Argentina: macroeconomic performance and crisis

By

Mario Damill and Roberto Frenkel

Senior Researchers at CEDES
Professors at the Universidad de Buenos Aires

Introduction

At the beginning of the nineties, the macroeconomic setting changed drastically in Argentina. After a lengthy period of economic stagnation and high inflation that ended in two hyperinflationary crises in 1989 and 1990, a comprehensive program of economic stabilization and economic reform was launched.

Presented with a strongly pro-market rhetoric akin to the Washington Consensus spirit, the program assumed among other aspects that the country had both to renounce to monetary policy and to adopt severe restraints to fiscal policy as a way to overcome the macroeconomic instability that had characterized the preceding phase. The prescription also included a complete opening to the international flows of trade and capital, trusting in the stabilizing role of market mechanisms and expecting a positive effect of this shift in orientation on both economic efficiency and growth.

The program involved severe limits to the capacity of the government to apply counter-cyclical policies. At the same time, the new macroeconomic framework could make the economy more vulnerable to changes in the foreign environment (and particularly to changes in capital flows). Despite of all that, there was almost no debate regarding these risks when the program was launched. This was in part a consequence of the situation of high uncertainty and instability that was its prelude. This chaotic scenario opened room, in political and social grounds, for a drastic change.

The stabilization plan was based on the fixing of the exchange rate as an anchor to the price system, under a currency board regime. The Central Bank was obliged to keep full backing of the monetary base at the adopted parity (established by law from April 1st 1991 on). This involved strict limits to the possibility of the Bank to act as lender of last resort to the financial system. It also closed the access of the public sector to the Central Bank financing of its budget deficits.

Sweeping reforms accompanied the stabilization policy. We should stress the drastic trade and financial opening (including equal treatment for all kind of capital inflows with independence of their origin), the privatization of public utilities and several deregulatory measures in the goods and financial markets. The autonomy of the Central Bank was also established by law and the charter of the monetary authority was reformed to incorporate the currency board rules.

Let us point out a few aspects of the context in which the program was launched. Firstly, a significant and favorable change was taking place in the foreign financial environment. The international interest rates fell drastically from 1989 on. The 180-days LIBO rate, for instance, experienced a sustained decline from 10% in early 1989 to 3,4% at

the beginning of 1993. This factor encouraged the flow of funds to a number of places that then begun to be qualified as "emerging markets". Some of them, in Latin America in particular, had been rationed in international credit markets throughout the whole decade of the eighties.

Both the fall in interest rates and the regained access to private funds had a bearing on the Latin American macroeconomic performance in the early nineties. They entailed a relaxation of the external constraint, which had been a serious impediment for economic growth and stability. In some cases (like Argentina, Mexico, and Brazil a few years later) they made possible the implementation of stabilization programs based on the utilization of the nominal exchange rate as an anchor to the price system.

A second aspect is domestic and would have important consequences throughout the nineties (some of them to be developed below). The stabilization program launched in 1991 was preceded by a sudden and drastic change in relative prices: the national currency appreciated acutely throughout the twelve months period before the fixing of the parity. If it is true that the process of real appreciation continued during the first few years of the currency board regime, its intensity happened to be much more moderate. Therefore, one of the initial conditions of the decade is a new set of relative prices, for instance, a high level of wages (measured in US dollars) in comparison with prior periods. These relative prices will suffer only minor changes, from then on, until the end of the monetary regime.

Finally, an additional feature of the monetary framework deserves to be mentioned, especially taking into account its future consequences. One of the elements of the financial deregulation process was the legalization of domestic transactions in any currency. This element set the basis for a progressive dollarization of domestic financial transactions (particularly of bank deposits and credits). Much later, financial dollarization became an amplifying factor of the cost of the abandonment of the currency board regime. In late 2001, in the last days of that macroeconomic setting, almost 75% of private deposits in local banks and about 80% of domestic bank credit was denominated in US dollars.

In spite of the "miraculous" aspect of its first years, the final assessment of the macroeconomic regime of the nineties is frankly disappointing, regarding growth at least. The average GDP growth rate was only 3.18% a year in the period 1990-2001. This performance falls behind the average growth rates reached between 1960 and 1975 (when the economy expanded by more than 4% a year, on average). But, additionally, the nineties' average resulted from a yearly growth of 7.6% between 1990 and 1994, followed by a 0.8% a year in the long 1995-2001 period.

Between the second quarter of 1998 (when the GDP reached its maximum value in the decade) and the last quarter of 2001, the decline in aggregate output was of 15.6%. It has to be stressed that two thirds of this fall happened in the second semester of 2001. Thus, this fall took place before the depreciation of the peso and the breaking of nominal contracts, factors that are often interpreted as the main cause of the output fall. After the devaluation the contraction continued for only one quarter, the reversal of the negative trend took place in the second quarter of 2002.

