange rate has to return to its initial level.

<sup>7</sup> Contrary to a stabilization program with flexible exchange rates, the extent of the monetary contraction is unknown at the beginning of the program. This makes the credibility of the monetary contraction a challenging precondition in a fixed exchange rate regime. On the advantages of stabilization with flexible exchange rates, see Schweickert et al. [1992] and Schweickert [1993a].

needs fiscal discipline,<sup>8</sup> i.e. expenditure has to be reduced and/or alternative taxes have to be raised. Otherwise growing pressure on the central bank to increase the money supply would be expected by rational private agents. Hence prices would not be adjusted.

The outflow of foreign exchange reserves could run down the stock of reserves before trade is balanced. In this case a nominal devaluation will be expected and this expectation will lead to a devaluation even before the reserves are actually depleted.<sup>9</sup> Such a devaluation is typically avoided in the short run by increasing import protection, i.e. tariff and non-tariff barriers as well as convertibility restrictions, in order to achieve a balanced trade without changing the currency regime [Williamson, 1987]. The expectation of either a nominal devaluation or increased protectionism significantly diminishes the pressure on private agents to reduce prices. These problems could be avoided by a full coverage of the monetary base by foreign exchange. In this case the Central Bank acts as a currency board and the foreign exchange constraint is eliminated.

If the monetary contraction is possible, the question arises, if it actually occurs. The fall in demand ( $B_1 \rightarrow C$ ) provides strong incentives for the authorities to change the program and to avoid temporary unemployment via a monetary expansion ( $B_1 \rightarrow D$ ). This means that the announcement of a fixed exchange rate is time-inconsistent and private agents have an incentive not to adjust prices but to wait for the policy switch.<sup>10</sup>

In the case that private agents judge macroeconomic constraints not to be relevant, monetary contraction is credible and guarantees a pressure to reduce the prices of non-traded goods. If these prices are actually adjusted depends on the price setting behaviour in the real sphere of the economy. The fall of non-traded goods prices will not occur in the presence of indexation and inflationary inertia [Edwards, 1993, pp. 5-10] and a low level of competition. In this case,

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<sup>8</sup> Of course, the collection of the inflation tax could improve because of an increasing demand for money. This implies that a monetary contraction, i.e. a decrease in real cash balances, does not occur at all. However, the question addressed here is if a monetary contraction could be sustained.

<sup>9</sup> See the literature on balance-of-payments crises summarized by Aghevli and Montiel [1991, pp. 229ff.].

<sup>10</sup> See Funke [1993] for an application of time-inconsistency arguments for reform strategies in developing and Eastern European countries.

the monetary contraction will lead to higher unemployment rather than to a real exchange rate adjustment.

The adjustment towards a new equilibrium becomes easier if the country is able to attract capital inflows ( $T \rightarrow T'$ ). There are basically three reasons for capital inflows. First, commercial banks and official lenders honouring the macroeconomic reform efforts may grant access to new credit lines and increase foreign direct investment. Second, private agents may shift their portfolio towards domestic assets if they expect an undistorted macroeconomic environment and a higher profitability of investment. Third, speculative gains can be realized in the short-run due to slowly declining nominal interest rates and the fixed exchange rate resulting in temporarily high real interest rates for foreign investors.

Large capital inflows finance emerging trade deficits ( $B_1$ ) and increase foreign exchange reserves ( $B_1 \rightarrow E_1$ ). Hence, the money supply grows and the prices for non-traded goods do not have to be adjusted downwards. However, such an equilibrium ( $G_1$ ) may not be sustainable. First, capital inflows are of a temporary nature at least to some extent. Second, the country may experience a negative terms-of-trade shock. Third, if the exchange rate is fixed against a single currency, e.g. the US \$, an appreciation of the US \$ against other relevant currencies would imply a real appreciation for the domestic currency as well.

All these shocks have qualitatively the same implication for the economy. They shift external equilibrium back towards  $T$ . The real exchange rate becomes overvalued, the trade deficit has to be financed by an outflow of foreign exchange reserves, and the demand for non-traded goods falls short of supply. This means that all the problems described above for the case of stabilization without capital inflows emerge. Moreover, the problems are even more pronounced due to the initial expansion. Monetary contraction must now be significantly larger than in the case of exogenous capital flows ( $G_2 \rightarrow D$ ). This is why the reversal of capital flows typically marks the end of fixed exchange rate regimes. Monetary contraction is not sustained and a devaluation crisis emerges [Guidotti, Végh, 1992].

To sum up, two phases of exchange rate based stabilization have to be distinguished: an expansionary first phase and a second phase where the economy faces the same problems than in the case of a negative real shock shifting the equilibrium real exchange rate from  $s_2'$  ( $G_2$ ) to  $s_1'$  ( $G_1$ ), i.e. to devalue the actual real exchange rate. The two basic strategies for real exchange

rate devaluation are monetary contraction or nominal devaluation. In terms of an exchange rate based stabilization program this implies either to stick to the fixed nominal rate and to allow for reserve outflows or to end the program by a nominal devaluation. The relative advantages of the two strategies in a situation of real overvaluation are relevant in two respects. First, it is optimal to end the fixed exchange rate regime in the case of a strong advantage of a nominal devaluation. Second, if this is the case, the credibility of monetary contraction would be rather low and even a modest negative shock could induce a speculative attack.

