



Policy Brief

Was fiscal irresponsibility the cause behind the Latin American crises?

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In most cases, currency and financial crises in Latin America were preceded by exchange-rate-based stabilization programs. The first of these programs during the second phase of financial globalization were the so-called Southern Cone stabilization plans. These were implemented in Argentina, Chile and Uruguay in the late 1970s using pre-announced schedules of devaluations (*tablitas*) as nominal anchors. At the time these programs were implemented, the three countries were fighting against high inflation rates, which had settled down since the hyperinflationary episodes that followed the collapse of “populist” policies in the early 1970s.

The *tablitas* were active crawling pegs, in which the central banks pre-announced the future values of the nominal exchange rate over a specified horizon. In all three cases, the schedule described an upward trajectory of the exchange rate, starting with an initial rate of devaluation lower than the ongoing inflation rate and followed by successively decreasing rates. The decelerating rate of devaluation would eventually converge to zero at which time the exchange rate would remain fixed.² The schedules were implemented in the context of broad economic liberalization programs. All three countries followed, with differing intensities, the liberalization of both the current and the capital accounts of the balance of payments, the deregulation of previously-repressed domestic financial markets and, especially in the case of Chile, the privatization of state-owned firms. There was also an explicit attempt to balance the fiscal accounts, which was especially successful in Chile and Uruguay. Although the main objective of these reforms was to achieve greater economic efficiency and growth, they were also meant to play some complementary role in stabilizing prices.

The pre-announcement of the exchange rate path was the key element of the stabilization strategies. The *tablitas* were inspired by the Monetary Approach to the Balance of Payments (MABP). In a context of (fairly) open trade, a decelerating rate of devaluation has a direct effect on reducing inflation of traded goods prices according to the purchasing power parity doctrine. This was not, however, the key

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² Chile was the only country where the peg actually occurred (in mid-1979); in both Argentina and Uruguay, the schemes were abandoned before reaching that point.



channel through which the exchange rate policy was expected to affect domestic prices. The effect of the pre-announcement would be to lower inflationary expectations. Disclosure of future values of the exchange rate was an attempt to affect expectations of forward-looking contracts and thus provide a nominal anchor for future prices. According to the MABP, a reduction in expected inflation would raise the demand for money, facilitating the absorption of the money supply and, thus, lowering the inflation rate. To succeed, however, the announcement should be credible so to induce expectations in the right direction. Under the MABP, in which the balance of payments is thought to adjust to money market disequilibrium, achieving the desired expected rate of inflation requires consistency between the rate of change of the exchange rate and the creation of domestic credit by the central bank (Calvo and Fernandez, 1982). In particular, a deceleration in the rate of change of the exchange rate requires a reduction in the creation of domestic credit. Since central banks can create domestic credit by financially assisting the treasury or commercial banks, a view inspired by the MABP would predict that a pre-announced schedule of decreasing devaluations would be successful in reducing inflationary expectations if it is accompanied by a reduction in the monetization of the fiscal deficit. The credibility of the announcement relies on fiscal austerity (Blejer, 1983).

The implementation of the *tablitas* did not yield the expected results. Inflation decelerated after the programs were launched, although at a much slower pace than that involved in the devaluation schedules. Inertial inflation remained high due to the effects of backward-looking contracts, including wage indexation, but also due to the indexation of many non-tradables such as housing rents, school fees and mortgage payments. The slower speed of deceleration of non-tradable prices compared to that of tradables (which followed the schedules of devaluations more closely) led to a substantial appreciation of the RER. On the other hand, the deceleration of expected exchange rate devaluation initially led to a fall in nominal domestic interest rates, as the uncovered interest parity theorem would suggest. However, due to inflationary inertia and exchange rate risk, the interest rate did not fall sufficiently to equilibrate the yields between similar domestic and foreign assets. The interest rate differential triggered massive capital inflows to all three countries. The impact of greater liquidity facilitated the expansion of economic activity. The economic expansion combined with the appreciation of the RER derived in current account deficits. However, since capital inflows were initially larger than these deficits, central banks managed to accumulate FX reserves during the booming years.