Other impressive features of the Convertibility regime were the abyssal fall in full-time employment and the rise in the unemployment rate. In the last months of the regime, before the devaluation, the unemployment rate reached 18.3%. The fall in full-time employment and the rise in unemployment were the main causes of the worsening in income distribution and the increase in poverty under the Convertibility regime[1].

In this paper we discuss the macroeconomic and employment performance of Argentina in the 1990s and early 2000s. In the next section we intend to tackle two controversial points about the regime. The first is related to the main characteristics of the policy regime and the economic performance it led to. Are the Convertibility regime and the Argentine crisis a special case, or do both share their stylized facts with other critical experiences of financial globalization? We assert that the Argentine experience in the nineties is similar to other LA cases of trade and financial liberalization and opening leading to crisis. So, similar critical factors can be identified in all those cases and there is a common explanation of the performances and the crises.

The second point focuses on the fiscal issue. Unsustainable public debt dynamics caused by the fiscal policy of the second half of the nineties is he privileged explanation of the Argentine crisis. Our point is that the public debt dynamics was mainly triggered by the cumulative effects of the rise in the interest rates - pushed by the rise in the country risk premium after the Asian and Russian crises. The interests' expenditure item was the main factor explaining the increase in the fiscal deficit in the 1998-01 period. The pension system deficit also contributed to that increase. The fall in the public pension system receipts mainly resulted from the recession and the contraction in employment that started in mid-1998, thus, it was also an indirect effect of the new financial conditions. The fiscal deficit increased despite a significant rise in the primary surplus. In order to give a solid foundation to those arguments, we reviewed the fiscal accounts figures, incorporated new

information on public debt and elaborated a new quantitative picture of the evolution of the fiscal accounts that is presented for the first time in this paper.

In the second section a detailed assessment of the macroeconomic performance is presented. Finally, in the third section we analyze the behavior of employment and unemployment under the Convertibility regime.

1. Controversies

In this section we intend to tackle two controversial points about the Convertibility regime and the Argentine crisis before presenting our own analysis. The first point is related to the main characteristics of the policy regime and the economic performance it led to. The second is focused on the fiscal issue.

1.1 Latin American financial globalization and crises [2]

In the new stage of financial globalization that took place in the 1990s, a number of LA countries have experienced external and financial crises, with dramatic real effects. The crises in Mexico (1994-95), Argentina (1995), Brazil (1998-99) and again Argentina (2001-02) occurred in the countries that had received the largest capital inflows in the earlier booms. These countries are, in turn, the largest economies in LA and the largest "emerging markets" in the region.

A brief examination of the cases in question is sufficient to reveal certain common traits in the institutional and policy contexts: (1) the nominal exchange rate was fixed or quasi-fixed; (2) the real exchange rate had appreciated; (3) there were virtually no barriers to the free movement of capital; (4) inflows of capital during the earlier boom had been large in comparison to the pre-existing money and capital markets; and (5) regulation of national financial systems during the boom periods was weak and permissive.[3]

A more detailed analysis of the cases in question also shows that they all were subject to cyclical macroeconomic dynamics, with an initial stage of growth followed by a period of stagnation or recession, increasing financial and external fragility and, lastly, a financial and currency crisis. The Argentine economy went through this cycle twice in the nineties, because the convertibility regime survived the crisis triggered by the tequila effect

in 1995. After 1995, the Argentine economy experienced another brief phase of growth, based on a new increase in capital inflows that lasted until the Asian crisis. The turning point in this second cycle came in 1998.

The institutional and macroeconomic policy context described above was shaped by the application of programs that combined structural reforms[4] with anti-inflationary macroeconomic policies in which the fixed or quasi-fixed exchange rate played a crucial role. Mexico implemented a program of this kind in 1988, Argentina in 1991 and Brazil in 1994.

The experiments in the Southern Cone

Early regional experiences in joining the international financial globalization in the 1970s – Argentina and Chile – anticipated the models that would become widespread in the 1990s. The so-called 'Southern Cone liberalization experiments' combined financial and trade reforms with macroeconomic systems involving pre-set exchange rates and a passive monetary policy. The reforms included liberalization and deregulation of capital flows, liberalization of the local financial market and openness to trade. The pre-set exchange rates (tablitas) were intended to bring down inflation, but led eventually to an appreciated real exchange rate. The developments in the 1970s occurred under the same local conditions and led to the same booms in capital flows that can be seen in the critical cases in the 1990s. Furthermore, the Southern Cone experiments led later to crises similar to the recent ones in Mexico, Brazil and Argentina. Although the experiments in the 1970s were shorter than in the recent cases, the macroeconomic dynamics points to the same cycle of boom, shrinkage and crisis.