### ***II. 3. Real Exchange Rate Adjustment***

Differences in efficiency determine the relative advantages of the two strategies for real devaluation – monetary contraction and nominal devaluation [Schweickert, 1993b]. The efficiency of a strategy depends on its effectiveness, its sustainability, its potential costs, and on complementary liberalization policies. The superiority of one strategy can hardly be assessed on theoretical arguments. On the one hand, there are disadvantages of the monetary contraction strategy which have already been discussed: fiscal, foreign exchange, and employment constraints on monetary contraction as well as a lagged impact on relative prices. On the other hand, disadvantages of nominal devaluation and advantages of monetary contraction over nominal devaluation have to be considered:

- The inflationary impact of a nominal devaluation reduces the initial real devaluation effect and hurts the inflation target.
- In the case of a fiscal constraint, the scope for nominal devaluation is limited because it increases debt service obligations (denominated in foreign currencies) and decreases revenue from trade taxation (assuming a strong decline in import values).
- A nominal devaluation may deteriorate the current account and can put additional strain on the foreign exchange position in the short run due to the J-curve-effects.
- Contrary to a nominal devaluation a monetary contraction mobilizes domestic savings, stimulates private investment and raises the efficiency of financial intermediation by disinflation and higher real interest rates.

- A monetary contraction also avoids a strong rise in the prices for imported inputs which could weaken the incentives to raise the production of tradable goods in countries with strong import dependence.

These arguments suggest that – at least in the cases of a modest overvaluation and a high inflation rate – it is of advantage to stick to the fixed exchange rate and to allow for a monetary contraction. The efficiency of both monetary contraction and nominal devaluation could be improved by complementary liberalization policies.<sup>11</sup> However, the conclusions are different for the liberalization of goods and capital markets.

The most prominent issues in the liberalization of goods markets are trade liberalization and privatization of state-owned enterprises. The arguments against a simultaneous implementation of trade liberalization and macroeconomic reform claim that such a policy exceeds the capacity for real adjustment. There are, however, strong arguments in favour of a simultaneous implementation [Ize, 1990]. First, the production of exports is encouraged by lower prices for imported inputs shifting trade balance from T towards T' (Figure 1). This reduces the need for real devaluation and relaxes the foreign exchange constraint. Second, intensified competition raises the efficiency of domestic production, allows to reduce prices, and, thus speeds up real devaluation in the case of a fixed exchange rate ( $C \rightarrow G_1$ , Figure 1). In the same vein, the privatization of public-owned enterprises – especially if they belong to the non-traded goods sector – makes prices more flexible and speeds up real exchange rate adjustment if an appropriate regulation provides incentives for competition and enhances efficiency in areas where competition is not possible.

With respect to capital controls, the problem is to measure the temperature of capital flows [Dornbusch, 1983; McKinnon, 1984]. The flow of cold money, i.e. long-term capital, is difficult to avoid in the case of capital outflows and is highly welcome in the case of capital inflows because it reduces the need for real devaluation. The flow of hot money, i.e. speculative, short-term capital, could destabilize real exchange rate adjustment. In terms of Figure 1, fluctuating capital flows imply that external balance fluctuates, e.g., between T and T' and that price signals for adjustment become unreliable. Therefore, exchange

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<sup>11</sup> See Edwards [1989] for an overview over the debate on the sequencing of macroeconomic reforms and liberalization policies.

controls are advocated for the flow of hot money in the first place.<sup>12 13</sup> It can be expected that private agents will adjust quicker to changes in relative prices if they regard them as more stable. The real devaluation policy may become more effective and sustainable if private agents favour capital controls as a safeguard against destabilization. Moreover, a higher stability of real exchange rate adjustment improves investment conditions and growth prospects (Rodrik [1989] p. 19).<sup>14</sup>

Financial market regulations such as fixed nominal interest rates negatively affect real exchange rate devaluation. A contraction of loanable funds may occur leading to or expanding a demand surplus (e.g. at point  $B_1$ , in Figure 1) if interest rates are not allowed to rise in order to mobilize private savings and to relax credit constraints [Corsepius, 1989; McKinnon, 1973, pp. 84 ff.]. This does not only refer to the monetary contraction strategy but to the nominal devaluation strategy as well. In this case, real interest rates decline due to the fixed nominal interest rate and increasing inflation.<sup>15</sup> By relaxing credit constraints, a liberalization of domestic capital markets improves real adjustment to overvaluation in two respects. First, efficiency enhancing investment in the production of non-tradables eases the decline of prices for these products. Hence a real devaluation will be quicker and temporary unemployment could be avoided. Second, investment in the restructuring of domestic supply in favour of tradable goods, shifts equilibrium from  $G_1$  towards  $B_2$  ( $Y \rightarrow Y''$ ;  $T \rightarrow T''$ ). The larger this supply response, the less the need for real devaluation.

The arguments on the appropriate sequencing of macroeconomic reform and liberalization policies show that liberalization of goods markets, of the domestic capital market, and of long-term capital flows can be expected to improve rather

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<sup>12</sup> The effects of speculation can be expected to differ according to the exchange rate regime adopted. But both fixed and flexible exchange rate systems are vulnerable to destabilizing speculation.

<sup>13</sup> It is of course possible to circumvent capital controls by overinvoicing of imports and underinvoicing of exports. But the controls raise the costs and limit the extent of currency speculation.

<sup>14</sup> Generally, overvaluation cannot be avoided or reduced by strict capital controls because it is due to inconsistent domestic policies and distortions in capital and goods markets in the first place. However, the relevant question here is whether or not free capital movements support the real devaluation policy which tries to remove such inconsistencies.

<sup>15</sup> Contrary to a nominal devaluation, a monetary contraction can improve real interest rates because of decreasing inflation.

than to overstrain the capacity for real adjustment. However, as was the case for the use of monetary and exchange rate policy for macroeconomic reform, liberalization policies may overstrain the capacity for fiscal adjustment. Trade liberalization declines trade tax revenues; privatization declines the possibility for implicit taxation via public enterprises; free capital flows exclude the collection of the inflation tax via foreign exchange premia; the liberalization of the domestic capital market increases the cost of borrowing. These effects stress the need for fiscal reform in order to sustain fiscal control over the economy and to improve the credibility of the reform program.