In all three countries, this initial expansionary phase was followed by a second one in which a gradual increase in domestic interest rates and a deceleration of capital inflows were observed. The higher cost of capital together with the substantial RER appreciation was a negative combination for the profitability of firms producing tradable goods. The consequent contraction of the manufacture activity had a negative impact on employment, especially in Argentina and Chile. In a context of stagnant economic activity and substantial current account imbalances, the expectation that the exchange rate rule would be abandoned increased. This



resulted in a further reduction of capital inflows and liquidity and higher interest rates due to higher risk premia. This situation finally led to financial distress in the banking system. In all three countries, banking crises arose about one year before the abandonment of the exchange rate rule.³

Most analyses of the Southern Cone experiments agree that the collapses arose from the perverse macroeconomic configuration consisting of high real interest rates and overvalued RER. A transitory rise in the real interest rate together with an appreciated RER, however, is not inconsistent with the expected results of the programs. Based on a framework a la Dornbusch (1976) with perfect capital mobility and sluggish adjustment in the goods markets, Rodriguez (1982) develops a model showing that a successful stabilization program based on a *tablita* would make the real interest rate fall first and then rise, together with an initial appreciation and then depreciation of the RER. A stylized fact of these experiences, however, is that the nominal interest rate began to rise after an initial decreasing phase. According to the MABP paradigm on which Rodriguez's framework is based, the nominal interest should have followed a decreasing path until equating with the international interest rate. A rise in the nominal interest rate, simultaneous with the deceleration of the rate of devaluation, is indicative of an increasing risk premium. Theoretical efforts were made to explain the behavior of the risk premium as an endogenous result of the stabilization program. One popular explanation, also based on the MABP, pointed to a potential inconsistency between the programmed exchange rate devaluations and the creation of domestic credit via public deficit monetization. This explanation found support in the Argentine experience, where authorities had little success at reducing the fiscal deficit (Calvo and Fernandez, 1982). It is hard to reconcile, however, with the Chilean and Uruguayan cases, where balanced budgets were achieved before launching of the *tablitas*. The failure of inflation to converge to international levels, the appreciation of the RER and the rising risk premium must be explained by other factors.

More plausible stories focus on the destabilizing effects of capital account convertibility in the context of poorly developed domestic financial systems, and the effect of current account imbalances on worsening expectations that the exchange rate rule will be maintained. Frenkel (1983), for instance, develops a portfolio balance model showing that the risk premium increases as an endogenous result of an enlargement of current account imbalances. The model is aimed at illuminating a context similar to those observed in the implementation of the *tablitas*, where financial agents try to take advantage of the significant spreads between the yields of foreign and imperfect substitute domestic assets arising from credible fixed or predetermined exchange rates and capital account convertibility. The behavioral story behind the model is as follows. Given the spreads, a few local players take advantage of the arbitrage opportunities initially, issuing foreign debt to do so. Their exposure to risk essentially depends on the probability that the exchange rate

³ In Argentina the banking crisis started in the second quarter 1980 and the exchange rate regime was abandoned in March 1981; in Chile, they occurred in the second half of 1981 and in June 1982 respectively. In Uruguay there was a problematic financial situation from 1981 and the exchange regime was abandoned in November 1982. Obviously, in these three cases the devaluation worsened the financial problems.



rule is altered (i.e. the exchange rate risk). From the viewpoint of the individual investor, engaging in external borrowing to exploit an arbitrage opportunity has no significant effect on the sustainability of the exchange rate rule. However, since the first movers are exploiting significant benefits, other players have strong incentives to jump in, even when by doing so their combined actions may have negative macroeconomic consequences. The macroeconomic effect of financial arbitrage/speculation is where all the action happens. Capital inflows expand liquidity and credit in the economy. As a result, domestic interest rates and spreads fall, and output and employment grow. The expansion of aggregate demand leads to increases in non-tradable prices, which under fixed or predetermined exchange rate regimes generate a RER appreciation. The real appreciation can be reinforced by the effect of inertial inflation arising from backward-looking behaviors and contracts, as typically happens with stabilization programs. The combined effect of the RER appreciation and higher economic growth worsens the current account. This gradually weakens the credibility of the exchange rate rule. As the probability of exchange rate devaluation increases, the risk premium and the domestic nominal interest rate also increase. The balance sheet of the domestic financial system - which is short on foreign currency and long in local assets- becomes increasingly fragile as the interest rate increases. Capital inflows are retained by the increase in the domestic interest rate; however, there eventually comes a point at which no interest rate can attract new external financing. Capital outflows end up forcing the central bank to abandon the exchange rate rule. The final outcome is a sequential or simultaneous twin (financial and external) crisis.