Both Chile and Argentina fully liberalized capital flows and adopted pre-set exchange rates in the last quarter of the seventies. By the end of 1979, when the United States raised interest rates, Argentina and Chile already had large external debts and current account deficits. The higher international interest rates made a further contribution to their external fragility. The crises erupted shortly afterward. The exchange rate regime in Argentina collapsed in early 1981 and in Chile in 1982. Both economies did not have access to international financial markets in 1982, and in both cases large-scale rescues of

the local financial system were undertaken, at high fiscal costs. Both economies went into deep recession.

Neither the fiscal deficit nor the existence of public guarantees of bank deposits – an element that could potentially create moral hazard – played significant roles in the crises. Both were present in Argentina, but Chile had a fiscal surplus and the deposit guarantee had been eliminated for the express purpose of making the financial system more efficient and less risky. The IMF supported these policy experiments. In 1980 and 1981, when Chile exhibited large current account deficits, the IMF (Walter Robicheck) maintained that this situation should not be cause for concern, as long as it was not accompanied by a fiscal deficit – which Chile did not have at the time. The IMF (Michel Camdessus) maintained the same position with regard to Mexico in 1994. On both occasions, the basic argument was that the rational behavior of the private sector would guarantee the efficient allocation of loans from abroad and would also guarantee their repayment.

The cyclical dynamics that leads to crisis

The starting point of the cycles in the 1970s and 1990s is the combination of local programs and a boom in capital flows into emerging markets. It is precisely the abundance of low-cost international financing that makes policy packages viable ex ante.

The programs are followed by massive inflows of capital and an initial stage involving the stockpiling of reserves and high rates of growth in money and credit. There is strong growth in domestic demand and bubbles in the prices of real and financial assets, such as land, property and shares. The impact on the prices of assets and on the amounts of money and credit is very large because the capital flows are large in comparison to local markets. The local financial systems and capital markets are relatively small and scantly diversified. The menu of assets is short, and little use is made of banking services. The local financial system had previously administered few resources and is not prepared to efficiently allocate a fast growing mass of credit. For the same reasons, the capacity of the authorities to supervise a financial system that is growing rapidly in terms of volume and the number of intermediaries is weak. With a fixed or quasi-fixed nominal exchange rate that initially enjoys great credibility, investments in local assets bring high returns in

dollars. There are strong incentives to adopt positions in local assets financed with debt in foreign currency.

The real exchange rate tends to appreciate in the expansion stage because local inflation is higher than the sum of the pre-set devaluation rates (zero in the case of fixed exchange rates) plus international inflation. The pressure from the rapid growth in demand in the non-tradable sectors contributes to the appreciation.

As a result of the real appreciation, openness to trade and growth in domestic demand, imports grow rapidly and the trade deficit rises. The other components of the current account deficit also tend to increase - slowly at the outset and then more quickly - as the external debt grows and the stock of foreign capital invested in the economy rises.

Relative prices bias real investment toward non-tradable sectors. As a result, the growing returns in international currency from FDI have no counterpart in the current account balance in an increase in exports.

The evolution of the current account and reserves defines one aspect of the cycle. There is a continuous increase in the current account deficit, while capital flows may reverse abruptly. The day eventually arrives when the current account deficit is larger than capital income. Reserves peak and then shrink, leading to a reduction in the supply of money and credit. However, the cycle is not determined exclusively by this mechanical element. The magnitude of capital flows is not an exogenous datum. The portfolio decisions of local and external agents on the percentage of local assets – the percentage of the portfolio exposed to country risk or exchange risk – are affected by the behavior of the balance of payments and finances.

The domestic interest rate reflects the financial aspects of the cycle. It tends to drop in the first phase and rise in the second. Since the exchange policy initially enjoys high credibility, arbitration between local and external financial markets leads to a reduction in the rate in the first phase. Low interest rates contribute to real and financial expansion. In this context, financial fragility (in Minsky's usage) increases significantly. The interest rate rises in the second phase and bouts of illiquidity and insolvency crop up, first as isolated cases and then as a systemic crisis.

How can we explain the increase in the nominal and real interest rates? Since the financial market is open at both ends, there is arbitration between local and external assets,

as noted earlier. The interest rate in local currency can be expressed as the sum of the international rate in dollars paid by the country plus the devaluation rate established in the exchange policy rules (zero in the case of fixed exchange rates), plus a residual that responds to the exchange risk and the local financial risk. In turn, the international rate confronted by the country can be broken down into two parts: the yield of US Treasury bonds plus a residual that compensates for the risk of domestic debt issued in dollars - i.e. the country risk premium.

The sum of the exchange risk premium and the country risk premium – the aggregate price of the risk of devaluation and the risk of default – is the main variable behind the rise in the local interest rate.

