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The Argentine Convertibility*

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Missed Expectations: The Argentine Convertibility*

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Abstract: This paper studies the process that led to the Argentine crisis. The crisis is understood as a major disappointment of previous expectations, indicated by widespread insolvencies and abrupt declines in consumption. The analysis concentrates on the sequence of public and private decisions, and the varying perceptions and policy incentives that motivated them. In the nineties Argentina searched for a new growth trend. During much of the period, the behavior of agents seemed to be based on the anticipation that current and future incomes could sustain a value of domestic spending much higher than in the past. The government was motivated to reinforce those expectations, for signaling and political economy reasons. The convertibility monetary regime not only provided a very visible nominal anchor, but also operated as a basic framework for financial contracts, mostly denominated in dollars. Dollar contracting implicitly presumed that the dollar value of incomes would support the servicing of debts. Despite precautionary measures, the reliance on the sustainability of the real exchange rate increased over time. In the late nineties exports stopped rising and the foreign supply of credit tightened. Facing these constraints, the economy contracted and the solvency of the government was put into question. The financial system was vulnerable both in the event of devaluation and that of a (large) deflation-cum-adjustment. As was implicit in its design and management, convertibility proved to have very large exit costs.

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1. Introduction

The Argentine experiment with a hard peg (convertibility) ended in a deep economic and political crisis. In this paper we study the process that led to that outcome. As other salient episodes, this one is generating an active quest for lessons of analytical or practical interest. This activity indicates that some useful knowledge is to be gained by studying the experience after the fact. Analysts and agents must then be engaged in learning, and hence cannot be presumed to know precisely (and, even more, to have known at the time) the features of the forces that drove the evolution of the economy. We concentrate on the sequence of public and private decisions, as resulted from the particular perceptions formed at each moment and from the specific setup of economic institutions and policy-making games. In this regard, the crisis appears as both an institutional breakdown and as an event that disappointed numerous expectations and beliefs.

Two arguments are often encountered in the discussion of the Argentine case: that fiscal policies were inconsistent with the fixed exchange rate (implying that the political system was incapable of adjusting itself to the discipline of budget constraints and let the public debt grow along an explosive path), and that the convertibility regime was such that it induced an overvaluation of the currency, and thus was bound to end in a collapse. There are elements of validity in both arguments, but they are incomplete, and cannot provide by themselves the full picture.

A government that declares default on its debt has obviously spent beyond its means. In retrospect, public expenditures (especially when measured in dollar terms) appear to have been excessive. However, the same holds for private spending. The persistence of fiscal deficits throughout a period of high domestic demand and real activity point to a lack of policy consistency, and indicates that fiscal policies did not take precautions against adverse disturbances. But, if the decade of the nineties appears now as a long cyclical phase of transitorily high real incomes, it does not seem to have been perceived as such at the time. Not only the government, but asset holders and the public in general acted during a good part of the decade as if the evolution of the economy (and the fiscal situation, in particular) need not cause big concerns. The Argentine government had quite fluid access to credit markets during most of the decade indicating that, although the scenario of default was always assigned a non-negligible probability, its occurrence was far from taken as a foregone conclusion. The behavior of private spending did not correspond to the picture of agents who recognized that the public sector was overextended and reacted in “Ricardian” anticipation of an adjustment to come.

When the real exchange rate jumps as it did in Argentina at the start of 2002 (more than 150% in the lapse of few months) it may seem natural to conclude that the currency was overvalued. But it remains to be explained why the exchange rate was under no pressure for a good part of the whole decade, and why many agents appear to have acted during extended periods as if they believed that convertibility was a durable and robust framework for their decisions. In the early nineties, private consumption increased sharply, and remained high until the end of the decade. Investment also rose strongly, and much of it was destined to the production of non-traded goods. While expectations were probably quite heterogeneous, this pattern seems to correspond to a perception that the level of real income and the dollar price of domestic goods had risen permanently.

In summary, a coherent explanation of the Argentine crisis should take into account the interaction between wealth perceptions and the decisions of government and private agents. The dynamics of both fiscal accounts and the real exchange rate have to be placed in the context of the expectations that domestic and foreign agents had about the future path of the economy. The policy reforms adopted during the nineties had a critical role in the formation of those expectations. Among them, the role of the monetary system of convertibility went much beyond its function as nominal anchor.

In the nineties, Argentina searched for a new growth trend. Over time, more and more contractual promises were predicated on the presumption that the economy could sustain real growth under convertibility. In an economy still haunted by credibility problems, when faced with macro disturbances, the authorities responded by doubling the commitment to the fixed exchange rate, and implicitly supported the dollarization of contracts. The government promised that “one peso equals one dollar” and that its bonds would be punctually repaid in dollars; privatized utilities had their prices set in dollars, banks promised to return deposits in dollars, borrowers signed large volumes of promises denominated in dollars. Those commitments required that the economy could produce sufficient incomes in terms of dollars. The system could work well in an expansion, and showed the capacity to absorb quite large financial shocks. However, the seemingly unconditional promises were contingent on the realization of a good set of productivity effects, international conditions for exports, consistent fiscal policies and a willingness of foreign lenders to supply credit to an economy with growth prospects. A large shock to those expectations, as in fact took place, hit an economy which was unprepared to make a significant adjustment of the dollar value of spending and incomes without putting into question the whole contractual framework.

The argument that large swings in aggregate spending and real activity can result from wealth misperceptions has been made in the past with reference to Latin American crises of the early eighties.¹ Wealth perceptions can change for different reasons. The value of income streams and the sustainable levels of spending may be modified by external shocks of “real” or financial nature (like the sudden stops in foreign financing due to idiosyncratic behavior of credit markets stressed by Calvo et al. (2002)) But, in an economy where the “fundamental” configuration of incentives and opportunities can change substantially over short periods, agents have a more general problem in projecting a growth trend in their incomes. This, we believe, was a relevant issue in the Argentine economy during the nineties. Here, agents could entertain the belief that an economy with considerable resources, after reforming its policies and solving such a major and long-standing problem as high inflation, would be able to allow its residents to have a much higher level of spending, on the basis of improved growth prospects. Moreover, the contractual system developed under convertibility was consistent with those beliefs, since the use of the dollar as a unit of denomination presumed that incomes could be maintained in terms of that unit. Nevertheless, it was vulnerable to macroeconomic contingencies such as large movements in the real exchange rate. On the way towards the end of convertibility, strong doubts developed about the solvency of large sets of agents. The collapse of the monetary regime was associated with a widespread breakdown of contracts, which included the destruction of the financial system, and not only the bankruptcy of the government.

The relevance of the contractual setup in the Argentine case derives partially from the “original sin” of a government that issues debt in foreign currencies (Hausmann and Panizza (2002)), but it has a broader nature. Under convertibility, the dollarization of most financial transactions between private residents made the solvency of large groups of individuals contingent on the real exchange rate. This meant that the perceived exit costs of the fixed exchange rate were extremely high: it was this financial effect which induced such a strong “fear to float”, so that governments (of different parties) were so reluctant to abandon convertibility even when the economy was experiencing strong disturbances. The dollarization of contracts also was a major factor in the trauma that resulted in the actual exit from convertibility.

¹ Barandarian (1988) and Heymann (1984) made the point, respectively, for the Chilean and Argentine episodes of the time.

2. Wealth Perceptions and Economic Decisions

In the eighties, Argentine residents had to cope with the inconveniences and costs brought about by price instability. One of its consequences (jointly with the debt overhang and the large budget deficits) was the very scarce supply of financing to the private sector, and the almost total absence of credit with maturities extending more than a few weeks. In hyperinflation, even everyday transactions were disrupted. This induced a receptive mood for large-scale reforms in economic policies. Such reforms did take place in the nineties, with convertibility as their centerpiece. The reforms and the renewed international willingness to supply credit represented a drastic change in the economic environment. This modified the prospects and opportunities of most agents, but in ways that were not easy to specify. The questions to be addressed in forming expectations were far from trivial: How strong would be the effects of price stabilization on productivity and investment? How would the economy respond to trade liberalization, privatization and changes in taxes and regulatory policies? What outside shocks may the economy be subject to, and what was their likely impact? What were the chances that convertibility would be maintained, and what were the conditions under which it would be abandoned? What would the economy be like in case of an exit from convertibility? Even in retrospect, it seems hard to specify well-defined assessments of the likelihood of different scenarios and their characteristics.

It was quickly apparent that stabilization and reforms came together with a substantial increase in output and a real appreciation. Agents had to establish (implicitly or explicitly) how they viewed the expansion, in a range that could go between considering the recovery of real (and dollar-valued) incomes as a reversible cyclical episode, or treating it as the start of a trend of persistent growth. The gyrations of the Argentine economy in the past offered no definite “focal point” to guide expectations. At the same time, the mood of the times (both in the country and abroad) seemed to promote optimism about the potential aggregate effects of the reforms.² The expansionary expectations could be self-reinforcing for a while if agents interpreted positively the observed increases in output and aggregate demand (Heymann and Sanguinetti (1998, 2000)). In any case, the problem of defining and projecting “permanent incomes” was posed throughout the period; at some moments it seemed to fade in the background, and emerged prominently in times of crisis. Indeed, the identification of trends in Argentina has been traditionally difficult, and particularly so during the nineties (cf. Kydland and Zarazaga (2002)).

The dollar value of GDP had very large oscillations in Argentina. Over the lapse of about three decades, the data seem clustered in distinct sets (see the phase diagram in Figure 1), with a group of points corresponding to the seventies and eighties, a short but highly visible “excursion” (up to a maximum above US\$ 15000) around 1980, and a quite tight set of observations for the convertibility period. Standard (H-P) trends calculated with data up to the late nineties and early 2000’s (while they coincide in their sharp contrasts with respect to the estimate made, say, in 1989) point to quite different descriptions of the behavior during convertibility: the line with observations until 1998 trend describes a series with a sizeable growth; the line built with data covering up to 2000 would suggest a gradual convergence to a new level, while the inclusion of the sharply lower observation of 2002 shows a cycle in the nineties, with all the points during convertibility being located well above the trend line.

<Figure 1>

² The prevailing views of the time are well reflected by Lora and Barrera (1997), who estimate that reforms in Latin America had a *permanent* effect on growth of around 2%. Lora and Panizza (2002), review those estimates with updated information, and find a much more modest impact.

The performance of the dollar value of GDP is relevant as a measure of the levels of spending power that agents may have incorporated in their decisions. The dollar value of incomes is of course a critical variable in determining the capacity to serve dollar-denominated debts. Also, in a simple intertemporal model of a small open economy with traded and non-traded goods, the current consumption demand of both goods and the desired capital stock in the production of non-traded goods depend on the perceived level of wealth. Since the real exchange rate is endogenously determined, that price and the demand for consumption and investment are functions of the current and anticipated supply conditions of the goods, the evolution of fiscal policies, and the world interest rate, as incorporated into those wealth perceptions. Given that the non-tradable component of income of the representative agent has its value determined by the value of spending, the present value of the output of traded goods (the “tradable component” of wealth) will have a crucial role in the system, particularly in the determination of the sustainable levels of the consumption of tradable goods and the real exchange rate (see Appendix 1).