The dynamics described in Frenkel's model fits the stylized facts of all three Southern Cone failed stabilization attempts. Furthermore, as indicated by Taylor (1998) and Frenkel and Rapetti (2009), it also captures essential elements of other stabilization attempts during the 1990s in Latin America that ended up in crises, including Mexico in 1994-95, Argentina in 1995, Brazil in 1998-99, again Argentina in 2001-02 and Uruguay in 2002. In these experiences, the economies followed similar boom-and-bust cycles led by the behavior of capital movements. All of them started with the implementation exchange-rate-based stabilization programs together with the liberalization of the current and capital accounts of the balance of payments.⁴ As explained for the case of the Southern Cone, the combination of these measures set a macroeconomic configuration that provided a profitable environment for capital inflows. Given the highly liquid environment since the early 1990s, capitals indeed flowed to Latin American economies inducing, also as in the Southern Cone case, the appreciation of RER and an increase of external fragility in the form of excessive current account deficits and external debt accumulation. In all these cases, the widespread perception that the exchange rate rules would hardly be maintained in such fragile contexts triggered capital outflows and balance of payment crises. Except for the case of Brazil, where domestic financial contracts were mostly celebrated in domestic currency, the high degree of financial dollarization in these countries made that the external crises occur simultaneously

⁴ Uruguay actually did not fix the NER, but used it in a way to decelerate inflation gradually.

to banking crises. Except in Brazil, in all these cases the crises implied significant GDP contractions.

Table 1 reports some indicators that characterized the stylized facts of the cycles described above for eight major episodes of currency crisis in Latin America. The first column indicates the crisis episodes, including the years in which the stabilization programs were launched and the years of the exchange rate crises. The second column reports the value of an index of real exchange rate undervaluation for the year prior to each crisis episode.⁵ Values below (above) unity indicate that the RER was overvalued (undervalued). The third and fourth columns provide two indicators of external fragility: the external debt to export ratio and the accumulated current account to GDP ratio during the three years before the crises. The former is a standard measure indicating the ability to repay external debt and the latter gives an indication of the pace of net foreign debt accumulation in the years prior to the crises. For the external debt to exports ratio, we present both the value at the year in which the stabilization program was launched and the value at the year of the currency crisis, separated by a slash, "/". The fifth column reports the GDP variation between the pre-crisis peak and the trough of each episode. Finally, the sixth column shows the government balance as a share of the GDP accumulated for the three years previous to the crises, as an indication of whether countries were running fiscal imbalances before the crises.

In all cases, the undervaluation index was below unity suggesting that prior to the crises there were signs of overvaluation. In most cases, RERs appear to be substantially overvalued. For instance, the RER in Argentina before the abandonment of the *tablita* in 1981 was 31% lower than "equilibrium". There are additional indications that these countries were facing fragile external conditions. Almost all countries experienced significant increases of the external debt/exports ratio. The most dramatic example is again that of Argentina during the *tablita*: external debt jumped from 1.69 times exports to 4.47. This indicator did not get worse in the cases of Argentina and Mexico during the first half of the 1990s; in both cases, the ratios actually shrank. These figures are obscured by the fact that both countries initiated in those periods processes of regional trade integration (Mexico, the NAFTA and Argentina, the Mercosur) which increased substantially their exports but their imports even more. These trends can actually be seen in their persistently high current account deficits in the years previous to the crises. Mexico, for instance, accumulated a current account deficit of 18.4% of the GDP in the three years prior to the crisis. Accumulation of significant current account deficits was not exclusively a Mexican trait; it occurred in all these episodes. The most significant one was that of Chile during the *tablita*, where the current account of the balance of payments accumulated a deficit of 27.4% of GDP between 1979 and 1981. The fifth column shows that, except for the case of Brazil that experienced a mild recession, all these episodes ended up in currency and financial

⁵ Using annual data from Penn World Tables 6.2, we regressed the RER on real GDP per capita for a panel of 188 countries for the period 1950-2004 to obtain PPP adjusted by the Balassa-Samuelson effect RERs. Then, we constructed an index of RER undervaluation as the ratio of actual to PPP-adjusted real exchange rates. The methodology is identical to that used by Rodrik (2008), among others.

crises that implied high contractions in GDP. Finally, the last column in table 1 suggests that there is little evidence indicating that these crises were caused by fiscal imbalances. In most cases, countries had been running fiscal surpluses before the crises.