A steady increase in the current account deficit and – after a certain point, the trend towards shrinking reserves – on the one hand undermines the credibility of the exchange rate regime and, on the other, increases the probability that the debt will not be served in due time and form. Maintaining the exchange rate regime and regularly servicing the foreign debt would require growing capital inflows. Consequently, the risk premiums tend to rise. High risk premiums and the resulting high interest rates are necessary to attract capital from abroad and balance the portfolios. Economic activity shrinks and bouts of illiquidity and insolvency also contribute to undermining the credibility of the exchange regime. This dynamic proved to be explosive in all the cases examined. At the end of the process, no interest rate is high enough to maintain demand for local financial assets. There are runs on the Central Bank reserves that finally lead to the collapse of the exchange regime. In the cases that occurred in the 1990s, the market for new debt issues generally broke down when the country risk reached some high level.

The relative weights of the exchange risk premium and the country risk premium were different in the 1970s and the 1990s. The difference is linked to the different forms that external financing assumed in each decade. In the 1970s, financing came principally from international bank loans. The country risk premium was the surcharge levied on the international prime rate charged by the banks on their loans to the country. The secondary debt market was insignificant. In this context, in Argentina and Chile in the late seventies-early eighties, the exchange risk was the main factor that determined the rise in interest rates in the second phase of the cycle, while the increase in the surcharge levied by the

creditor banks was not significant. This can be explained by the behavior of the banks. As long as each bank has a portion of its portfolio invested in assets in the country, it is interested in preserving the borrowers' ability to repay. Consideration of the sunk portfolio influences decisions on the amounts and prices of new loans.

In the 1990s, on the other hand, the main form of financing was the sale of bonds and other debt instruments on a primary market consisting of many and varied players. The debt papers are traded daily on an active secondary market. The country risk premium arises from the continuous quotations of the papers on that market. In the 1990s, the rise in the country risk premium – resulting from the fall in the price of country debt papers on the global secondary market – is the main factor behind the increase in interest rates in the second phase of the cycle. Besides, the debt market in the most recent stage of globalization is more volatile than the credit market of the 1970s. It is more subject to contagion and to herd behavior.

The fiscal deficit and public debt

This analysis of economic developments highlights some stylized facts that are present in all the processes under consideration. The description of those stylized facts focuses on the linkage between a country's finances and real economy and the international financial system. There is positive feedback during the boom and negative feedback during the bust. The public and private financial processes have not been examined separately. The fiscal deficit financed with foreign capital is tacitly included in the local destinations of capital inflows and consolidated with the private deficit. The public sector's external debt is part of the country's total external debt and is not analyzed separately.

The reason for this approach is simple: fiscal sustainability did not play a prominent role in generating the crises in Chile in 1982, Mexico in 1994-95, Argentina in 1995 or Brazil in 1998-99 (or the Asian crises in 1997-98).[5]

A rapidly growing public debt that ends up being considered unsustainable by the market obviously can be the forerunner and trigger of a crisis. Furthermore, large fiscal and public debts were present in the Argentine crises in 1981-82 and 2001-02 and it has been frequently argued that they are explained by those circumstances. The origin of the 1981-82

Argentine crisis does not lie in the fiscal accounts. In this case, only half of the external debt was public before the crisis and the military regime did not appear to have major difficulties in adjusting public finances. The fiscal deficit and its external financing were the result of government decisions that did not pose particular problems. The policy was broadly supported by advisors who were advocates of the 'monetary approach to the balance of payments' which maintained that monetary policy – and only monetary policy – was the instrument that determined the balance of payments result and the level of reserves. As long as discipline and control over internal credit was maintained, it was said that the public deficit would not cause problems. Furthermore, it was not the behavior of the banks that led to the crisis, by restricting their supply of financing or raising its price. The international banks continued to provide financing for the public sector, with low surcharges, until the dying days of the exchange regime. In the case of Argentina (1981-82) and in the parallel case of Chile, the domestic financial crises began to become apparent at least one year before the exchange policy regime collapsed.

The 2001-02 Argentine crisis is rather different. On this occasion, the public debt is the main component of the country's external debt. The case shows the cyclical macroeconomic dynamics mentioned above, but in the second recession there is an increasing fiscal deficit and a rapid growth in public debt, largely financed with external resources. This did not occur in the first cycle (1991-1995), but in the second cycle that began in 1996.

We present below a detailed analysis of the sources of the fiscal accounts dynamics. As we commented above, in the late nineties the main incremental component in current public spending is the interest on the public debt. The rise in the interest rate, which is typical of the downturn in the cycle, had a direct impact on the public debt, contributing to a perverse dynamics of higher debt and higher risk.

An investor sustainability analysis detects multiple sources of concern in this case. On the one hand, the macroeconomic dynamics that are typical of processes that trigger crises are present: the current account deficit and the external debt increases; there is a growing need for capital inflows; and the external financial fragility of the economy as a whole increases. On the other, in parallel, there is an increase in the public debt and growing needs for public sector financing. The rise in the country risk premium and the

interest rate can be associated with the status of the external accounts or, alternatively, with the evolution of public finances, or with both, as the investment fund analysts and the risk classification agencies actually did in their reports. But, even if public debt sustainability uncertainties weighted significantly in the investors' assessments, this should not hide the original source of public deficits and debt. The main source was not an exogenous mistaken fiscal policy, but the compounded effects of inherent fragility and contagion. The Argentine experience and crisis does not constitute a special case. Occam's razor suggests that the stylized facts shared with the other mentioned crises should be privileged as explanatory factors.