In such a framework, a configuration characterized by a sharp increase in consumption, a real appreciation and a rise in investment, particularly directed towards the future production of non-traded goods (Ramos and Martinez (2000)) a real appreciation and a current account deficit, would quite naturally be interpreted as an outcome of the perception of a permanent upward shift in the value of income in terms of traded goods, supported by the expectation of a future growth in the supply of tradables.³ Clearly, this elementary model is too simple to give more than suggestive results, but the picture seems reasonably defined: the qualitative features of the Argentine economy during the early nineties look like outcomes of behavior relying on the anticipation of future productivity effects (which would particularly touch tradable sectors, and generate output growth at a lower real exchange rate), and a fluid supply of foreign credit in the transition. It was as if the expectation of a new growth trend was discounted in the decisions of both private agents and the government, and led to a jump in the dollar value of domestic spending. In order to sustain those decisions, the dollar value of incomes had to be sufficient to maintain spending and to service debts, and that required that a sufficient growth in the output of tradables did materialize before the supply of credit dried up.

While on aggregate the economy was generating positive signals in terms of price stabilization and output growth, there were also important potential sources of uncertainty, given the possibility of outside shocks on trade or financing, and the risk that productivity in traded-goods would not grow sufficiently to validate the levels of spending in dollar terms that had already been attained. Such uncertainties were shared in principle by the government and by private agents, while the latter had to consider also the chance that fiscal policies would not behave consistently. These were motives for precautionary behavior, on the part of spenders and lenders (who had reason to weigh particularly the expected performance in “bad states”, where repayment was likely to become problematic). Agents did in fact make clear distinctions between peso and dollar assets; and the attitudes of voters and politicians showed much dislike for the perspective of a devaluation, indicating that they judged that an exit from convertibility would bring large economic losses. Agents did take actions that provided for the case of shocks. Especially after the experience of the financial disturbance triggered by the Mexican depreciation in late 1994, prudential regulations and the government’s debt management established buffers against swings in the supply of credit that may affect liquidity. The net foreign asset position of the private sector declined, especially due to FDI operations, but private residents accumulated financial assets abroad. However, on the whole, the spending and savings decisions, of the government and the private sector did not reveal much concern for getting “insurance” against the chance that aggregate demand and the prices of non-

³ Other impulses would generate some of the qualitative outcomes in the simple model, but would not fit as easily that configuration (see Heymann (1994)).

tradables had risen too much and may have to adjust sharply downwards at some point. Although the observation is conjectural, it would seem that, once the real exchange rate and the volume of output had reached points such that the dollar value of GDP attained its “typical” size of the nineties (about US\$ 8000 per capita), most agents viewed that as a “permanent” level, subject to fluctuations but not to catastrophic declines.⁴

Between 1990 and 1994, private consumption rose well over 35% in real terms (and its dollar value practically doubled). In the recovery after the 1995 recession, once again consumption increased rapidly, and declined steeply after 1998, so that by 2002 it had fallen to the levels of the early nineties (see Figure 2). The wide swings in the real assets (which seem to have found many people unprepared) and the large ups and downs in the consumption of large groups of individuals are hardly reconcilable with decisions made under foresight: they invalidated widely held beliefs.

<Figure 2>

3. Fiscal Policy and Politics

Budget imbalances have been stressed as major factors of the Argentine crisis (see Mussa, 2002). Indeed, various aspects of fiscal policies were central to the economic and political dynamics in the period of convertibility. Both changing perceptions and the political and institutional details underlying the policymaking process were relevant for fiscal behavior. In the end, the outcome was quite negative: the country could neither enjoy the benefits of countercyclical policies, nor did it gain the reputation for fiscal soundness which could have improved the perceptions of sustainability at key times.

The introduction of convertibility and various policy reforms did introduce some fundamental changes in the public sector. The relationship of the central government to public enterprises, which had been a source of soft budget constraints, was fundamentally altered by privatization, which also provided an important source of funding at some points in the decade. The tight monetary rule had among its main purposes that of forcing the government to do without the inflation tax. In fact, the fiscal deficit was noticeably lower than in the previous decades.

<Figure 3>

However, with the possibility of accessing bond markets (after a long period of completely restricted financing), and lacking sizeable seignorage revenues, the government had to deal with its budget constraint in quite different ways than in the past. Instead of focusing on day-to-day management, fiscal decisions came to be predicated on longer-term prospects, as viewed by the authorities and financial operators. Fluctuations in economic activity created trade-offs between trying to apply standard countercyclical measures and adopting tighter policies in order to ease tensions in credit markets. At the same time, the unavailability of monetary and exchange rate

⁴ In this regard, the variability of the GDP in dollar (per capita) terms in Argentina during the period of convertibility was substantially lower than that of other “emerging economies”, in Latin America and Asia. This was associated, of course, to the constancy of the exchange rate with the dollar but, in any case, it meant that if the estimation of permanent incomes had some “adaptive” element, the evidence would have tended to confirm the belief that the observed values were not far from normal. It is clear that a small variability (actual and expected) of dollar incomes was functional with a dollarized financial system. However, there remained the fundamental question of whether that small variability was compatible with the required adjustments to the shocks acting on the economy.

policy instruments imposed new demands upon fiscal policies, concerning competitiveness and the generation of employment.

Varying beliefs about the prospects of the economy influenced decisions over time. The large increase in government spending in the early nineties probably responded to a view by the authorities that, overall, the growth in revenues was well supported by a trend in economic activity and a sustainable rise in non-traded goods prices, all of which would allow the issuing of debt to instrument previously unrecognized liabilities (as those with pensioners) and the transfer of social security contributions to private funds through the pension reform. In addition, the government may have wished to signal that it had strong confidence in the success of its policies, in order to induce the private sector to react to the growth opportunities that the authorities perceived existed in the economy (see Appendix 2).

In the second part of the nineties, while the public debt kept rising (in part, due to successive reductions in social security taxes, as unemployment became a prominent issue), primary spending increased in absolute terms but, as long as real activity expanded, it declined as a proportion of GDP, and the evolution of public finances was not a big cause of alarm for the government. Fiscal adjustment only became an everyday concern when the economy had been already in recession for some time and the creditworthiness of the government had come under question. At this point, cutting public expenditures (or raising taxes, for that matter) had to overcome the resistance of a population increasingly worried about unemployment, income inequalities and political corruption. The perception that the economy had reached a critical state could perhaps induce the public to resign itself to adjustments, but it did not help in fostering expectations of an improved fiscal position. This tension was one of the features of the last phase of the crisis.

During the period of convertibility, the public sector accumulated deficits, although these were not particularly large as proportion of GDP until revenues collapsed. However, the government had established a level of spending and had issued bonds denominated in dollars so that its solvency required a continued increase in the dollar value of receipts, anticipated by financial operators (so as to induce lending at moderate rates.) A growing economy may have provided sustainability for a prudent fiscal policy. But no “insurance” (either in the form of surpluses in the expansion or in the denomination of debts) had been taken against the chance that the dollar value of incomes and tax revenues would fall considerably (and, possibly, trigger the realization of contingent liabilities originating in the financial system, if the solvency of private debtors was also impaired). When this danger was present, decreasing receipts and much higher interest rates compounded the fiscal problem, until devaluation and default finally made insolvency explicit.

The end of convertibility was a dramatic episode of a history of economic and political instability. Price stabilization allowed implementing budgeting practices as was impossible under high inflation. However, problems in the functioning of the political system continued to influence the design and the implementation of policies. Traditionally, the Argentine polity has been unable to strike the intertemporal political agreements that are necessary to instrument effective public policies in a cooperative manner (Spiller and Tommasi, 2001). Key actors (corporatist, partisan, institutional) have tended to behave opportunistically and non-cooperatively when dealing with one another. Areas such as the federal fiscal system revealed in a particularly salient way the non-cooperative nature of interactions and the inability to sustain political agreements. This generated policy inconsistencies and variability⁵. Conversely, the often large changes in economic conditions created frequent and tough dilemmas to policies, and led to sudden reversals in “critical” instances.

⁵ Spiller and Tommasi (2001) document policy volatility in Argentina.; in an index of macroeconomic policy volatility, the country occupies the seventh highest rank in a sample of 106.

In such a context, political actors tended to behave myopically, with sporadic attempts at containing instability by adopting rigid policy mechanisms. The breakdown of such attempts was an important element in determining the intensity of policy cycles. In Argentina, neither discretion nor policy rigidity proved successful.

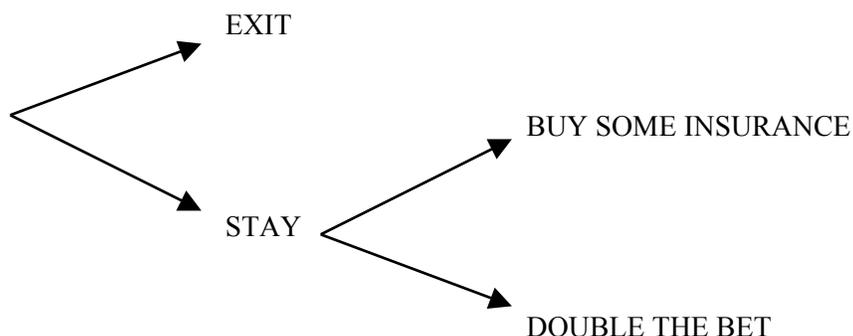
The lack of sustainable compromises among the key politico–institutional actors hindered the development of credible alternatives to the rigid monetary regime of the currency board. Judicial, fiscal, monetary or other institutions that may have alleviated the exchange rate-regime from assuming the burden of providing support to the contractual system were clearly not present at the beginning, and were not developed over time. Even though attempts were made to establish some fiscal procedures, some federal agreements, some monetary institutions, and to improve the workings of the judicial system, all of that proved to be ink on paper when put to the test: fiscal responsibility laws, fiscal pacts, central bank independence, deposit guarantees, were ignored at crucial times. In turn, this was determined in part by the absence of monetary instruments for the purposes of dealing with shocks, which indirectly burdened other policies: the drastic changes in the economic performance put legislative agreements under strong stress. Once more, economic instability and broken “policy promises” reinforced one another in an explosive spiral.

The shortcomings of the policy decision processes (which often relied on the personal influence of particular individuals in the government) became salient at particular moments such as the crisis of 2001/2002. While the crisis would have been extremely difficult to handle in any case, the relevant actors (including international agents like the IMF) were unable to establish a precise policy course. At the same time, the urgent problems which emerged in rapid succession frequently led executive authorities to take measures of the greater importance “on the spot” (sometimes through “emergency decrees”), without going through a process of detailed discussion and legislative decision, which they judged unacceptably slow and uncertain. On its side, Parliament voted laws that questioned central elements of economic policies, and menaced to create unsolvable dilemmas. The Judiciary branch (itself without a reputation for impartiality) often reversed government decisions. The outcome was that policies did not follow a definite direction, while being perceived as arbitrary and lacking legitimacy, causing further damage in an already difficult situation.

4. Maintaining and Managing Convertibility: Policy Choices

Convertibility lasted for over ten years, a very long period for the standards of Argentine policymaking. Its collapse was associated with one of the deepest economic crises in the country’s history. Both these characteristics of the regime deserve attention. They were linked to the high exit costs of the system, which made it robust in the event of not-too-large shocks and, at the same time implied that, if and when the regime was abandoned, it had to be in a very traumatic way and in circumstances where the economy was subject to a very strong disturbance. The dramatic end of convertibility was in correspondence with the high exit costs that were determined by initial design and by the dynamics of economic and policy choices throughout the decade.

In order to analyze the dynamics of policy choices during the period of convertibility, it seems useful to refer to a stylized decision tree that characterizes in a very schematic manner the decision faced by Argentine policymakers at key nodes after the introduction of the regime.