The following conclusions can be drawn from the theoretical discussion of exchange rate based stabilization and real devaluation:

- the preconditions for sustaining an exchange rate base stabilization are rather demanding: the independence of monetary policy from macroeconomic constraints – fiscal balance, foreign exchange, unemployment – and a high flexibility of domestic prices;
- if these preconditions are fulfilled, to stick to the fixed exchange rate in a situation of an overvalued exchange rate and a high inflation rate has advantages with respect to the inflation target and economic performance and disadvantages with respect to the speed of relative price adjustment;
- the liberalization of goods and capital markets – with the exception of short-term capital flows – helps macroeconomic reform because it improves adjustment capacity;
- fiscal reform is of utmost importance because fiscal constraints limit both the use of monetary and exchange rate policy for macroeconomic reform and the liberalization of goods and capital markets which help macroeconomic reform.

It has to be analyzed in the following if these conclusions fit to the experience with macroeconomic reforms in the Southern Cone countries Argentina and Chile.

### **III. The Experience**

#### ***III.1. Argentina and Chile in the 70s and 80s***

The experience of Argentina and Chile in the 70s and 80s shows that two countries starting with comparable conditions and applying comparable macroeconomic concepts can end with a strikingly different economic

performance [Schweickert, 1993c, Ch. E]. Table 1 shows the four parallel phases of macroeconomic policy in the two countries. Phase I (PI) was characterized by socialist governments which left the countries with accelerating inflation rates and overvalued exchange rates [Fomelli et al., 1987, p. 1; Fernandez, 1985, p. 871; Corbo, 1985, p. 893]. The first phase of reforms (PII) was characterized by numerous devaluations. This fits to the nominal devaluation strategy for macroeconomic adjustment. At the end of the 70s both

Table 1 — Macroeconomic Policy in Argentina and Chile, 1970-1988

Phase	Policy	Years <sup>a</sup>	
		Argentina	Chile
PI	Initial situation	1970-1975	1970-1973
PII	Nominal devaluation	1976-1978	1974-1979
PIII	Monetary contraction	1979-1980	1980-1981
PIV	Nominal devaluation	1981-1988	1982-1988

<sup>a</sup> PI ends with the military coups. PIII includes only the years in which the fixed exchange rate (Chile) and the Tablita (Argentina) were implemented during the whole year.

Source: See text.

countries switched from the nominal devaluation to the monetary contraction strategy, i.e. to exchange rate based stabilization (PIII). Argentina introduced the Tablita by which nominal devaluation was reduced progressively. Chile fixed the nominal exchange rate immediately. At the beginning of the 80s this exchange rate policy was no longer sustainable and both countries had to switch to the nominal devaluation strategy again (PIV).

The consequences of macroeconomic policies on inflation, real exchange rate adjustment, and economic performance (Table 2) were exactly those predicted by the model in Section II. In both countries, inflation declined during exchange rate based stabilization in PIII. The real exchange rate appreciated because inflation was still significantly higher than in the US. Net capital inflows



Table 2 — Macroeconomic Reforms in Argentina and Chile, 1970-1988

Periods <sup>a</sup>		PI	PII	PII	PIV
<b>A. Monetary and exchange rate policy</b>					
Money supply M1	ARG <sup>b</sup>	120.37	182.91	117.05	287.44
(growth in %)	CHI	194.24	167.98	25.39	22.32
Nominal devaluation <sup>c</sup>	ARG	49.75	128.54	44.09	203.20
(in %)	CHI	102.68	158.56	-5.23	22.19
<b>B. Economic performance</b>					
Inflation	ARG	62.4	265.2	130.2	309.63
(in %)	CHI	122.2	209.4	27.4	20.3
Real devaluation <sup>c</sup>	ARG	3.93	-10.25	-29.89	12.19
(in %)	CHI	13.27	9.60	-16.80	12.29
Net capital flows	ARG	4.77	12.62	43.33	-2.21
(in % of imports)	CHI	0.68	21.19	67.79	-28.54
Foreign exchange reserves	ARG	84.90	94.80	130.80	78.90
(% of imports)	CHI	58.00	36.30	70.80	89.90
GDP	ARG	3.80	0.70	4.30	-0.81
(growth in %)	CHI	1.90	3.80	6.70	1.50
<b>C. Fiscal reform and liberalization</b>					
Fiscal balance <sup>d</sup>	ARG	-4.82	-4.40	-3.13	-6.19
(% of GDP)	CHI	-7.68	-0.05	4.00	-1.41
Domestic credit financing	ARG <sup>e</sup>	37.02	20.39	14.61	20.62
(% of expenditure)	CHI <sup>f</sup>	33.18	3.01	-11.52	-0.45
Inflation tax <sup>g</sup>	ARG	36.31	45.26	27.40	24.53
(% of expenditure)	CHI	40.29	12.70	4.90	3.14
Trade tax	ARG	9.65	12.27	9.21	9.18
(% of expenditure)	CHI <sup>h</sup>	8.47	6.62	5.18	8.05
Foreign interest payments	ARG	2.97	3.37	2.70	12.94
(% of expenditure)	CHI	2.21	5.24	5.59	16.33
Average import tariffs <sup>i</sup>	ARG	24.39	35.89	28.26	32.46
(in %)	CHI	36.40	11.96	8.04	13.96
Premium on foreign exchange	ARG	48.60	31.30	1.40	44.00
(in %)	CHI	573.40	15.40	8.00	25.00
Real interest rates <sup>j</sup>	ARG	-21.71	-29.15	-3.83	1.43
(in %)	CHI	-29.01	-3.27	16.88	5.64