The IMF and many analysts[6] emphatically attributed the cause of the Argentine crisis to the fiscal deficit and the dynamics of the public debt, without paying attention to their sources. There is an implicit suggestion that the experience would have been sustainable and the crisis would not have happened if fiscal policy had been different.

It should be pointed out that if the IMF were to acknowledge the alternative explanation, it would be placed in an uncomfortable position and forced into self-criticism. In the first half of the 1990s, the Fund gave intellectual and financial support to fixed, appreciated exchange rate policies, including the convertibility regime adopted by Argentine in 1991. Later, when the Mexican crisis revealed the failings of those exchange policies, the IMF changed direction. Its new approach acknowledged the volatility of capital flows and it recommended floating exchange policies. But that new approach continued to look favorably on fixed exchange rate policies with great institutional and legal rigidities – such as currency boards or dollarization regimes. This category became one of the 'corner solutions' accepted by the new orthodoxy. The umbrella of the new orthodoxy was large enough to cover the Argentine Convertibility regime.

The IMF's commitment to the convertibility regime achieved its highest expression in the emergency package granted to Argentina at the end of 2000. The conditions did not include any significant changes in policy. The support was clearly intended to extend the survival of the regime, when there were clear indications that it had become unsustainable. The multilateral funds ended up financing payment of debt service and the flight of capital. The IMF agreed to a disbursement in August 2001, when the Argentine authorities were virtually alone in believing that it was still possible to save the regime.

It is understandable that the IMF would prefer to forget this story. The diagnostic analysis that attributes the problems and crisis in Argentina exclusively to fiscal policy is convenient, because it relieves the IMF of any responsibility for the events and their disastrous consequences – not just those that afflicted ordinary Argentines but also the capital losses of foreign investors. It is less understandable that the IMF had subsequently refused for months to offer even a modicum of support – refinancing of capital owing to the Fund – for policies that attempted to manage the consequences of the crisis that was caused by policies that the Fund had previously supported. Paradoxically, IMF officials have sometimes justified their reluctance with ambiguous references to the "the mistakes we made with Argentina in the past".

1.2. The Convertibility regime and the fiscal performance

A fiscal evaluation of the nineties is difficult because of a number of serious deficiencies in the available information. Precise figures referring to the global financial obligations of both federal and provincial public sectors prior to 1994 are missing. Complete data about fiscal revenues and expenditures on an accrual basis are also lacking for the same period. It is thus very difficult to trace a clear picture of the initial prevailing conditions and to evaluate events in between the edges of the decade.

It is also well known that a significant discrepancy exists between the public deficits accumulated throughout the decade and the increase in the public debt registered during the same period. This stock-flow inconsistency is very difficult to understand and solve solely on the basis of the available information. We made our best effort to close this informational gap. We believe that this constitutes an unavoidable requirement for a well-founded assessment of the Argentine fiscal performance.

Below we present estimates of the total public debt for the whole period and identify the main factors explaining the divergence between the accumulated deficit and the increase in the public debt.[7] On that basis we develop an analysis of the evolution of the fiscal accounts and the financial obligations of the public sector in the nineties.

The fiscal unbalance in historical perspective

To assess the fiscal performance throughout the nineties we start by looking at this period from a long-run perspective. This can be done by looking at the figures in the next table.

Table 1
Fiscal Result of the consolidated public sector
(Nation plus provinces and the City of Buenos Aires)
Averages per period, as a percentage of GDP

Period	Primary balance without privatization proceeds	Primary balance	Interest payments	Global balance without privatization proceeds	Global balance
1961-1970	-3.4	-3.4	0.7	-4.0	-4.0
1971-1980	-6.0	-6.0	1.0	-7.0	-7.0
1981-1990	-5.1	-5.1	2.0	-7.0	-7.0
1991-2000	-0.4	0.1	2.2	-2.6	-2.1

Source: Cetrángolo and Jiménez (2003), and Gaggero, J. (2003)

These estimations neatly show that the financial unbalance of the public sector was considerably reduced in the nineties. On average, a balanced primary result was attained in that period. This outcome implies a remarkable adjustment of more than 5 percentage points of GDP in comparison with the two prior decades.

The global balance showed a similar improvement. Additionally, for the decade as a whole, the deficit roughly equals the interest burden, of about 2% of GDP.