Figure 4: Schematic policy decision tree under Convertibility

On several occasions, the option of exiting convertibility was on the table, recommended by some (mostly foreign) analysts, and feared by economic agents in the country. Given a choice of not exiting convertibility, in turn, complementary policy measures could be geared towards providing some insurance against the worst possible scenarios (or allowing some room for “exit clauses” in the event of shocks), or alternatively, they could attempt to signal an even stronger commitment (by raising exit costs).⁶ The upper branches of the tree would be associated with precautionary behavior, while the lower ones would be riskier ones that opted for signaling “toughness” in maintaining the monetary rule. Even though measures to buffer the economy against some bad states (originating in financial shocks) were indeed adopted by strengthening prudential regulations on banks, especially after the Mexican crisis, on the whole, most of the policy choices made throughout the decade took the “lower branch” of the tree, and contributed to raise the difficulty of abandoning the fixed exchange rate. These measures had an effect on expectations; however, in the end it became clear that the state of the economy, and not only perceptions the government’s “type” condition credibility (see Drazen and Masson, 1994; Drazen, 2000).

The costs of leaving convertibility, a summary of a very complex tree opening up in case of exit, are a key “state variable” in the analysis. Those costs were not simply determined by the institutional design of the monetary system, since they depended on the evolution of policy decisions and the behavior of private agents, particularly regarding the denomination of contracts. However, it may be useful to consider what criteria may have determined the selection of the size of initial exit costs (as in the models of rules with escape clauses *à la* Flood and Isard, 1989). It is a standard result that the desired exit cost would vary positively with the magnitude of the (time-inconsistency) distortion which provides the motivation for imposing the rule, and negatively with the typical intensity of the shocks which may hit the economy and call for flexibility of the variable that the rule fixed (here, the exchange rate). In the Argentine case, the costs of discretion were very salient, but in 1991 the perception of potential shocks was probably not as vivid; also, the benefits of a tight rule were likely to be realized soon, while the potential risks were more of a medium-term nature. These considerations may have weighed toward the adoption of a tight rule.

After convertibility was launched, private agents had to find out how the economy would function under new conditions; the same applied to policymakers, who had incentives to behave strategically in order to influence the beliefs of the public. In this respect, reinforcing the commitment to the fixed exchange rate could be seen as a signal that the authorities had strong confidence in their policies. Also, having introduced a tight rule, “option value” arguments (Dixit and Pindyck, 1994)

⁶ In this context, the dollarization proposals would count as particularly strong forms of raising the bet, by exiting convertibility “in the other direction”.

may have implicitly influenced decisions, since exit was clearly an irreversible action. In the event of a shock, sticking to the system left open the chance of managing the disturbance without a policy reversal, with definite benefits for the government.

The arguments presented so far would apply even if policy was decided by (imperfectly informed) benevolent planners. But the asymmetric information policy games observed in Argentina were at times (and still are) much more deeply political, with politicians trying to convey messages about the connection between policies and outcomes in order to affect people's beliefs about their competence and intentions. At some key moments, such as the 1995 and 1999 electoral campaigns, those considerations (and their interactions with citizens' beliefs) also tilted the balance towards the narrow corridor of an all-or-nothing bet on convertibility.

5. Events and decisions

a. The entry node

In 1989 and 1990, price instability reached extreme proportions in several bursts of hyperinflation. Hyperinflation gave saliency to the costs that monetary discretion and the use and abuse of the inflation tax had imposed on the economy. Price stabilization was perceived (by the government and by the public) as a basic priority. The painful and fragile disinflation of 1990, under a dirty float (when prices kept rising rapidly, with high interest rates and a depressed real activity) had created a demand for a more direct and effective move towards stabilization, especially when a sudden surge in the demand for foreign exchange had once again induced a large depreciation of the domestic currency and a rise in inflation rates in the first months of 1991. In this context, the authorities choose to establish a tight peg to the dollar with full convertibility at the start of April 1991.

Fixing the exchange rate implies well-known policy dilemmas (see, for example, Calvo and Vegh 1993, and Guidotti and Vegh, 1999). The commitment to an exchange rate fixing can vary by degrees: it can range from a de facto peg hardly distinguishable from a very dirty float to an institutional provision completely depriving policy managers of discretion. The authorities have to decide whether to fix the exchange rate 'for the time being' or to commit themselves to enforce a pre-set parity indefinitely. Pegging as a transitory measure causes "peso problems" (Krasker, 1980), as expectations incorporate the chance that the anchor may be lifted even with a "moderate" disturbance. An indefinite promise of enforcing a hard peg, on the other hand, trusts that inflation will come down to international levels soon enough and that the real exchange rate will remain at a value that proves sustainable.

On balance, the incentives and perceptions of the Argentine government in 1991 weighed strongly on the side of defining a tight rule. However, it was conceivable that the convertibility system may have been used as a transitory instrument to stabilize prices, and replaced after a few years, either because economic policies had gained strength and reputation allowing a move to a more flexible system without losing control over inflation, or because of a shock. Neither one occurred. Confidence in policy-making capacities did not develop much, if at all; rather, it was the persistence of convertibility which, serving as a "fixed point" within the set of policies, made up for the low reputation of the policymaking system. Thus, instead of diminishing, the importance of convertibility as a basic economic institution grew over time.

In any event, the authorities introduced the new system as a major reform in economic institutions, such that in practice there would be no more discretion in monetary matters and that the central bank would definitely stop offering credit to the government. The announcement of the rule did act as a definite signal for private agents, and induced rapid reactions. However, beyond the fact that

convertibility was established by a parliamentary act (as was some time later the norm which reformed the Central Bank charter and gave it independence from the Executive), and required another law to be modified, it remained to be learned to what extent the system was meant to be durable, that is, what circumstances would trigger an “escape clause”, and how probable those circumstances were (Fanelli and Heymann, 2002).

b. The boom years: doubling the bet

Overall, the public responded strongly to the change in monetary policies, in a way that revealed (particularly in the willingness to supply and demand credit) a considerable change in expectations about the economy’s real performance. Private spending and real output rose rapidly. However, it was unclear whether the observed evolution indicated a cyclical recovery or the start of a trend. In this regard, the government attributed much importance to the conditions that would stimulate investment.⁷ Clearly, a fluid supply of credit was one of them. Given the experience of recent years, there could be reasonable doubts about the possibility of developing soon a thick financial market with contracts denominated in domestic units (even more so when the convertibility law had banned formal indexing). Thus, it was quite natural to perceive that either the economy would have a dollarized financial system, or credit would remain restricted. In this setting, the tradeoff could be identified as risky growth (to the extent that it was recognized that the dollar value of incomes was subject to the possibility of large unexpected movements) or slow growth. In the event, the authorities viewed the increase in the volume of dollar deposits and loans as a very important mean to mobilize resources (and, particularly, foreign currency balances hoarded by residents in periods of instability) for investment purposes, and they did not show much concern for the possibility of mismatches between commitments and repayment capacities. This seemed consistent with an attitude of trying to induce decisions that would generate economic growth, while leaving as a secondary consideration the search for “insurance” against negative shocks (see Appendix 2).

As the trade balance rapidly switched from a large surplus to a deficit and domestic prices rose relative to the exchange rate, the future of convertibility was a matter of discussion, also in government circles.⁸ This generated uncertainty among asset holders. Also, by mid 1992, the extraordinary boom in stock prices (which had multiplied by around a factor of three in a few months) was sharply reversed by large falls. The growth in real activity decelerated noticeably (but transitorily) in the second half of that year. Meanwhile, financial markets showed signs of doubts about the fixed exchange rate: interest rates went up, the increase in peso deposits was interrupted, while dollar deposits kept rising and foreign reserves stopped growing (with an actual fall in a short episode in November). This behavior did not amount to a full-scale attack, but it did pose in a concrete way the question of whether convertibility was to be considered as a more or less permanent system or as a transitory instrument for disinflation. In the event, the government chose to signal a firm commitment to the fixed exchange rate, through financial measures which, although not too strong by themselves, managed to convey quite clearly the message that, when tested, the policy response was to stress the credibility of the monetary rule and the currency’s definite link to

⁷ The 1992 annual report of the Ministry of the Economy stated: “The productive recovery was driven by... consumption and an increased availability of credit... The growth observed in 1991 and 1992 may be the beginning of the country’s economic takeoff. But several decades of stagnation have deteriorated the productive infrastructure. In those conditions, investment is the basic tool for growth” (Ministerio de Economía, 1992, pg. 2)

⁸ The possibility of replacing (at some undefined moment) the fixed exchange rate with the dollar with a peg to a basket of currencies was mentioned by the finance minister in an academic meeting.

the dollar.⁹ Here and latter, when the robustness of convertibility was questioned, the authorities chose to double the bet on convertibility.

Once the government made clear that it remained strongly committed to maintain the parity of the peso with the dollar, the question, at least in retrospect, was how to build precautions against the event of a significant increase in the sustainable real exchange rate. This required that the government could be perceived as solvent even in the very bad states of the world (Keynes, 1924).

The fiscal situation changed rapidly as a result of policy measures and macroeconomic developments. The government showed much concern with raising tax collection, and revenues did rise sharply. Nevertheless, the government's primary expenditure as a proportion of GDP increased noticeably during the first part of decade (see Figure 5). This increase had both price and quantity components. Price effects were important, as the implicit deflator of public consumption rose much more than the GDP deflator. Using these indices as the deflators for the corresponding nominal variables, primary spending shows a smaller growth than GDP (see Figure 6). This negative "terms of trade" effect for the public sector had a macroeconomic element, given the real appreciation and the increase in real wages; throughout the economy; another factor that increased the unitary price of public spending was the adjustment in the value of pensions to make them conform to the legislated amounts.

<Figure 5>

<Figure 6>

The reform of the social security system (sanctioned in 1993 and implemented in 1994) had big effects over time. It created a dual system for the personal contributions of active workers, who could opt to remain in the public segment (although were induced not to do so, especially the young) or move to the newly created segment operated by pension funds under a funded system. The government would still collect payroll taxes from employers; it remained responsible for the payment of existing pensions, and was committed to complement the pensions of future retirees in the pension fund segment. A related measure increased the retirement age. One of the objectives of the new system was to channel long run financing to the private sector. However, in order to generate an aggregate change in the allocation of credit, the government had to allow the crowding-in effect by absorbing at least part of the drop in revenues which would now go to the pension funds (representing an order of magnitude of 1.5% of GDP) without raising its borrowing requirements. For this, the authorities counted on positive effects on the government's social security receipts from stronger incentives to contribute and from economic growth itself. To the extent that the implementation of the new system proved feasible over time, the public sector was reducing future liabilities; however, these liabilities under the old regime were not contractually binding in definite amounts, while the bonds that the government would now sell to "finance the transition" represented (mostly dollar denominated) fixed commitments (see Hausmann and Velasco, 2002). In this sense, the reform hardened the government's intertemporal budget constraint, and made it even more dependent on the evolution of the real exchange rate. This was certainly at odds with the needs of "insurance" of the convertibility system.