<sup>a</sup> For the definition of the periods, see Table 1; all values are period averages. - <sup>b</sup> PI: 1973-75. - <sup>c</sup> Own calculations; effective rates according to a trade weighted basket. - <sup>d</sup> Negative values for fiscal deficits. - <sup>e</sup> PI: 1974-75. - <sup>f</sup> PI: 1972-73. - <sup>g</sup> Own calculations. Real values for M1 multiplied by inflation rate. - <sup>h</sup> PI: 1972-73. - <sup>i</sup> Calculated using actual tax revenue. - <sup>j</sup> Deflated by consumer price index. Due to data constraints and different regimes, different interest rates for bank deposits have been used.

Source: International Monetary Fund, Balance of Payments Statistics, Direction of Trade Statistics, Government Finance Statistics Yearbook, International Financial Statistics. Washington, var. iss.; Banco Central de Chile, Boletín Mensual. Santiago de Chile, var. iss.; World Bank, World Development Report. New York, var. iss.; Banco Central de Argentina, Información estadística sobre tasas de interés. Separata del Boletín Estadístico. Buenos Aires 1990; Cowitt, Philipp P. (Ed.), World Currency Yearbook. New York, var. iss.; UNCTAD, Handbook of International Trade and Development Statistics, 1990. New York 1991.

increased tremendously even overcompensating the import surge. Due to the increase in domestic absorption, average GDP growth rose to 4.3 per cent in Argentina and 6.7 per cent in Chile. In terms of Figure 1, the economies were in the expansionary phase of stabilization approaching a new equilibrium  $G_2$ . The external shock which ended this expansionary first phase was the debt crisis and the consequent turnaround in the direction of net capital flows. This shift in external equilibrium meant that the real exchange rate suddenly became grossly overvalued. Both countries had to give up the fixed exchange rate and to limit a balance-of-payments crises and a run on the Central Bank. As a consequence of this crisis, the growth of real GDP deteriorated.

There are, however, significant differences between the two countries. First, Table 2 shows that Chile implemented the strategies according to the theoretical concepts shown in Section II: In PIII the nominal exchange rate was kept constant while monetary expansion was reduced (the monetary contraction strategy). In PIV monetary expansion was kept constant while the nominal exchange rate was devalued (the nominal devaluation strategy). This was not the case in Argentina. Monetary expansion increased during devaluation periods and decreased only modestly during the monetary contraction period. As a consequence, Chile reduced the inflation rate substantially and permanently whereas Argentina's inflation rate reached record levels in PIV.

Second, exchange rate devaluation in PIV was rule-based in Chile and discretionary in Argentina. After a short period of floating, Chile implemented a passive crawling-peg with a band, i.e. the exchange rate was devalued to compensated for the difference in inflation at home and abroad plus a small additional devaluation to allow for an inflow of foreign exchange. To the contrary, exchange rate policy in Argentina was highly discretionary with permanent changes between fixing and floating. As a consequence, Chile was able to smooth real exchange rate adjustment and could even improve the reserve position in PIV while reserves declined substantially in Argentina.

Third, real devaluation in PIV was obviously less contractionary in Chile than in Argentina. The averages for the growth rate of real GDP shown in Table 2 (Argentina: -0.81 per cent; Chile 1.5 per cent) even underestimate the difference. While both countries experienced negative growth rates at the beginning of PIV, the Chilean economy grew at 9.3 per cent in 1989 while the Argentine economy shrunk at 4.5 per cent.

These remarkable differences can be explained by the different restrictiveness of macroeconomic restrictions – above all the fiscal balance – and the different efforts in liberalizing the economy. With respect to the fiscal balance, Chile implemented reforms already in PII, i.e. before monetary contraction in PIII. A broad based Value-Added-Tax was introduced [McKinnon, 1982; Meller, 1990, p. 77f.] which allowed for the substitution of inflation and trade taxation as well as for an overall elimination of fiscal deficits and domestic credit financing (Table 2). Fiscal constraints for monetary and exchange rate policy were relaxed and the policy instruments could be used as implied by theory. Chile was even able to keep its monetary and exchange rate policy on track after the foreign interest payments rose dramatically in the 80s. To the contrary, Argentina did not implement any significant fiscal reform [World Bank, 1990a], relied heavily on revenues from inflation and trade taxation and domestic credit financing. Hence, the use of policy instruments was restricted by the need to keep fiscal balance. As a consequence, monetary contraction in Argentina could not be as strong and was not sustained as was the case in Chile during PIII and PIV and nominal devaluation was often delayed in PIV.

Fiscal reforms also allowed for strong liberalization efforts in the case of Chile. In PI import tariffs, (negative) real interest rates, and foreign exchange premia show that the trade and capital market regimes were even more restrictive than in Argentina. This picture changed dramatically during PII and PIII. Chile reduced average import tariffs and real interest rates became positive whereas in Argentina average import tariffs increased and real interest rates remained negative. It was only with respect to capital flows where liberalization was more farreaching in Argentina than in Chile. While Argentina dismantled foreign exchange controls completely, Chile always maintained control over short-term capital flows. As argued in Section II, Chile's emphasis on trade and domestic capital market liberalization was more appropriate than Argentina's emphasis on capital account liberalization in order to improve economic performance effects of a real devaluation.<sup>16</sup>

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<sup>16</sup> The different attitudes towards trade also reflect the differences in the overall regulation of goods markets. Most importantly, the privatization policies followed the same lines. It has to be acknowledged that this was rather a disadvantage for Chile because of the de-facto unregulated privatization of state-owned banks which allowed conglomerates ('grupos') to buy their own banks and to built up bad external credits. The debt service for this bad credits contributed to the net capital outflows in PIV. Hence, privatization increased overvaluation and the consequent adjustment crisis.