The fiscal results under the currency board regime

These average figures result, however, from quite different trends within the decade. Roughly speaking, three distinct phases can be identified: an initial stage from 1991 to 1994, an intermediate one that follows until 1997 and, from then onwards, the period of depression that ends in the final crisis of the prevailing macroeconomic regime. The main landmarks separating these phases are, in the first case, the reform of the pension system in

1994 and, in the second, the beginning of the economic contraction in 1998 associated with the effects of the Russian crisis.

From a macroeconomic perspective, the first fiscal phase corresponds to the period of price stabilization and fast economic recovery that was fostered by significant capital inflows. The second one starts with the brief recession of 1995 (triggered by the Tequila effect) and followed by a new and rapid expansion. Finally, the third period is dominated by a deflationary trend throughout its complete extension.

We will describe the main features of the fiscal performance in these three phases with the help of the next graph and tables.

Table 2.a
Fiscal results in the nineties
(accumulated amounts by period, on an accrual basis,
Million U$S dollars at current prices)

Period	Primary balance excluding the public pension system (1)	Balance of the public pension system (2)	Primary balance (3)	Interest payments (4)	Balance of the National Government (5)	Balance of the provinces (6)	Global result of the consolidated public sector (7)
1991-94	18154	-6495	11658	10654	1004	-6116	-5112
1995-97	13967	-16193	-2226	14036	-16262	-4611	-20873
1998-01	34851	-29656	5195	35271	-30076	-14678	-44754
1991-01	66972	-52345	14627	59960	-45333	-25405	-70739

(2) Does not corresponds exactly to the deficit of the public pension system, but to the difference between retirement and pension payments of the National Government and the own receipts of the public pension system, resulting from specific wage taxes and firms' contributions. The system also receives resources from other sources, like part of the income tax proceeds, etc.
(3) = (1) + (2).
(5) = (3) - (4).
(7) = (5) + (6).
(6) includes the City of Buenos Aires.
Source: Our own estimations on the basis of data from the Ministry of Economy and Cetrángolo et al. (2000) for the period prior to 1994

Table 2.b
Fiscal results in the nineties
(averages by period, on an accrual basis,
as percentage of GDP)

Period	Primary balance excluding the public pension system	Primary Balance	Interest payments	Balance of the National Government	Global result of the consolidated public sector (1)	Privatization Proceeds (2)	Global result without privatization proceeds (3)
Average 1991-94	2.07	1.33	1.20	0.13	-0.56	0.60	-1.16
Average 1995-97	1.66	-0.29	1.70	-1.99	-2.57	0.49	-3.06
Average 1998-01	3.07	0.45	3.13	-2.68	-3.99	0.37	-4.36
Average 1991-01	2.32	0.57	2.04	-1.47	-2.36	0.49	-2.85

(3) = (1) - (2)

Source: idem table 2.a.

The initial period (1991-94)

The early nineties witnessed a remarkable improvement in the public accounts. The economy had gone through several episodes of high instability and hyperinflation that eroded the real fiscal receipts during the previous years. Public revenues experienced an outstanding recovery fostered by both the price stabilization and the economic recovery that started in 1990.

Furthermore, macroeconomic stability was a great help for the tax administration. A significant improvement was reached in the area of tax collection during the period, thus contributing to a sounder fiscal performance[8], as evidenced by the data on the evolution of the tax burden presented in Table 4.

As shown in the Graph 1, the consolidated public sector reached a small surplus in 1992-93. The balance for the whole initial period was, however, slightly negative, though it averaged only 0.5 percentage points of GDP.

The privatization process was very intense during those same years. Setting privatization proceeds aside, the public deficit amounts to 1.16 percentage points of GDP, as showed in the right column in Table 2.b. On the other hand, half of this unbalanced result originated in the provinces.

As shown in table 2.b, the consolidated deficit results from the addition of the following items:

1) The primary surplus of the National Government (NG) excluding the result of the public pension system (PPS)[9]: slightly above 2% of GDP for 1991-94
2) The deficit of the PPS of about 0.7 percentage points of GDP
3) Interest payments amounting to 1.2% of the Gross Domestic Product.
4) Provincial imbalance (-0.43%).

The reform of the pension system

An extensive reform of the pension system was implemented in 1994. Argentina previously had a hybrid scheme that combined a pay-as-you-go system with a proportionality rule (i.e. pension benefits were linked to the wages of the active workers). The reform established a private capitalization pension system coexisting with a public one. The latter involved already retired citizens as well as those active workers who chose to remain within it.

We do not examine the pension reform in detail here.[10] The most important point regarding the fiscal performance in the nineties refers to the negative impact of the reform on the balance of the public pension subsystem (PPS). Since many workers abandoned the PPS for the new private one, their contributions to the PPS were also transferred to the latter. Thus, the receipts of the PPS suffered a significant fall. The increase in the financial needs of the PPS from 1994 on is clearly visible in Graph 1.[11]

The intermediate period (1994-1997)

A new phase in the fiscal evolution of the nineties begins with the pension system reform. It is also in this period that the authorities begin to implement the so-called "fiscal devaluation measures". This expression refers to measures designed to alleviate the tax burden on tradable sectors, as a way to compensate for profitability reductions caused by the appreciation of the peso, an original sin of the currency board regime.