The fiscal performance of the period showed a sharp reduction in budget deficits compared with previous years. The authorities did not perceive the rapid increase in tax revenues and in the value

⁹ Other policies adopted in the first years of convertibility also tended to reinforce dollarization. For example, the government renegotiated price-setting regulatory schemes with privatized companies, replacing a CPI-based price cap with one denominated in dollars and adjustable with the US price level.

of primary spending as cyclical effects; rather, in their statements and in their behavior, they indicated their anticipation that growth would continue at a fast pace. In any case, during the expansion, both the public sector and private agents made decisions which implied strong bets on the sustainability of the real exchange rate and on a rising trend in real output, while narrowing their options for the case that future performance would not fulfill those expectations.

c. Surviving Tequila under convertibility

With lower tax receipts after the pension system reform, and a substantial current account deficit, the economy had become more vulnerable to shocks. It was affected by the increase in rates of interest in the US and, by the end of 1994 it suffered a large financial disturbance after the Mexican devaluation. That event triggered a sharp fall in the price of Argentine bonds, a marked drop in Central Bank reserves and withdrawals of deposits from the banks that soon reached the intensity of a run. At the same time, the convertibility system greatly restricted the possibilities of applying monetary policies for lender of last resort purposes, and it denied the use of the exchange rate to accommodate the excess demand for foreign currencies. In these conditions, the central question was whether the government was willing and able to sustain convertibility.

A financial shock induced by an outside event may have been taken as a chance of replacing the fixed exchange rate system without too much reputational loss. However, there were also strong incentives not to exit, particularly as the government had been raising the stakes of the game in such a way that it stood to face large costs if it abandoned convertibility, and correspondingly high payoffs if the crisis could be managed without giving it up. The public (and financial operators) understood that the crisis had an external origin, but they also understood that the shock would test the strength or weakness of the economy, and the behavior of a polity still haunted by severe credibility problems. It was likely that ending convertibility would have signaled that the economy was weak and that the “stabilization game” was over, with the possibility of inducing a wave of pessimism symmetric with the boost to expectations that the start of the program had generated. Conversely, the government saw that convertibility would have passed a big test of strength if it survived the shock, which would greatly enhance its credibility (as in fact it did). Also, the fresh memory of high inflation and, especially, the large number of people who had contracted dollar debts created a very strong constituency against devaluation.¹⁰ Indeed, the incumbent authorities used as their main electoral argument that they were the ones who had ended hyperinflation and that they constituted the only political force that would maintain convertibility (Starr, 1999). The strategy worked, and led to the re-election of President Menem by a large margin.

In any case, the shock posed urgent economic dilemmas. The government stuck to the tight exchange rate rule, and signaled strongly its commitment to it, but operated actively with a variety of instruments (including some aspects of monetary policy). Domestic policies received a crucial backing with a large and rapidly decided package of multilateral credits. The very important provision of funds at a moment when the future of the financial system was very much in doubt, and the announcement effect of the international assistance were probably essential for the favorable resolution of the crisis (Ganapolsky and Schmuckler, 1998). In addition, international conditions favored the rapid increase in exports, and continued to do so after the financial shock had passed.

¹⁰ A survey made by Centro de Estudios por una Nueva Mayoría in March 1995 (as the financial crisis was in an acute phase) gave the following answers to the question whether Argentina should devalue: No (80%), Yes (5%), Don't Know (15%).

As the government had expected, convertibility came out with a stronger reputation from the shock. The experience added to the credibility of the system as a stabilization device, the perception that it could stand even strong shocks if only political firmness was applied in defending the system. This increased again exit costs, which became even higher later on as the volume of dollarized financial contracts kept growing.

The 1995 episode was driven by a financial shock, in a good external environment for exports. The main lessons that were drawn from it were of a financial nature. Regarding the government's debt management, the government actively moved to lengthen maturities and to issue bonds in advance to the requirements of funds. Financial regulations raised the capital and liquidity requirements of banks. The Central Bank negotiated a contingent credit line from international banks, with the purpose of reinforcing its availability of resources in the event of a shock. These policies were precautions against liquidity problems: they were aimed at creating buffers to be used in case of sudden tightening of the international supply of credit or extemporaneous reductions in the demand for bank deposits. They worked to that effect during the long contractionary phase which started in 1998, until this came to be perceived as a widespread solvency crisis: at this point, financial markets operated as large amplifiers of the disturbance.

Meanwhile, the recovery from the 1995 shock and recession led to a phase of renewed optimism about the economy's growth capacity, although the persistence of high unemployment and the widening of income inequalities were matters of public concern (in fact, by the late 1990's, only the households in the highest brackets of the distribution had real per capita incomes higher than at mid-1994). This aggregate expansion had different characteristics than the one of the early nineties. Internal prices practically stopped rising and, in fact, the bilateral real exchange rate with the dollar gradually increased. Exports (mostly, their quantity) rose very fast, especially (but not only) to Brazil. Investment in machinery and equipment also increased rapidly. The current account deficit was widely interpreted as an element of the growth process. International investors joined actively in the optimistic mood, not only by increasing their demand for Argentine bonds, but also through the large flows of FDI which entered the country in those years, into a wide range of sectors (services, finance, manufacturing, primary activities.) The government did not seem worried about the evolution of the economy, especially when the Asian crisis of 1997 did not produce very noticeable effects, apart from a short impact on financial markets.¹¹

However, by the end of the expansion in 1998, the debts of the government and the private sector were quite higher than some years before. The question of how to manage decisions so as to avoid a solvency problem was already there. Increasing tax revenues had to come mainly from growth in output, which could not be based on persistently large current account deficits, and therefore required a strong upward trend in exports. In these circumstances, the shocks on exports (lower prices, reduced demand from Brazil, an appreciated dollar) touched the economy at a particularly vulnerable point. If the expectation that exports were to continue growing could not be maintained, sustainability of the dollar value of incomes would come into doubt, and with it, the ability of the government to service its mostly dollar-denominated debts; ultimately, the strength of the financial system itself would become endangered. There was a visible tension between fiscal and external

¹¹ "The solidity of the fundamentals of the Argentine economy, and the policies which were carried out, including the reforms introduced since 1995 to strengthen the financial system, encapsulated the effects of the crisis exclusively in capital markets.... In the financial system, the volume of deposits and loans kept increasing, and the most negative consequences were transitory increases in interest rates, a light fall in peso deposits and a transitory drop in international reserves. The uncertainty in financial markets was not transmitted to the real economy, since production and investment continued to rise" (Ministerio de Economía, 1997, p. 7).

adjustments.¹² This tension, in an economy that had been growing rapidly but where unemployment had remained very high, caused increasingly difficult dilemmas in the following years.

d. Recession and collapse: no way out

By the end of 1998, unit export prices were 20% lower than at their peaks about two years earlier, and had gone back to the levels of the first part of the decade¹³. The demand from Brazil had stagnated, and the process that led to the depreciation of the Real in early 1999 was under way. The economy was receiving a substantial real shock that contributed to the stagnation in the value of exports in the following years (see Figure 7). At the same time, the Russian debt crisis had a strong effect on Argentina credit markets; after the tension eased somewhat, the Brazilian devaluation in early 1999 induced another steep rise in the yield on Argentine bonds.

<Figure 7>

The government reacted to the financial shocks by trying to “differentiate” the economy from those of the countries in crisis, and insisting on the strength of the fiscal and financial positions. This aimed at providing reassurances to financial operators, hoping to reduce the level of “country risk”. In this context, proposals to dollarize were widely discussed: the arguments to that effect pointed out that there was a correlation between sovereign debt spread and the peso-dollar interest rate differentials, and tried to infer that devaluation risk drove those changes. In that view, the problem with the monetary system was the persistence of an implicit exit clause, not insufficient flexibility to respond to real shocks: the appropriate action was to signal that there were additional institutional guarantees against policymakers with misguided opinions or biased incentives trying to tamper with monetary policies. But dollarization did not find significant international support and, in any case, it could not restore export growth or solve the fiscal problems if the economy stagnated or went into a more serious recession for more fundamental economic reasons than fear of an “arbitrary” policy reversal.

The basic issue remained the probable evolution of prospects of the value of aggregate output and incomes in terms of the dollar (as the main denominator of contracts). Those prospects depended indeed on fiscal prudence, through its influence on interest rates, but relied especially on the behavior of exports and traded-goods production in general. A sufficiently strong performance of exports could allow maintaining the current account and the fiscal balance within manageable bounds at levels of real activity and prices which (although probably lower than the trends projected some time before) would not cause much stress on the repayment of debts. Otherwise, there was a risk of a spiral of adjustments in private and public spending (see Appendix 1) which, quite apart from the matter of price flexibility, could result in a debt deflation process that may eventually endanger the financial system and convertibility itself.

Even though the shocks on trade, if persistent, increased the sustainable real exchange rate, a preventive devaluation (against a “worst case” crisis scenario) was not a concrete policy option,

¹² Elementary “arithmetical” exercises for the accounts of the national government and the balance of payments starting from actual data for 1998, suggest that a feasible path satisfying external and fiscal constraints required (in addition to fiscal restraint and sufficient supply of credit), a considerable increase in exports and, possibly, a substantial slowdown for some time in aggregate domestic spending, but within limits that would avoid causing too much pressure on public finances.

¹³ It should be noted here that, in an economy with dollarized debts, a “neutral deflation” of export and import prices (i.e. one which does not modify the terms of trade) can have strong real effects, since it reduces the equilibrium price level in dollar terms and, therefore, it causes a fall in the wealth of debtors relative to their liabilities.

since it meant breaking a highly valued policy commitment, and facing agonizing choices on how to handle dollar-denominated contracts. In fact, during the Presidential campaign of 1999, the maintenance of convertibility was once again one of the principal electoral arguments. Public opinion seemed to demand clear changes in political mores and more attention to unemployment and social issues, but suggestions that the exchange rate system could be put under question caused fear and visible opposition.¹⁴

Fiscal policies (probably influenced by electoral considerations) appeared to operate as if there was no urgent need for adjustment. In 1999, primary spending rose in absolute terms (at the national level and in the provinces), and sharply as a fraction of GDP. The authorities implemented some expansionary measures, like a subsidy scheme to stimulate purchases of new cars. Fiscal revenues declined: once again, lower social security taxes were an important factor (in part, due to reductions in rates). The consolidated budget deficit jumped to 3% of GDP (or almost 4% without considering privatization revenues).

By the end of 1999, real output and consumption showed a rebound, and the possibility that the recession had ended received much attention. However, the deficit in the current account indicated that there could be a tight constraint for a recovery without a renewed increase in exports, while government finances looked far from balanced. Both the general public and financial operators waited for signals from the government that was taking office in December 1999. The “markets” seemed to demand fiscal measures indicating that the new authorities were of a “reliable type”. The public seemed quite prepared to support cuts in wasteful government expenditures, but was not keen on deep adjustments. Everybody seemed to be expecting good news about the economy, that is, signs that growth could restart.

The government anticipated that the effects of productivity gains and improvements in international conditions would permit exports to increase again, which would be compatible with a moderate rise in GDP. The authorities identified the fiscal situation as the main immediate problem.¹⁵ The most salient policy announcement made in the inauguration was a package that raised a variety of taxes, most noticeably the income tax.

Financial markets reacted with calm to these announcements, although influential analysts criticized what they saw as insufficient emphasis on spending cuts. For the public, the tax increase seemed to represent the prelude of more difficult times, perhaps not only because of its direct impacts, but because it could indicate that the economic situation was “worse than expected”. Without yet losing confidence in the financial system (deposits increased, and the banks were active offering loans, on mortgage, particularly), it appeared that people were revising their income prospects downwards. In fact, domestic demand again declined in the first months of 2000, which affected tax revenues. The authorities reacted by announcing spending reductions, including cuts in the higher salaries in the national government. Private expectations seemed to grow more and more sensitive to short-run news, and policy responses influenced by the immediate “market mood” as indicated in the oscillations of country-risk interest spreads.

¹⁴ Support for convertibility remained very strong as the crisis developed. In January 2001, a poll (Graciela Römer & Asociados, 2001) found 67% positive responses (and only 12% negative) to the question: Should the government maintain convertibility?