Table 1

Episode	Index of RER undervaluation	External debt / Exports	Current Acc./ GDP (3 years)	GDP (%)	Fiscal Balance/ GDP (3 years)
Argentina 1978-81	0.69	1.69/4.47	-10.4	-8.7	-9.9
Chile 1978-82	0.92	2.47/3.71	-26.6	- 16.0	12.8
Uruguay 1978-82	0.98	1.07/2.20	-16.1	- 13.3	1.9
Mexico 1988-94	0.71	2.38/1.71	-18.4	-9.2	7.6
Argentina 1991-95	0.69	3.74/3.35	-10.2	-5.6	1.7
Brazil 1994-99	0.68	2.87/4.05	-11.1	-1.6	0.0
Argentina 1991-2002	0.70	3.74/4.48	-8.8	- 19.9	-7.3
Uruguay 1991-2002	0.85	1.72/3.19	-7.9	- 14.7	-11.8



The collapse of the convertibility regime in Argentina was preceded by a persistent fiscal deficit. The most popular interpretation of this crisis actually weights lots of emphasis on fiscal imbalances.⁶ The emphasis on fiscal irresponsibility as the main cause of the convertibility crisis is at a minimum controversial. A detailed analysis of the fiscal figures reveals that the increase in public expenditure was due to increasing debt services associated with the rise in sovereign risk premium (Damill et al. 2010). A key question involves again the driver of risk premium behavior.

There are no indications that the rise in the risk premium arose from the perception that the government was unwilling or unable to correct its imbalance. Since 1999, the Argentine authorities followed a series of public spending cuts and tax raises to reduce the deficits. In mid-2001, when economic activity was virtually in free fall, they imposed a 13%-reduction on expenditures (including public salaries and benefits) and implemented a zero-deficit rule making fiscal spending almost entirely dependent on tax revenues. The costs of abandoning the currency board and correcting the exchange rate misalignment were perceived as so high that the government always opted to cut expenditures and raise taxes (and pay a high costs in terms of popularity) instead of modifying the exchange rate regime (Galiani et al., 2003). This revealed preference reached its maximum in December 2001 when President Fernando De la Rúa decided to resign instead of announcing the abandonment of the currency board and the default on the external debt. With this background in mind, it seems hard to subscribe the fiscal irresponsibility hypothesis as an explanation for the rising risk premium during the last years of the convertibility.

A more plausible explanation of the behavior of the risk premium and the worsening of the fiscal balance rests again on the role of external fragility. As in all the other experiences commented above, by the end of the convertibility regime the RER was substantially overvalued as a result of the stabilization program. RER overvaluation was further accentuated by the devaluations in other developing countries during the second half of the 1990s, specially that in Brazil. If the perception was that the RER was overvalued and a depreciation was needed, what would the implications of a correction be? To answer this question, it is important to have in mind the high degree of financial dollarization of the economy. Despite the high credibility enjoyed for a long time, the convertibility regime did not affect the private sector's preference for dollar-denominated assets that gradually developed during the 1970s and 1980s as a protection mechanism against inflation. The proportion of both assets and liabilities in the local banking system in US dollars grew to more than 60%. Private sector preference against peso-denominated assets also induced the public sector to issue debt in foreign currency, which represented 95% of total public debt by the end of 2000. Thus, it was clear that a correction of the exchange rate would entail a significant negative balance sheet effect on both the public and private sectors, turning them bankrupt.⁷ The rising trend in sovereign risk

⁶ An eloquent example of this interpretation is that articulated by the former chief economist of the IMF Michael Mussa (2002).

⁷ In theory, a significant deflation of domestic non-tradable goods prices could have been an alternative way to correct the RER misalignment. It is well documented, however, that prices are downward inflexible and even if they were not, the also well known debt-deflation effect may have undermined this adjustment mechanism.



premium thus was a result of the increasing perception that the currency board would be abandoned and that NER adjustment would imply a highly negative balance-sheet effect that would most likely lead to a default of public and private debts, the bankruptcy of many financial institutions and a severe economic contraction.

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