As a consequence of these factors, the loss of receipts of the PPS and the fiscal devaluation, the public deficit rises. And this happens in spite of the first wave of procyclical fiscal policies, implemented in 1995 as an answer to the crisis that followed the Mexican devaluation of December 1994.

The government increased the VAT as part of a fiscal package aiming at offsetting the negative effect of the recession on the fiscal receipts.

The global fiscal unbalance jumps by about 2% of GDP on average, in comparison with the prior phase. However, as can be deduced from the figures in Table 2.b, the primary surplus of the National Government (without considering the PPS) only fell by 0.4% of the GDP. The deficit of the PPS jumped by an amount equivalent to 1.2% of GDP and constituted the main factor of the deterioration of the global finance. In other words, around 60% of the rise in the fiscal needs in the period resulted from the evolution of the public pension subsystem (while almost 25% was due to the rise in interest payments on the outstanding debt). It should also be noted that the deficit of the provinces is falling in this period, reaching a balanced situation in 1997, as shown in Graph 1.

The public debt before the economic depression

We now look at the evolution of the public liabilities to complete our description of the fiscal situation in the first two periods considered so far.

As already mentioned, there is a significant discrepancy between the figures of debt variation throughout the decade and what can be deduced from the consolidated deficit of the public accounts.

In the Table 5, below, we quantify this discrepancy for the three phases we are characterizing and we also identify the main explanations.

It can be observed that the main discrepancy appears precisely in the first phase, up to 1994. The consolidated liabilities of the National Government and the provinces increased then by about 22 billion dollars above what could be explained by the public deficit. And this happened in spite of mass privatizations in the same period that reduced the outstanding debt by more than 7.1 billion dollars, and the debt reduction of more than 2.3 billion that resulted from the Brady Plan.

However, as the same Table shows, the bulk of the discrepancy in this phase resulted from the recognition, during the first years of the currency board regime, of liabilities (with both retired workers and suppliers of the public sector) mainly accrued in prior periods.

Even so, we must stress the fact, as it is evident in Graph 2, that the public debt stays basically stable in the early nineties (measured as a percentage of GDP), below 30% in the case of the total debt, and under 25% for the foreign obligations. In fact, the latter was slightly declining, as a consequence of both the appreciation of the peso and the fast expansion of the aggregate product.

In a nutshell, the 1991-94 period was characterized by a strong improvement in the public accounts and by the non-traumatic recognition of a significant amount of liabilities accrued in previous years, that is, by a normalization of financial obligations many of which were already under litigation. If there is something that clearly emerges from these figures (particularly Graph 2), it is the absence of any signal of difficulties regarding fiscal sustainability by 1994, when the economy was hit by the external shock of the Mexican crisis. [12]

In the ensuing phase, the debt-to-GDP ratio jumps upwards. But as the Graph 2 also shows, the rise is concentrated to 1995. It was in part an effect of the recession (that raised that ratio), but the main cause was the foreign financial support package coordinated by the IMF that was of considerable help to overcome the recession and the financial crisis that followed the Tequila effect.

The same graph suggests that after that negative shock had been left behind, in the expansionary phase of 1996-97, the public debt-to-GDP ratio seemed to stabilize again on a low level by any international comparison: close to 35%. Foreign debt even falls slightly as a proportion of the aggregate product.

Once again, and in spite of the higher current deficit and the imbalance of the PPS, the evidence seems to be far from indicating a risk of fiscal sustainability problems around 1997, before the beginning of the depression.

The economic depression of 1998-2001

The fiscal setting we have described so far changed substantially from 1997 on, particularly after the Russian crisis of August 1998, which triggered an economic contraction that happened to be unusually long.

Graph 1 and the Table 3 can help to understand some central features of the fiscal evolution in the new phase.

Firstly, the consolidated fiscal deficit takes a steep upward trend that would bring it to about 6 percentage points of GDP in 2001. This happened despite the several rounds of contractionary (and thus, procyclical) fiscal policies implemented in the period (in late 1998, late 1999 and 2000) aiming at reversing the negative trend. [13]

Table 3 compares the average position of the public sector during the 1998-2001 period with that of 1994.

The average annual deficit of 1998-2001 (that amounted to 11,188 million dollars on an accrual basis), was 6,841 million dollars greater than that of 1994.

Where did this increase come from? As can be seen in the table, the main burden stems from the rise in interest payments (+ 6,784 million dollars) and, secondly, from the widened financial gap of the public pension system (+ 4,867 million). A smaller figure is due to the greater provincial unbalance (+ 321 million), although it is true that this was following a rising trend, as can be seen in Graph 1.