¹⁵ “The ...public debt has increased to about 45.7% of GDP in 1999. Although this level is not particularly high in comparison with other emergent economies, the rapid rise in recent years is a cause of concern. Even more worrying was the perspective for 2000. Even accepting that nominal GDP would grow by about 5%, the budget deficit of the national government would exceed... 3% of GDP, a totally unacceptable value...” (Ministerio de Economía, Annual Report 1999, p. 7)

As time went on without signs of recovery, future prospects were probably revised downwards, and plans modified consequently. With tax revenues that did not grow, the financing constraint for the government became tighter, and the pressures for additional fiscal retrenchment stronger. But, apart from their direct effect on aggregate spending, new measures of fiscal adjustment in such conditions could be interpreted pessimistically, with secondary effects on revenues. Aggregate demand (and the tax base) depended also on the availability of funds to finance the current account, and thus, on the anticipated performance of exports. In this regard, questions about the robustness of the convertibility system were increasingly posed and, especially in international circles, fixed exchange rates appeared to be regarded with much less favor than in the past (particularly as analysts appeared to interpret the recent experience of Brazil as an indication that devaluation and later floating need not be too traumatic).

At the same time, the political scene was showing increasing complications. In October 2000, the Vice-President resigned (criticizing the government for not doing enough about allegations that Senators had been offered bribes to vote a law reforming the labor legislation). That resignation, and its motives, clearly weakened the ruling coalition, especially when the lack of improvement of social and economic conditions was also eroding the support for the ongoing policies. This was an important shock to expectations.

In the last part of the year, the country risk indices rose substantially, and the future rollover of the public debt appeared problematic. At this point, the government negotiated a package of loans (popularly known as “blindaje”) from the IMF and other IFIs. Clearly, the package implied a bet on a number of conditions: that the announcement of the agreement would produce a sufficient immediate effect on interest rates, that the economy showed signs of recovery without too large current account deficits, and that fiscal policies managed to generate a rising primary surplus, all in such a way that the problems that the economy was facing would turn out to have been transitory financing difficulties. Either agents could identify a concrete “recovery scenario”, or there would be deeper troubles ahead. Over time, the burden of the proof had shifted so that (in contrast with what was observed not so long ago) now the possibility that the Argentine economy “could still work” was the case to be argued under serious questioning. Indeed, there was no solid argument that a sustainable recovery would happen with high probability, especially when the movements in the currencies of major partners still went in the direction of appreciating the peso. However, it was also less than obvious that definitely “nothing could be done” (or “nothing could happen”) to avoid a major collapse and irreversible events like a default, a termination of convertibility, or a forced dollarization. Typical flexibility preference would motivate not precipitating those events. Uncertainty about the effects of major policy moves could also be a factor, as one proposal could act as a strong counterargument against others (see Heymann, 1990). But, above all, neither internally nor abroad there appeared to be a design for a complete plan that could address with some consistency the problems of dealing concretely with a prospect of external and/or fiscal insolvency. The lack of a specific “exit alternative” was a characteristic of the last months of convertibility.

The announcement of the credit package eased financial conditions for a while in the first months of 2001. However, real activity did not recover, and the fiscal performance deviated from the targets of the IMF program. After the resignation of Minister Machinea, a new economic team proposed a program of cuts in government spending, which included reductions in transfers to the provinces and to universities. The plan received support from the IMF and from business groups, but faced a sharp opposition from much of the political system (including cabinet members who resigned, and an important fraction of the government’s coalition), and was received with skepticism by the

public.¹⁶ The measures had unpopular contents and, while they were interpreted as indicating that the economic situation was very serious, that perception was probably not strong enough (and the improvements that the measures may generate not clear enough) to generate sufficient acceptance as “the only possible alternative”. Whether because of the political resistance to the fiscal adjustment, or because of negative expectations about the economy, country risk indices increased while the program was under discussion. Bank deposits dropped noticeably in March 2001: a particularly ominous sign, given that it created a new and strong factor of disturbance, from what had seemed until then a “strong point” in an otherwise much weakened economy.

Eventually, the adjustment plan was abandoned, and Minister Lopez Murphy resigned after a short time in office. This brought back Domingo Cavallo, the original architect of convertibility. After obtaining emergency powers from Congress, the new economic authorities initiated very active fiscal and monetary/financial policies, with multiple objectives, and with the aim of rapidly inducing a recovery. The drain of bank deposits stopped for a while. However, tough dilemmas and difficulties emerged quite soon.

The government generated a small depreciation of the currency for commercial transactions by pegging the exchange rate for those transactions to a dollar-euro basket (as a preliminary to the establishment of a “broadened convertibility”, which would come into effect for all purposes when the two international currencies reached parity with one another). This measure (and disagreements about the management of liquidity requirements of banks) caused a conflict with the president of the Central Bank (who had encouraged dollarization proposals), after which he was made to leave office. The episode induced a negative response in financial circles. Also, contrary to the hope of the authorities, the introduction of the dollar-euro basket was interpreted by the public as a signal of further moves to end convertibility.

The financing of the government was increasingly complicated. With a restricted access to international markets, more debt was sold internally, mostly to banks and pension funds. The persistent increase in the country risk indices (to around 1200 points by late April) indicated both that bondholders were assigning a substantial probability to non-payment, and that the rollover of the debt was problematic. In the event, the government decided to perform a “mega-swap”, exchanging titles with shorter maturities for longer-term bonds. This was meant to push away the risks of a liquidity crisis, but the new issues validated interest rates around 15%, which posed a definite question about solvency.¹⁷ The country-risk indices did not fall much, and increased explosively in July to over 1600 points. Meanwhile, bank deposits were again declining rapidly. At this point, pessimistic expectations had changed into a generalized attitude of running for cover (with due regard for the heterogeneity of reactions). Private capital flight was reaching very high proportions so that, even with a large use of multilateral financing, international reserves dropped considerably. Real activity was now falling precipitously, tax revenues were much lower than one year before, and the sources of market financing for the public sector were closed.

The reaction of the authorities was to announce a “zero deficit” policy: now the stress was put singly on the cash management of the government so as to make monthly payments match monthly receipts. As part of this policy, Congress voted, after much debate, but in haste, a 13% cut in public salaries and pensions above 500 pesos (dollars at the time) per month. With a worsened economic

¹⁶ Two polls conducted by a newspaper (Clarín, March 16 and 17, 2001) gave the following results: What are your expectations about the economic program: Good (25.8%), Fair (16.8%), Bad (57.6%); Do you think that the adjustment will induce economic growth: Yes (30%), No (70%).

¹⁷ Cf. the interpretation of Mussa (2002, p. 67): “...an act of desperation of a debtor who can promise almost anything in the long run in exchange for a relatively modest short-run relief”.

outlook, highly painful measures were taken; but in those conditions (and beyond the “political credibility” of the zero-deficit criterion) the incentives to spend and to lend in the country were much diminished. The authorities turned to the IMF for emergency assistance.

By that time, the “Argentine D’s” (depression, devaluation, default, dollarization, measures on bank deposits...) were the subject of much public discussion (cf. e.g. Eichengreen (2001)). The Argentine government was urged to implement “sustainable” policies; the term was left undefined, although it seemed implicit that it probably encompassed devaluation and/or default on the public debt. However, those statements and opinions were far from specifying a precise policy design. The income the economy could generate had been found to be lower than expected and a large variety of contracts were based on expectations that now seemed very unlikely to be fulfilled. The problems reinforced one another (and had to be addressed simultaneously: “one at a time” would not do). The perspective of default on the public debt raised the “fundamental” fears of depositors (as banks had large holdings of bonds); the run on deposits put convertibility into imminent danger, devaluation would likely cause a collapse of the financial system and aggravate the debt problem of the government and of many firms, the perspective of such a catastrophe prolonged the vertical fall in real activity, so that government revenues were lower and lower....

The economy was in a state where widespread bankruptcies seemed likely: finding a “least cost” response would have required an extraordinary capacity for policy design and an equally extraordinary degree of coordination and willingness to compromise of large sets of agents (lenders and borrowers, taxpayers, public sector workers and pensioners, privatized utilities, banks, business firms, government authorities of different jurisdictions, international institutions) many of which had strong feelings about their rights and about the wrongs of others. The solution appeared in fact to be beyond the grasp of economists of different persuasion (the present authors no doubt included), politicians and international agencies, and certainly far beyond the institutional and political capacities of the country.

Finally, the IMF granted an emergency loan, although quite clearly with much reluctance. This did not generate much relief. It seemed as if the system was overdetermined, and the inconsistencies showed one after the other in rapid succession. The authorities announced their intention to restructure the public debt. While public spending was falling, the rapid drop in revenues led the government to use unorthodox financing means like the issues of “emergency monies” by local jurisdictions. The supply of these instruments was another drop in the bucket of motives for the drain of deposits and the loss of reserves. Finally, faced with a frantic run, the government decided to apply restrictions on the withdrawal of deposits and to introduce exchange controls. This meant in fact suspending convertibility; after some weeks (and several Presidential changes), this was formally terminated. Convertibility was known to have big exit costs; indeed, they proved to be extremely high.

6. Parting Thoughts

During the eighties, the instability of the Argentine economy was such that agents were unwilling to make commitments extending over more than a very short period of time. The set of financial instruments was very poor, and little investment was carried out without a subsidy of some sort. In those circumstances, the economy stagnated. The experience led to a general recognition of the costs that high inflation and the lack of a framework for contractual and investment decisions had inflicted on the economy. Convertibility tried to provide such a framework by restricting monetary policies and validating the widespread use of the dollar as a standard of denomination in domestic transactions. There was a generalized view that such measures were necessary to induce the

emergence of credit markets, and this, in turn, would make it possible to take advantage of large growth possibilities left unexploited in an unfavorable macroeconomic environment. At the same time, a large set of economic reforms were implemented, broadly following what was at the time an international consensus about the policies which would foster growth.

Convertibility was a central element of an attempt to change the trend of the economy. The monetary arrangement formed the basis for an elaborate system of contracts. The “contractual density” (which clearly signified a break with the past in an economy where, say, private mortgage loans had been a rarity for decades) enlarged the consumption and investment opportunities of big sets of agents, and contributed to the growth in economic activity. This generated expectations of further improvements in real income. At the same time, contracts were in fact (although not explicitly) contingent on the realization of a strong enough performance of the economy, that would sustain the expectations of dollar incomes at historically high levels. The seemingly unconditional promises were vulnerable to an overshooting of expectations or to external shocks that would make those incomes much lower than predicted, since they contained no escape clause that could be invoked in the occasion (Hausmann and Velasco (2002), Perry and Servén (2002)). The increasing volume of dollar-denominated contracts indicated the willingness of agents (private and public) to enter into agreements that in fact implied those risks, and simultaneously it operated as a lock-in effect for convertibility, by visibly increasing its exit costs.

Over time, the government became more and more committed to the fixed exchange rate in several ways. Since alternative mechanisms for gaining policy credibility did not arise, strict adherence to the existing monetary rule remained identified with stability and predictability. By issuing large volumes of dollar-denominated bonds, the government made its solvency depend on maintaining the exchange rate. As regulators, the authorities had legally fixed utility prices in dollars, a provision that could hardly be enforced if the real exchange rate increased significantly. The private sector had accumulated large dollar debts and assets, and it was clear that an exit from the “one peso-one dollar” status quo would generate a disturbance of unpredictable (but certainly very strong) consequences. The set of promises seemed such that they either held together or broke together. In order to make them hold, the public sector had to be intertemporally solvent (and perceived as such until it was eventually able to reduce its debt). But this required “external balance” (i.e. meeting the economy’s aggregate budget constraint) at real exchange rates that would not disturb the repayment of debts.