To sum up, the comparison of Argentina and Chile shows that the same strategies for stabilization and real exchange rate adjustment can have completely different results depending on fiscal policy and liberalization policies. Chile was able to reduce inflation permanently and to adjust the real exchange rate relatively smoothly because fiscal restrictions to the use of monetary and exchange rate policy were relaxed already in PII by fiscal reform. Additionally, Chile was able to put her economy on a stable growth path because the liberalization of trade and the domestic capital market improved adjustment incentives and adjustment capacity.

However, Chile's experience shows that even under such favourable conditions exchange rate based stabilization is hardly sustainable if a huge negative external shock requires a strong devaluation of the real exchange rate. Possibly the fixed exchange rate regime in Chile could have been sustained in the case of a modest or slow deterioration of the external environment. It, therefore, provides the reference case for Argentina's current attempt to sustain such an exchange rate regime.

### *III. 2. Argentina in the 90s*

Exchange rate based stabilization in Argentina is far more successful in the 90s compared to the 80s and it seems to be even more successful than the Chilean exchange rate based stabilization in the 80s (Table 3).<sup>17</sup> Starting with hyperinflation in 1990, annual consumer price inflation came down to 6.6 per cent at January 1994. Capital flows changed their direction and Argentina has received substantial net inflows since 1992. The nominal peso/\$ exchange rate was below the 1:1 parity since April 1991. This means that there was an excess supply of dollars at this parity which was absorbed by the Central Bank. As implied by the convertibility law this was directly translated into an increase in money supply,<sup>18</sup> and the monetary base has more than tripled in real terms since 1990. Market driven expansion led to a real economic growth of about 9 per cent after years of stagnation or decline.

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<sup>17</sup> For a more detailed analysis see Schweickert [1994a; b]. Information was derived from the sources given in Tables 3 and 4.

<sup>18</sup> The data on the reserve position of the Central Bank and the monetary base reveals the high extent to which the monetary base is backed by reserves since 1991. The coverage by liquid reserves increased from 50.6 % at the end of 1990 to 99.4 % at the beginning of 1993. Starting in 1991 total reserves have always been higher than the monetary base.

Table 3 — Economic Performance of Argentina Before and During Stabilization

	1990	1991	1992	1993
	<i>percentage change during period</i>			
Consumer Price Inflation	1344	84	18	7
	<i>period averages</i>			
Real Exchange Rate Index <sup>a</sup>	100	61	53	48 <sup>b</sup>
	<i>millions of US dollars</i>			
Trade Balance	8628	4419	-1388	n.a.
Exports	12354	11978	12235	n.a.
Imports	3726	7559	13623	n.a.
Current Account	1903	-2804	-8370	n.a.
Capital Account	-3201	2317	10662	n.a.
Direct Investment	1836	2439	4179	n.a.
Other	-5037	-122	6483	n.a.
Change in Reserves	3075	1377	4081	n.a.
Exceptional Financing	3996	3436	2142	n.a.
	<i>millions of US dollars at end of period</i>			
Total Reserves	4432	6599	12493	15015 <sup>c</sup>
Liquid Reserves	1725	3595	10027	11738 <sup>c</sup>
Monetary Base	3614	5726	11010	13330 <sup>c</sup>
	<i>period averages</i>			
Real GDP Growth(%)	0.4	9.0	8.7	6.0 <sup>d</sup>

<sup>a</sup> Effective rate against a trade weighted basket according to Fundación Mediterránea. — <sup>b</sup> Calculated for the first three quarters. — <sup>c</sup> At the end of the third quarter. — <sup>d</sup> Estimated.

Source: Economic Intelligence Unit, Argentina. Country Report, London, var. iss.; The Economist, January 29th-February 4th 1994, p. 108. Fundación Mediterránea, Newsletter. Córdoba, var. iss.; International Monetary Fund, International Financial Statistics, January 1994; own calculations.

However, the external balance situation signals that the expansionary first phase of stabilization may be coming to an end. The net inflow of foreign exchange is becoming increasingly dependent on capital inflows other than exceptional financing or foreign direct investment (FDI). This has two consequences. First, the recent expansion of the foreign exchange reserves is unlikely to be sustainable. The appreciation of the real exchange rate already turned the trade

balance into deficit. With ongoing real appreciation, a further increase in the trade deficit is to be expected. In this context, the recent accumulation of foreign exchange can not be maintained without a further increase in capital inflows. Second, the reserve position is becoming riskier. Exceptional financing – mainly debt rescheduling and the accumulation of interest arrears – used for stabilizing reserve flows will be eliminated<sup>19</sup> due to the Brady deal accepted by Argentina in 1992 (see below). Additionally, FDI became significantly less important in 1992. The share of the current account deficit financed by FDI was nearly 100 per cent in 1991, but only 55 per cent in 1992. With an increasing share of the current account deficit financed by less stable types of capital flows, the reserve position becomes less stable as well.

The economic performance of Argentina since the implementation of the Plan de Convertibilidad in April 1991 shows that the predictions of the model are correct and that Argentina is approaching the end of the expansionary first phase of stabilization. Even without negative external shocks, reserve inflows are likely to decrease due to the temporary nature of capital inflows and an increase in the current account deficit is to be expected due to ongoing real appreciation. Hence, the completion of fiscal reform and liberalization policies necessary to avoid or sustain a monetary contraction becomes increasingly important.