This condition ruled out devaluation and a sizeable (debt) deflation. Avoiding those outcomes was feasible only if the “equilibrium” exchange rate was not too far from the prevailing values. Accordingly, the trend growth of exports had to be high enough (and, again, perceived as high enough) to sustain aggregate domestic demand without running into a foreign financing constraint. Otherwise, if a considerable drop of aggregate spending was required, fiscal adjustment would run against a fall in revenues (in terms of the denominator of assets), and likely contribute to a deflationary spiral, which would become amplified through its financial effects. The fulfillment of contracts relied on the behavior of fiscal policies but, ultimately, it depended on whether international conditions and the actual strength of the effects of productivity and investment on the productive capacity of traded goods, were in correspondence with the evolution of the economy implicit in the expectations entertained by agents when they had decided to lend or to borrow.

In the end, it appeared that the bet on rapid growth would not be successful; as income levels became unsustainable, large sets of debtors (noticeably the government) were seen as unable to service their obligations. There were probably ways to deal with the crisis with less traumatic outcomes than the ones observed. But it is difficult to see how these alternatives could have avoided

a widespread revision of contracts, with all its associated conflicts, legal uncertainties and reputation costs.

Eventually, the disappointment of expectations was of dramatic intensity. It led to poverty levels as the country had not previously known, to deep economic uncertainties in the midst of a big depression (where credit transactions almost altogether stopped and the legal status of reprogrammed/pessified bank deposits and loans was undefined after months of litigation) and the political system had been discredited. In these conditions, real activity plunged and the real exchange rate jumped in such a way that the (constant) dollar value of per capita GDP dropped to its lowest levels in decades. As a legacy of the years of price stability (and as a consequence of the depressed domestic spending), the demand for local currency for everyday transactions and its use as denominator of prices proved notably resilient, even while the nominal exchange rate multiplied by about four times.

An outcome like the Argentine crisis certainly seems worthwhile to be prevented. “Buying insurance” against such collapse can be costly in terms of economic performance in “good” states of the world: in the particular Argentine case, it seems that the post-hyperinflation recovery would have been much weaker without the anchor provided by convertibility and the use of a dollar denominator for financial assets. In particular, a less strict monetary system without a definite link to the dollar would have likely implied much higher interest rates and lower investment. Trying to apply convertibility with “fiscal insurance” may have generated quite difficult policy problems, as the government would have been required to generate a buffer stock of resources while “leaning against the wind” (for instance through consumption taxes) if the increase in aggregate demand was seen to be rising “too fast”. However, the experience indicates how a system that makes little provision for unfavorable events can end up reversing the gains it may have obtained in the meantime.

A possible conclusion is that, especially in an economy in transition, the risks to be contemplated include those derived from “model uncertainty”:¹⁸ policies that follow what at the time is believed to be “good practice” are no guarantee of success. In the Argentine case, the combination of stabilization and reforms could have indeed resulted in high growth; but there was no firm knowledge to take that result as a foregone conclusion, and even less to allow a precise “point estimate” of the likely increase in income. Incorporating that type of uncertainty poses subtle, and tough, analytical questions (see Hansen and Sargent, 2001) and, in practice, it would ask for policymakers with sufficient time perspective and self-restraint to allow (more or less explicitly) for the fallibility of their “preferred” model. Policy-making in transitions cannot but have an important element of judgment (even in developed countries, the border between “well-founded optimism” and “irrational exuberance” can be difficult to identify at times). This is one important reason why policy flexibility remains especially valuable in those conditions, even after recognizing the tradeoff with addressing credibility problems. An economy where future conditions are quite uncertain and at the same time government discretion is very distrusted will have hard times establishing an appropriate framework for policy-making. However, “corner solutions” are unlikely to be the right responses. If the time discount is not too large, investment in reputation can substitute profitably for tight constraints (although, of course, all of this remains fundamentally parameter-dependent). A similar argument for “purchasing flexibility” would apply for fiscal policies: the ability to use

¹⁸ This is also true in developed countries. Blinder (2002) states that the main difficulty in conducting monetary policy which he encountered at the FED was model uncertainty: “In practice, of course, we do not know the model but must estimate it econometrically. Since economists agree neither on the “right” model nor on the “right” econometric techniques, this is a nontrivial problem”.

resources countercyclically critically depends on the perceived solvency of the government when a shock hits.

Those matters related with the management of uncertainty connect with one of the biggest issues posed by the Argentine experience: the correspondence between the features of contracts (including institutionally based policy promises) and the nature of contingencies the economy may be subject to. It is evident that a shock that can be handled by one set of contracts (through an explicit or implicit escape clause) can cause the collapse of others (and the Argentine case suggests that it may be difficult to expect low-friction massive renegotiations of contracts which have been disturbed). In the specific instance of Argentina, it was realized that the economy “could not really” maintain more or less steady incomes in dollar terms. Why agents would want to make contracts that are open to large shocks (and whether they recognize the risks associated with different types of contracts) is a matter that we are not prepared to discuss here. But, indeed, establishing a setting such that the agreements between parties will not be modified by “arbitrary” policy interventions and, at the same time, agents are not induced to take “unnecessary real risks” (possibly in trying to avoid those interventions) is a major policy problem. One of the big challenges that the Argentine economy (and its policymakers) will be facing is to gradually reconstitute a credit system in which “typical” macroeconomic contingencies (such as movements in the real exchange rate) do not cause the danger of a breakdown. The problem of contractual design appears also relevant for the renegotiation of the public debt of an economy where future prospects are subject to a great deal of uncertainty.

APPENDIX 1: Macroeconomic Framework

a) Simple open-economy models: a brief reminder

Consider a very simple model of a representative-agent, pure endowment economy producing tradeable goods (denoted T) and non-traded goods (N). The economy participates in an international credit market, where the interest rate is known to be constant and equal to the rate of time preference of the representative consumer of the economy. Instantaneous preferences over goods T and N are such that the consumer allocates the value of spending in constant proportions, γ and $1-\gamma$, respectively (the parameter γ relates to the degree of “tradability” of the economy, defined as the share of sector T in total output). The value of consumption in terms of traded goods is the return on perceived wealth in terms of those goods. The primary spending of the government consists of non-traded goods. The conditions for Ricardian equivalence are assumed to hold.

Let Y_{Tk} , Y_{Nk} represent the outputs of goods T , N in period k , C_{Tk} , C_{Nk} the volumes of consumption of those goods, G_{Nk} government spending in period k , p_{Nk} the price of good N (with T as numéraire), A_0 the financial assets held by the representative consumer at the start of period 0 and B_0 the public debt at the same moment. Then, private wealth is:

$$W_0 = A_0 - B_0 + \sum_{k=0}^{\infty} \frac{Y_{Tk}}{(1+r)^k} + \sum_{k=0}^{\infty} \frac{P_{Nk}(Y_{Nk} - G_{Nk})}{(1+r)^k} \quad (1)$$

In equilibrium, the “non-tradeable component” of wealth is given endogenously by the decisions of the consumer, and therefore can be written as a function of wealth, since:

$$p_{Nk}(Y_{Nk} - G_{Nk}) = p_{Nk} C_{Nk} = (1-\gamma) \frac{r}{1+r} W_0 \quad (2)$$

Then, a self-consistent estimate of wealth is therefore given by:

$$W_0 = \frac{1}{\gamma} \left(A_0 - B_0 + \sum_{k=0}^{\infty} \frac{Y_{Tk}}{(1+r)^k} \right) = \frac{1}{\gamma} W_{0T} \quad (3)$$

This implies that consumption of traded goods and the value of consumption of non-traded goods are proportional to the “traded goods component” of perceived wealth given by the level of net foreign assets and the present value of the flow of traded-goods output. In this very basic framework, some implications are:

- i) The “sustainable” sequences of spending (defined as the paths of the demand for goods compatible with foresight) cannot be determined except with reference to the future evolution of output (and incomes). By itself, past information does not establish whether, say, a current account deficit is “too large” or “too small”, or whether the real exchange rate is misaligned.
- ii) An anticipated increase in the future output of traded goods raises the consumption of traded goods (and reduces the trade balance) and the price of non-traded goods in

- proportion to the rise of traded-goods wealth, independently of the future evolution of the output of non-traded goods.
- iii) Similarly, a transfer of traded goods increases aggregate demand in proportion to its effect on traded-goods; in particular, for given transfer/GDP values, the consequent real appreciation will be larger in a more “closed” (lower γ) economy (cf. Perry and Servén (2002)).
 - iv) An increase in traded-goods wealth, through its effect on equilibrium prices, drives upwards the government spending/GDP ratio.
 - v) A higher volume of public spending (in non-traded goods) implies, *ceteris paribus*, a real appreciation (as the supply of goods for private consumption diminishes while the value of private consumption does not vary), but has no effect on the consumption of traded goods and the trade balance.

b) Adjustment without credit constraints and with tax revenues proportional to GDP

The exercise consists in studying the effects of a shock on the supply of traded goods (or, equivalently, a fall in the “dollar price” of traded goods), assuming that the government’s revenues are a proportion τ of the value of output (in this simple framework, the assumption does not modify the Ricardian proposition). The shift is an “unexpected” permanent decline in the output of traded goods; for simplicity, the levels of Y_T are considered to be constant over time before and after the shock. It is assumed that government spending adjusts once and for all to a new constant value consistent with the new intertemporal budget constraint. Credit conditions do not vary: access to financing remains unrestricted, and the interest rate does not change.

Let $\gamma' = \frac{\gamma}{1-\gamma}$ represent the ratio between the values of private consumption of traded goods and non-traded goods. It can be shown that, given that Y_N is fixed by hypothesis, the elasticity of the equilibrium price of non-tradeables with respect to the output of traded goods is:

$$\frac{\hat{P}_N}{\hat{Y}_T} = \frac{k (1 + \gamma' \tau)}{\gamma' (1 - \tau)} \quad (4)$$

Where k indicates the ratio between the values of output of traded and non-traded goods. The dependence of the volume of public spending on the value of output generates a “fiscal amplifier” of the shock.

c) Adjustment with constrained public and foreign debts

The experiment is similar to the previous one, except that now the level of public debt is constrained as a proportion of the value of GDP, while the foreign debt must remain at most equal to a certain proportion of the output of traded goods.¹⁹ The parameters that measure the constraints

¹⁹ The foreign debt constraint generates an endogenous “sudden stop” (Calvo et al. (2002)). The production of traded goods seems a straightforward indicator of the capacity to serve foreign debts. In the case of the government’s constraint, it may be preferable to represent it as a function of future expected values of GDP. The distinction is relevant, since there will be an overshooting in the value of aggregate spending as the levels of debt adjust to their constraints. However, the simpler construction used here serves the purposes of the exercise.

are, respectively, β and α . It is assumed that before the shock, the constraints were already binding. Government spending and the consumption of traded goods are limited, respectively, by:²⁰

$$B_0 + P_{N0}G_{N0} - \tau(Y_T + P_N Y_N) = \beta(Y_T + P_N Y_N) \quad (5)$$

And

$$B_0 - A_0 + C_{T0} - Y_T = \alpha Y_T \quad (6)$$

After some manipulations, the elasticity of the equilibrium price of non-traded goods is obtained as:

$$\frac{\hat{P}_{N0}}{\hat{Y}_T} = \frac{k(1 + \alpha + \gamma'(\beta + \tau))}{\gamma'(1 - \beta - \tau)} \quad (11)$$

Clearly, the “multiplier” is now larger than in the previous case. If debt deflation effects were present, they would add to the impact of the shock.

APPENDIX 2: Risky Policy Behavior as a Device to Signal Growth Opportunities

This very simplified example illustrates the possibility that a policymaker with private information about the possible paths of the economy may choose to take a riskier policy action than it would take in a non-signaling context, in order to reinforce the perception of good prospects and hence induce, say, more private investment. The model is as follows.

There are two players, a policymaker G and one private sector agent A . The timing is as follows: the government observes a private signal Pi , which refers to the probability that the future state of nature will be of “high productivity”. There are three possible signals, $i=L, M, H$ (to indicate low, medium and high probability of a good state). The government can then choose an action Y which can take three values, also denoted L, M, H . Finally, A makes an investment decision I , which can take values 0 or 1 . The project succeeds in the good state, and fails in the bad state.

Except for the signal, everything else in the game is common knowledge. The probability Pi indicated by the signal can take three values, low, medium or high, with $PL < PM < PH$. If the signal was fully reliable, the posterior belief of G would equal the signal. Let $RG \in (0, 1)$ measure the reliability of the signal, as perceived by the government. In that case the government’s posterior belief after observing Pi equals $RG*Pi + (1-RG)*P0$, where $P0$ is the prior. In turn, $P0 = QL*PL + QM*PM + QH*PH$, where Qi is the prior probability of observing the signal i .

After G observes Pi , it takes a policy action. Policy action i constitutes what in a non-signaling world (i.e., when Pi is public information) would be the optimal policy. We may assume, for example, that, if A believed that the probability of success of the project is PM he would invest, and the government’s action M , taken under the same belief, would incorporate an element of “insurance” against the chance of failure, given that the probability of a good outcome is not the highest. In the same vein, choosing PH would imply that the government acts “as if” it was not worthwhile to take that kind of precaution.

²⁰ The exercise concentrates on the immediate impact of the shock (that is, in the period where spending adjusts to the change in the debt constraints).

For brevity, we collapse the payoff of A into his equilibrium choice of whether to invest or not. A will invest if and only if his posterior belief about the probability of success of the project is greater than a threshold PU . We assume that $PM > PU > P0$. That is, A would undertake the project if he acted on the basis of the intermediate probability of success PM , but will not undertake it on the basis of his prior $P0$.²¹

The payoff of G is a function $V(p, Y, I)$, where p is G 's posterior, Y is its action, and I is the action of the private sector. We assume that:

$$V(RG*PM+(1-RG)*P0,H,1) > V(RG*PM+(1-RG)*P0,M,0) \quad (12)$$

Implying that G prefers the investment project to be undertaken, even if it has to act too “aggressively” by taking policy action H , when in fact it has received the intermediate signal PM .²²

For brevity, instead of fully analyzing the game, we just show the existence of one (Perfect Bayesian) equilibrium that delivers our desired result. In that equilibrium, the strategy of the government is to choose policy L after observing signal PL , and to choose policy H after observing either PM or PH . The private sector “responds” by not investing when it observes government policy L , and by investing when it observes H .

Take first private sector choices. Given the strategy of the government, we have to construct A 's posterior by using Bayes rule, and see his optimal choice given that. Let $RA \in (0, 1)$ be the reliability of the government's signal, as perceived by the private agent. If observes L , his posterior is $RA*L+(1-RA)*P0$, which is clearly smaller than PU , so that $I=0$. When A observes H , his posterior is (note that A recognizes that G has an incentive to signal H when observing M):

$$RA*[PM*QM/(QM+QH)+PH*QH/(QM+QH)]+(1-RA)*P0$$

Which for some values of parameters (for instance RA not too small) is greater than PU , inducing $I=1$.

The private sector cannot use Bayes rule if it observed action M , since it is not an equilibrium action in the postulated equilibrium. (Yet, we need to analyze that node since we will need it when considering the optimality of G 's strategy). It is natural to impose assumptions on V such that $Y=L$ is the dominant choice (with or without private sector investment) if the government observes PL . Then, if A observes action M , it will believe that (with probability one) G has observed PM . In that case, A 's “posterior” would become $RA*PM+(1-RA)*P0$. For some values of RA this posterior would be smaller than PU , inducing $I=0$.

For some values of the parameters QM , QH and RA , the two previous conditions can be satisfied, so that $Y=M$ would induce $I=0$ and $Y=H$ would induce $I=1$. We need that to be the best response of A , in order for G 's postulated strategy to be optimal.

We look now into the policymaker's choices, taking as given the strategy of A . From assumption (12), we have that G chooses H when it observes PM , if this is the only way to induce investment (and a fortiori when it observes PH).

²¹ A fortiori, the project is not undertaken on the basis of PL , and it is undertaken on the basis of PH , since $PH > PM > PU > P0 > PL$.

²² Note that $[RG*PM+(1-RG)*P0]$ is the government's posterior belief of the probability of success of the investment project, after receiving signal PM .

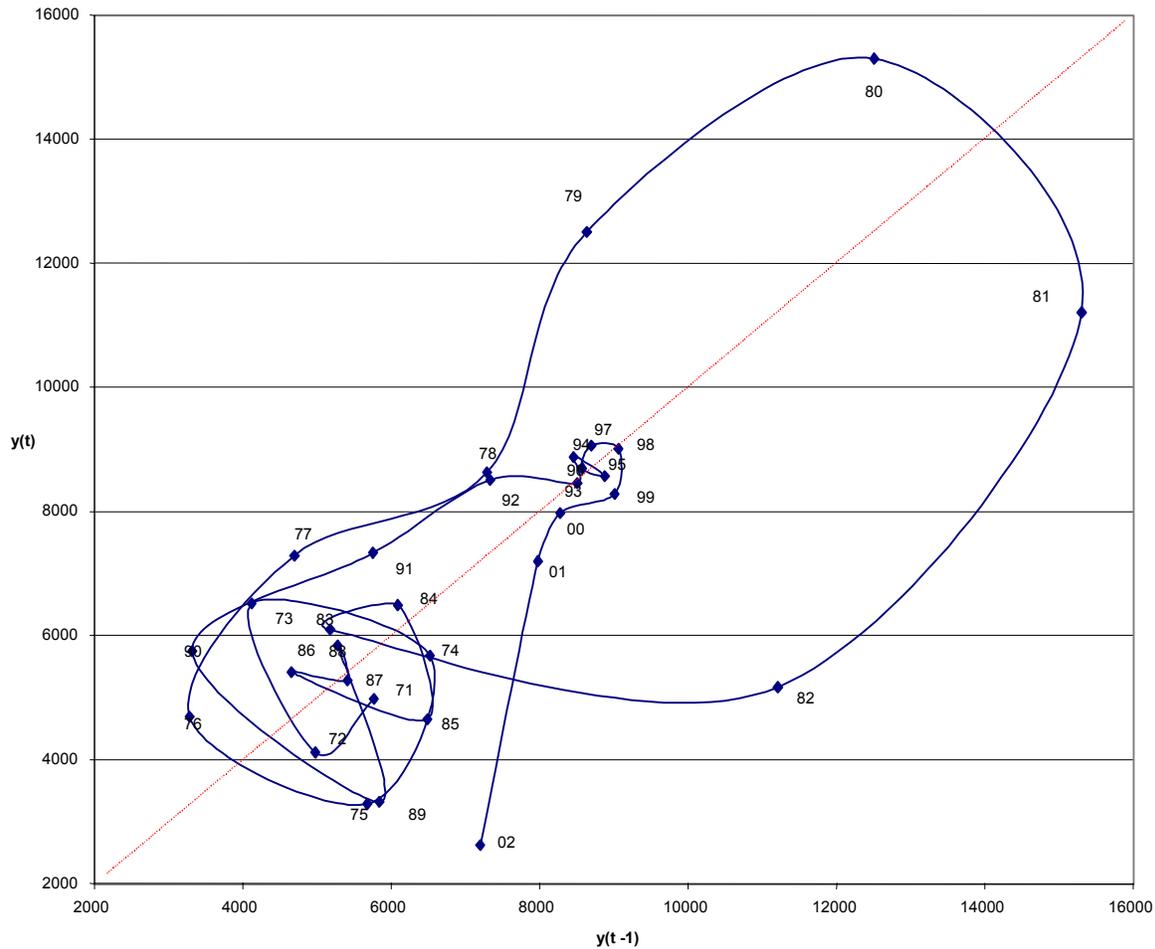
In summary, we have shown that there is an equilibrium in which the government takes a suboptimal policy action which is “too bullish” ($Y=H$ when observing PM), in order to promote private sector investment. The private sector does indeed respond with investment, while realizing that success is not guaranteed.

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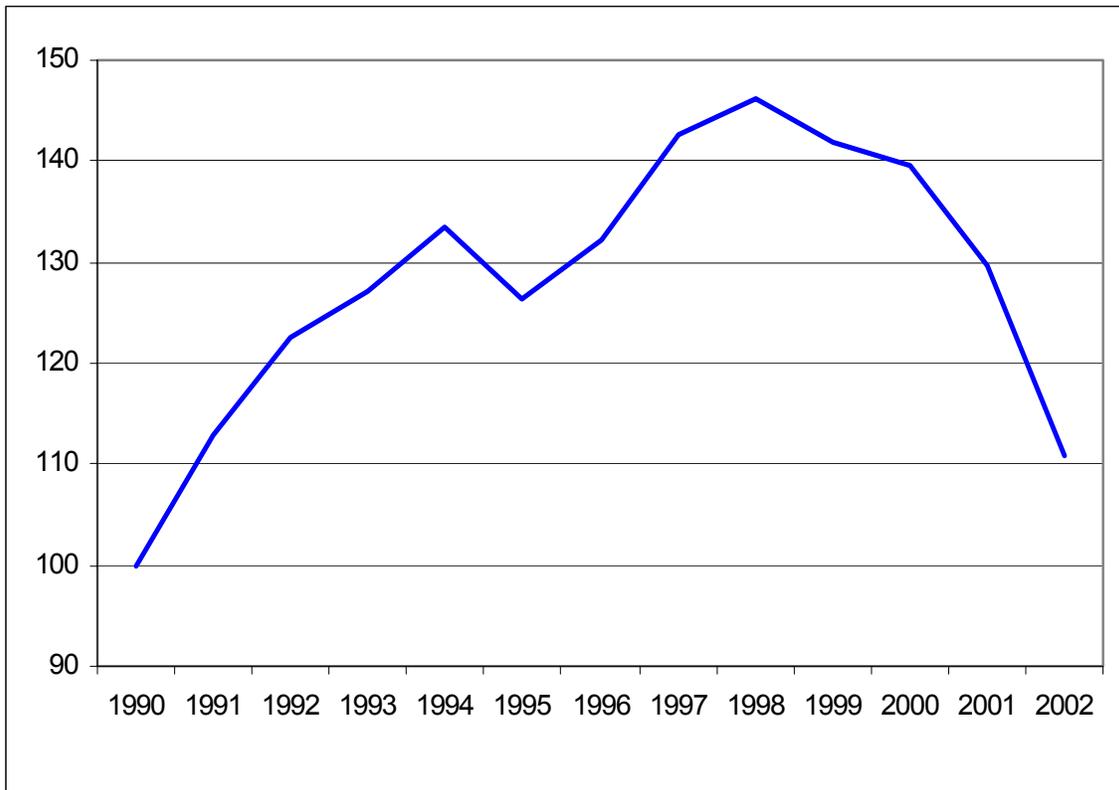
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Figure 1: Phase diagram of per capita GDP at constant US\$ dollars of 2000 (1970-2002)