The fiscal adjustment which has been achieved can be seen in Table 4. A surplus in the operational budget of the Treasury was achieved by increasing revenues. The main sources for the increase in revenue was the improved collection of the Value-Added-Tax (VAT). The VAT tax base was extended to cover interest payments and transport activities and the VAT rate was increased from 16 per cent to 20 per cent. Additionally, tax evasion was reduced significantly by the revitalized Dirección General Impositiva (DGI) which was quite successful in identifying tax evasion.<sup>20</sup>

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<sup>19</sup> As can be seen in Table 1, Argentina would have lost US \$ 6 bn of foreign exchange in 1991, if it had not referred to exceptional financing. It is safe to assume that the convertibility plan would not have been sustainable in such a situation.

<sup>20</sup> Tax evasion was also reduced due to the reversed Tanzi-effect. With declining inflation rates, tax evasion becomes more difficult.

Table 4 — Fiscal Adjustment in Argentina During Stabilization (millions of March 1993 pesos)<sup>a</sup>

	1991		1992		1993	
	QI	QIII	QI	QIII	QI	QIII
<b>Expenditure</b>						
- Total	3276.9	3873.0	3840.9	3791.6	3374.4	4345.7
- Operational	2574.8	3130.7	2718.9	2662.4	2941.4	3261.2
Financial service	702.2	742.3	1122.1	1129.2	432.9	1084.5
Payroll	859.7	926.1	965.9	921.1	977.6	934.5
Enterprises	262.4	432.0	259.4	193.8	149.2	273.6
Provinces	213.2	162.0	194.2	201.6	400.1	202.3
<b>Revenues</b>						
- Total	2095.1	3694.1	4031.0	3325.8	3113.2	3758.5
- Excl. capital revenues	1955.8	2803.6	3122.0	3215.2	3113.2	3728.1
Capital Revenues	139.3	890.6	908.9	110.6	0	30.4
Shared taxes	1083.6	1843.2	2147.8	2182.4	2455.4	2866.0
Value added tax	501.9	902.8	1031.4	1280.9	1111.0	1221.7
Profits tax	89.9	137.1	182.0	203.7	165.2	286.5
Non-shared taxes	381.0	397.1	492.9	632.2	534.8	674.9
<b>Surplus</b>						
- Total	-1181.8	-178.8	190.0	-465.8	-261.1	-587.2
- Operational	-479.7	563.5	1312.1	663.4	171.8	497.3
- Operational excl. capital revenues	-619.0	-327.1	403.2	552.7	171.8	466.9

<sup>a</sup> All figures reflect the balance of the Tesorería. The figures for the sub-categories of revenues in September 1993 had to be estimated using figures for Recaudación Tributaria Nacional and assuming the share of the Tesorería equal the average share for July and August. capital revenues in September have been assumed to equal the average of July and August.

Source: Fundación de Investigaciones Económicas Latinoamericanas (FIEL), Indicadores de Coyuntura. Buenos Aires, var. iss.; own calculations.

Additionally, the radical privatization program led to a strong increase in capital revenue. The fiscal benefits and risks of privatization can be seen in Table 4. Although only the direct impact due to cash payments can be identified,<sup>21</sup> capital revenues due to privatization accounted for more than 20 per cent of total fiscal revenue. The peak in capital revenues was responsible for the total surplus of the

<sup>21</sup> In 1992 \$ 6.7 bn were collected from privatization. Of this total, 2.6 bn were in cash, 1.5 bn in debt transfers, and 2.6 bn in redeemed public debt bonds at market values.

Treasury at the end of 1991<sup>22</sup> and the beginning of 1992. But they dried up at the beginning of 1993 while the transfers to public enterprises were still significant,<sup>23</sup> and the total deficit returned to high levels. The problem is that these high deficits now have to be reduced without the possibility of selling public enterprises to a large extent.<sup>24</sup>

This is a rather demanding task because financial service payments increased strongly due to the consolidation of internal and external public debt. The consolidation of internal debt started in 1991 with the issuance of new bonds – which contain a grace period – for accumulated credits from pensioners.<sup>25</sup> In August 1992 a reform was approved by Congress which introduces private pension funds. At the cost of increasing Treasury transfers starting in 1993, pensions were raised to the legally required level in order to stop the accumulation of public debt. Until the complete reform has been implemented

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<sup>22</sup> Total surplus was at 384.8 millions of March 1993 pesos in the fourth quarter of 1991 which is not reported in Table 4.

<sup>23</sup> A positive long term effect on fiscal balance will result from a reduced stock of public debt. A further decline in transfer payments to public enterprises can be expected if privatization is completed because a part of the transfers in Table 4 may be the result of consolidation activities.

<sup>24</sup> A problem which is going to be solved is the organization of fiscal federalism and the consolidation of provincial government budgets. In the past, provincial governments financed their deficits by credits from the provincial banks which were owned by them. The provincial banks, in turn, refinanced themselves by rediscounts from the Central Bank [World Bank, 1990b, pp. 75-79]. If the convertibility plan is to be sustained, fiscal adjustment also has to take place at the provincial level, i.e. enterprises owned by provinces have to be privatized and payroll payments to be reduced. The consolidation of provincial government budgets is impossible without a formalized coparticipation scheme allowing the provinces to calculate future income. Such a scheme was negotiated in 1993.