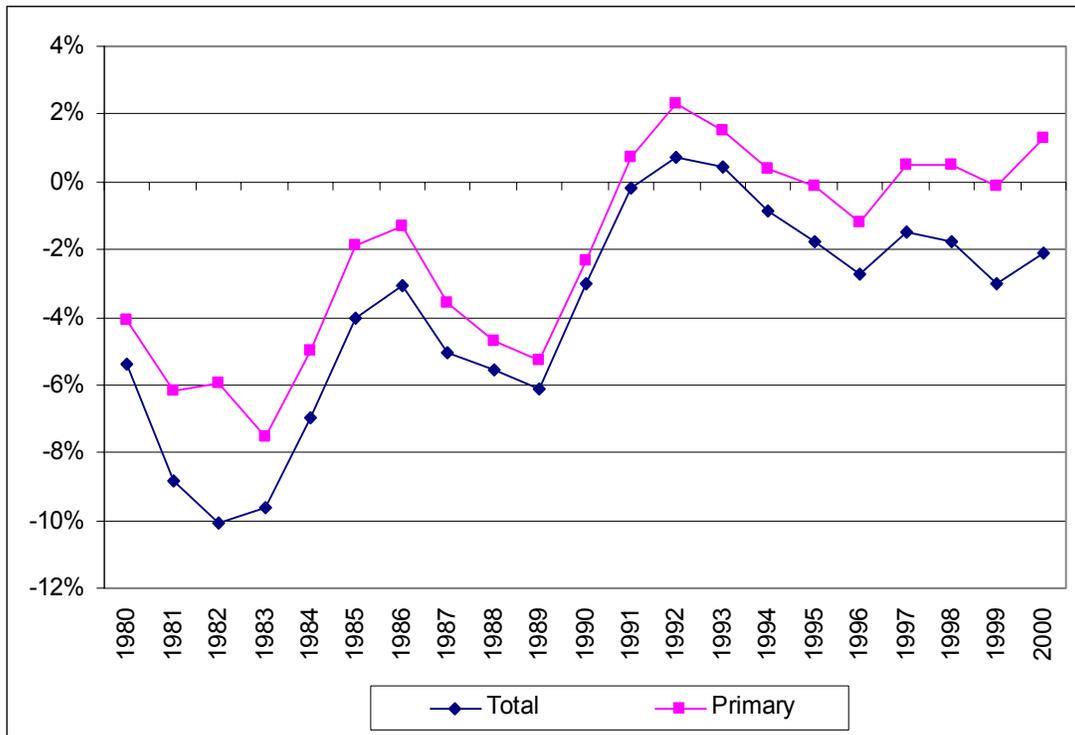
Source: CEPAL.

Figure 2: Private Consumption at Constant Prices (1990 = 100)



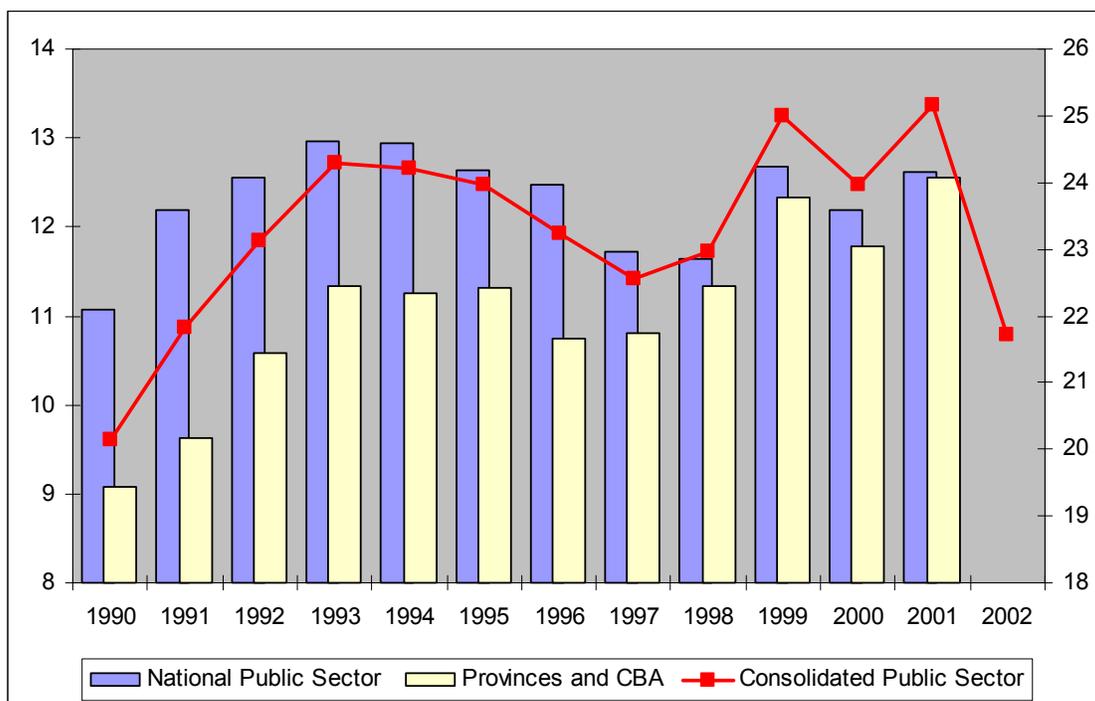
Source: CEPAL.

Figure 3: National Public Sector Balance (% of GDP)



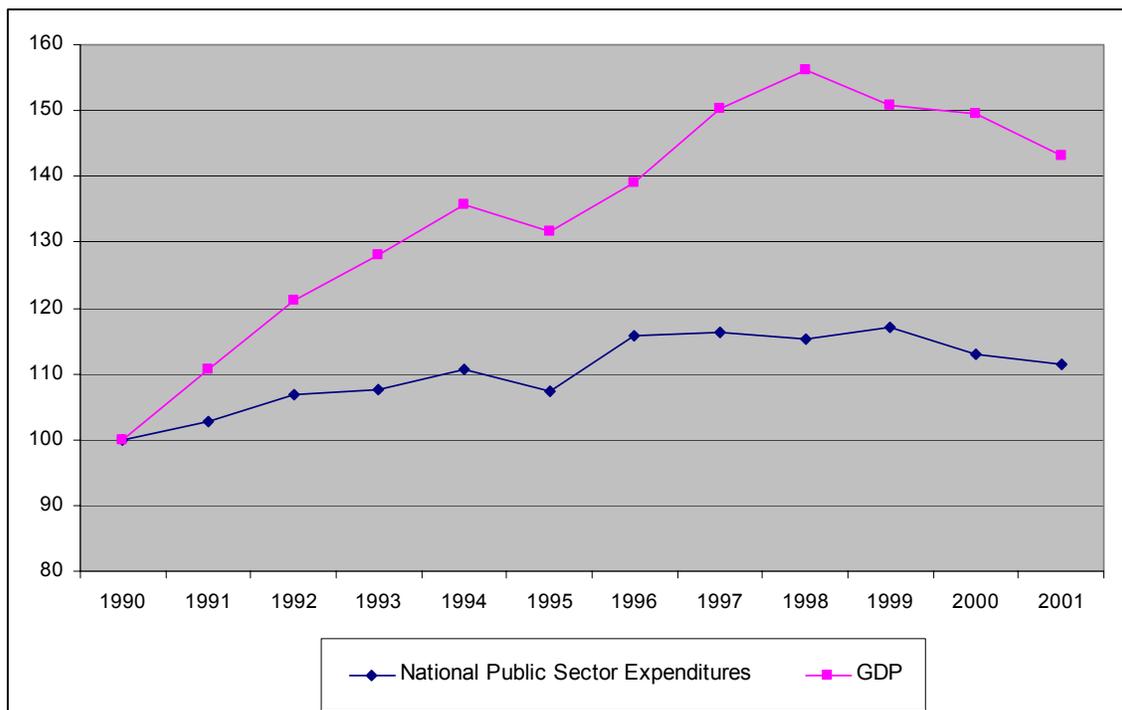
Source: Cetrangolo and Jimenez (2002).

Figure 5: Public Sector Primary Expenditure at Current Prices (% of GDP)



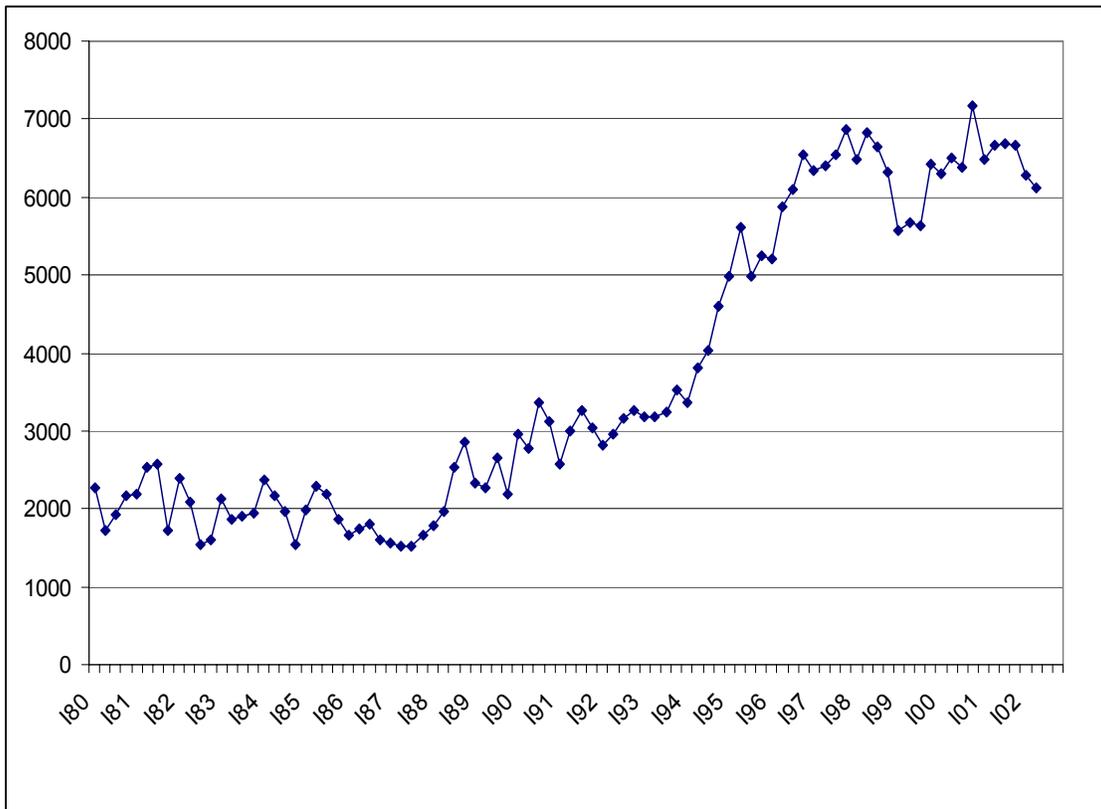
Source: CEPAL.

**Figure 6: National Public Sector Primary Expenditure and GDP at Constant Prices
(1990 = 100)**



Source: CEPAL.

Figure 7: Quarterly Exports (millions of dollars)



Source: CEPAL.

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