<sup>25</sup> Accumulated credits from pensioners stem from the fact that pensions are financed by the current contributions of the working population and the fact that these contributions have not been sufficient to pay the legally required level of pensions (70-82 per cent of the wage). Some of these special schemes can be labelled political rents and were officially granted for premature retirement in declining sectors of the economy. Contributions decreased because of the economic downturn before 1991 and because of strong incentives to evade this type of tax in a purely distributive system. Legally required benefits increased because various special pension schemes were created. The deficit of the pension fund – a quasi-fiscal deficit as the former deficit of the Central Bank – was partly covered by Treasury transfers. The rest was financed by bonds which were given to the pensioners instead of cash payments. In 1991 the stock of this type of public debt amounted to \$ 7.3 bn with an monthly increase of \$ 200 m.



the overall effect of reducing debt accumulation and delaying debt service on the one hand and increasing pensions and financing the transition period<sup>26</sup> on the other hand is unknown and the development of the public sector deficit remains uncertain.

The consolidation of external debt started in April 1992 with the Brady debt reduction agreement between the commercial banks' advisory committee (BAC) and Argentina. An interim treatment for 1992 was negotiated and creditor banks could exchange principal of old debt for either a par bond with a low and fixed nominal interest or a discount bond with 35 per cent discount but a flexible and market oriented nominal interest. Most banks opted for the par bond. This reduces the uncertainty of the development of total expenditure by fixing future debt service obligations. But at the same time, Argentina accepted high debt service obligations. Table 4 show that operational surpluses could no longer cover financial service payments.

Argentina's fiscal adjustment, which is a necessary condition for the sustainability of a fixed exchange rate regime, has been far-reaching and radical. This is not only true compared to other developing countries but also with respect to developed countries. However, the remaining problems to distribute taxes, to force provincial governments to adjust, to eliminate the quasi-fiscal deficits of the pension system, and –perhaps most importantly – to transfer the principal and interest payments accepted in the Brady agreement without running fiscal deficits contain significant risks and require further adjustment efforts. Only if private agents expect that the government can solve these problems without changing the passive monetary policy, the credibility of the present exchange rate remains high preventing speculative capital outflows. This will only be the case when fiscal deficits are permanently eliminated.

Fiscal adjustment has to be complemented by liberalization and deregulation policies because prices have to become flexible downwards in order to allow for a real devaluation if necessary and because supply response has to be improved in order to speed up adjustment. Two important measures have been introduced in Argentina in this respect. First, the currency became fully convertible and

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<sup>26</sup> All employees will have to make contributions to the new funds while the state run system will continue to cover payments to current retirees and will pay a basic pension to all those who have paid into the new system for a certain number of years and a compensatory pension to all members of the old system proportional to the number of years of contributions and the average wage in the ten years prior to retirement.

trade has been liberalized substantially linking domestic tradable goods prices directly to world market prices. Import tariffs have been reduced since January 1991 from an average of 18.15 per cent to an average of 10.24 per cent with a maximum tariff of 20 per cent for final products and a zero tariff for capital goods not produced in Argentina. Export taxation and non-tariff barriers have been abolished. The introduction of a compensation scheme for exporters helps to equalize the incentives to produce for internal or external markets.<sup>27</sup> It can safely be assumed, that this shift from import substitution to world market orientation increases competition from abroad helps price flexibility and supply response.

Second, the radical privatization process aims at improving the efficiency of production. The list of privatized enterprises is quite impressive. Up to June 1992, the government sold the telephone company, the national airline, TV channels, petrochemical firms, an electric power station, a steel mill, a shipyard, hotels, buildings, oil fields, and concessions for roads and railways. In 1993 the radical privatization program reached its final stage.<sup>28</sup> In the end, the gas and water supply and the transport system will be mainly in the hands of private entrepreneurs. The privatization includes the so-called public utilities and the transport system, which are state-owned to a large extent in developing and developed countries. The important fact is that the public utilities and the transport system belong to the non-traded goods sector. The higher efficiency gains resulting from the privatization of firms in the non-traded goods sector, the higher the probability that the prices of these goods could be reduced, i.e. that the real exchange rate could be devalued without a nominal devaluation.

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<sup>27</sup> The effects of MERCOSUR are not discussed here. MERCOSUR is a new attempt towards regional integration which aims at forming a common market for Argentina, Brazil, Paraguay, and Uruguay. But current trade relations between Argentina and its neighbours are determined by the real appreciation of the peso and the general trade liberalization in Argentina rather than by integration efforts.

<sup>28</sup> The basic privatization strategy was to define supply conditions and price ceilings, to sell then at the highest price possible, and to keep shares of the privatized firm in the government portfolio. The case of the telephone company – one of the first public enterprises sold in 1991 – exemplifies the advantages of this privatization strategy. Besides the amount for the initial purchase, the government received \$ 75 m in tax payments instead of covering losses as in former years. Additionally the government was able to sell the remaining shares with the book value being four times the figure paid for the purchase.

The picture with respect to the domestic capital market is less clearcut. On the one hand, nominal interest rates are not regulated and financial data show increasing deposits, positive real interest rates, and a shift towards longer maturities.<sup>29</sup> Thus, the availability of credit for investment in restructuring should have improved significantly. On the other hand, state-owned banks clearly dominate the Argentine banking sector. Privatization would increase competition, strengthen the incentives to evaluate credit risks properly, and improve the chances for low-risk, productive investment to claim a higher credit share. Additionally, the slowdown of the increase in deposits during 1992 underlines the dependence of liquidity and total credit supply on the development of the reserve position.<sup>30</sup> In order to tackle this problem, the Central Bank allowed the banks in late 1992 to hold their reserves either in pesos or in dollars and authorized the creation of dollar denominated checking accounts. In October 1991, the Central Bank had already ruled that it would not guarantee deposits of more than \$ 100 a year per depositor. This means that the Central Bank will not act as a lender of last resort for the banking system, as was the case during the banking crisis in 1980. It also means that the substitutability between pesos and dollars is nearly complete. It is hoped that deposits will be shifted from peso to dollar deposits rather than being withdrawn from the financial system in the case of a speculative attack. In the case of a permanent outflow of dollars, however, the monetary aggregates will have to contract substantially. Therefore, the favourable present credit conditions must be used to improve the supply of traded goods. Otherwise the reserve position is likely to deteriorate and Argentina may enter the contractionary phase of an exchange rate based stabilization.

To sum up, Argentina's chances to sustain exchange rate based stabilization are considerably better than in the 80s and comparable to those of Chile in the 80s. This is due to outstanding adjustment efforts with respect to fiscal balance and the liberalization of goods and capital markets. The most important lesson from Argentina's recent attempt towards stabilization is that the implementation of a

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<sup>29</sup> At the beginning of the convertibility plan almost 90% of deposits were for periods of 7 - 13 days. By October 1991 the proportion of these short-term deposits had declined to 47%, and 30 day deposits amounted to 37% of the total.

<sup>30</sup> As a first sign of lower liquidity, the initial increase in the stock market index, which was largely financed by dollar inflows, was reversed during 1992. In November 1992 M2 showed a slight decrease due to currency speculation.

consistent exchange rate based stabilization program does not require any sophisticated sequencing if a country is actually willing to stabilize using this technique. Unfavourable starting conditions have, of course, to be outweighed by radical fiscal reform and deregulation measures which have to be initiated simultaneously with the fixing of the exchange rate.

However, the sustainability of exchange rate based stabilization in Argentina has yet to be tested. The exchange rate could become overvalued, if capital inflows decline and/or a negative external shock occurs. Due to the extent of the recent appreciation, the strong dependence on foreign capital, and the complete openness towards capital flows, real devaluation could become a rather demanding task.

It depends on two factors whether this is a more or less demanding task for Argentina than it was for Chile which has to be seen as the reference case and which had to abandon the fixed exchange rate. On the one hand, the situation is less riskier because – tough it can not be ruled out – a renewed debt crisis or a negative shock with a comparable size is not to be expected in the near future. On the other hand, the situation becomes more riskier the more Argentina approaches the level of US inflation. In this case, even the need for a modest real devaluation would require an inflation rate below the US-level or even a disinflation. Such a situation has never been sustained in practice.

#### **IV. Summary and Policy Conclusions**

The theory of exchange rate based stabilization and real exchange rate adjustment, the comparison of macroeconomic policies in Argentina and Chile in the 70s and 80s, and the analysis of the Plan de Convertibilidad in Argentina in the 90s have confirmed the basic hypothesis of this paper. Even if implementation is perfect the strategy is highly risky due to the concept. Theory shows that a proper implementation requires demanding efforts in fiscal reform and liberalization of the economy. Theory also shows that an overvalued exchange rate is likely to occur and that a real devaluation via a monetary contraction provides the decisive test for the sustainability of the fixed exchange rate.

These theoretical considerations explain why Argentina and Chile performed so differently but could both not sustain exchange rate based stabilization when the debt crisis broke out. Argentina completely failed to implement the concept

properly and lost control over the economy during the real devaluation process in the 80s. Chile implemented the concept properly, could also not sustain the fixed exchange rate but maintained control over the economy after switching to a passive crawling-peg regime. Contrary to the former attempt, the current Plan de Convertibilidad in Argentina, provides an example of a radical fiscal reform and liberalization of the economy. Because non of these reforms had been initiated before the fixing of the exchange rate, Argentina had to compete with time in order to improve the conditions for avoiding or sustaining a real devaluation. Nearly three years after the start of the program, reforms are in their final stage and Argentina could possibly sustain a modest negative shock or a further slowdown of capital inflows.

Three lessons can be offered for other developing and newly emerging market economies:

- Fiscal reform is of utmost importance. Any macroeconomic reform but especially exchange rate based stabilization depends on fiscal reform. Fiscal balance has to become independent of monetary, exchange rate, and liberalization policies. Only in this case, policy instruments could be used according to a macroeconomic reform program.
- Credibility could not be imported but has to be established. The argument, that credibility is imported by a fixed exchange rate is misleading. Credibility requires fiscal consolidation and a liberalization of goods and capital markets in order to allow for monetary contraction and real devaluation. Hence, starting with high fiscal deficits, an unfavourable structure of fiscal revenue and expenditure, and a high degree of regulation, credibility has to be earned by internal adjustment in a very short time.
- An exchange rate based stabilization remains a high-risk strategy even in the case of strong adjustment efforts. Real exchange rate overvaluation can emerge because of too slow adjustment of domestic inflation, a growing trade imbalance, negative real shocks, an appreciation of the reference currency, and lower capital inflows. There are advantages to sustain the fixed exchange rate and to adjust via a monetary contraction in the case of modest shocks. However, the chances to sustain large shocks are rather low. The more inflation converged towards the level of the reference currency, the more likely large shocks require a deflationary process which is hardly to be sustained.

These lessons suggest that exchange rate based stabilization is not an appropriate strategy for developing and newly emerging market economies. Especially for the latter group of countries but also for many Latin American and African economies it is rather unlikely that the ability and the willingness for fiscal reform and for the liberalization of the economy is strong enough to follow, e.g., Argentina's Plan de Convertibilidad. Even if this is the case, developing countries and newly emerging market economies should think long and hard before making a commitment to a fixed exchange rate. At least in the medium-run a switch to a more flexible exchange rate is necessary in order to avoid a deflationary process in the case of an overvalued exchange rate.

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