The table also shows that the procyclical fiscal measures, if inappropriate, were not ineffective. They made possible to reach a substantial increase in the primary surplus (without considering the PPS), of more than 5 billion dollars yearly. However, as we have already stressed, this was not enough to offset the increase in the flow of interest payments and the imbalance of the public pension subsystem.

Table 3
Comparison of the average public deficit
of the 1998-2001 period with 1994 figures
(on an accrual basis, in million dollars at current prices)

(1) Change in global deficit	+ 6841
(2) Change in the deficit of the public pension subsystem	+ 4867
(3) Change in the primary deficit of the National Government	- 5131
(4) Change in the primary deficit of the provinces	+ 321
(5) Change in interest payments of the consolidated public sector	+ 6784

(2) See definition in Table 2.a.
(3) Without considering the public pension subsystem.
Source: our own calculation based on Cetrángolo et al. (2000)
and Ministerio de Economía.

The explosive trend in interest payments can be clearly observed in Table 4. The ratio of interest payments to total tax receipts, which was already increasing after 1994, started to move sharply upwards in 1996. In 2000, before the outbreak of the crisis, it approached 19%, thus doubling the level of the mid-nineties. This was in part a consequence of the fall in tax receipts due to the recession. But it substantially originated in the rise of the average interest rate on the public debt. This rate can be approached as the quotient between the annual flow of interest payments and the outstanding stock of financial liabilities at the end of the previous year. We include this estimation in Table 4. The average interest rate jumped upwards from 5.8% in 1996 to 9.4% in 2001.

The public debt during the depression

The above mentioned rising trend of the interest rate was closely correlated with the trend of the country risk premium in 1997-2001. It had a clear impact on the total deficit, as we have described above. It also triggered the explosive trend of the public debt from 1997 on (see Graph 2).

Our description shows that this was substantially a financial problem, a debt trap in a context of turbulence in foreign financial markets that had a negative impact on the country risk premium. In 1997, before the Russian crisis, the consolidated deficit was below 2% of GDP (Graph 1) and falling, and the public debt did not surpass 35% of GDP.

Apart from some loosening of the fiscal discipline (especially in the provinces) during the last years of Menem's administration, the above description does not suggest that the crisis is the result of a discretionary fiscal policy or a complete relaxation of fiscal discipline, as it is often suggested. On the contrary, we have already seen that the active procyclical policies implemented along the period generated important primary surpluses (without considering the PPS), well above those obtained in the early nineties. These policies added to the factors behind the deflationary scenario of the period, but could not stop the increase of the public debt.

Additionally, as a reflection of the increasingly difficult access to foreign funds, the domestic debt of the public sector (with local banks and private pension funds) acquired a more important role, as can be seen in the Graph 2. Meanwhile, the amount of foreign debt tended to stabilize, even if the ratio foreign-debt-to-GDP kept rising moderately, mainly as a consequence of GDP contraction. The ratio between the consolidated public debt and GDP surpassed 55% in 2001. It had risen by 20 percentage points in only four years.

Table 4
Consolidated tax burden and
weight of the interest payments
in the public debt (in percentages)

Year	Total tax burden (% of GDP)	Average interest rate on the public debt (%) (1)	Ratio of interest payments to tax receipts (%)
1991	18.5	NA	5.6
1992	21.6	6.6	8.0
1993	21.9	5.0	5.9
1994	21.9	5.5	6.7
1995	20.7	6.1	9.3
1996	20.0	5.8	9.5
1997	20.8	6.7	11.0
1998	21.2	7.6	12.3
1999	21.4	8.3	15.9
2000	21.7	8.9	18.7
2001	21.2	9.4	23.3

(1) Estimated as the quotient between interest payments of every year and the outstanding public debt at the end of the previous year.
Source: elaborated with figures from Gaggero (2003) and Ministerio de Economía.

Table 5
Fiscal deficit and increase in the public debt
(in million dollars at current prices)

Period	Deficit of the consolidated public sector (1)	Increase in the gross public debt (2)	Discrepancy (2) - (1) = (3)	Liabilities accrued in prior periods (4)	Effect of variations in exchange rates (5)	Increase in public financial assets (6)	Debt swaps through privatizations (7)	Other factors (8)
1992-1994	3,247	25,094	21,847	22,859	-599	3,205	7,111	3,493
1995-1997	20,873	22,659	1,786	3,892	-3,381	2,842	40	-1,527
1998-2001	44,754	52,817	8,063	5,947	-5,665	-152	0	7,933
Total	68,874	100,570	31,696	32,698	-9,645	5,895	7,151	9,899

(2) does not include the Central Bank debt.
(2) - (1) = (3)
(3) = (4) + (5) + (6) - (7) + (8)
(8) includes minus 2,323 million dollars in 1992-94, corresponding to the estimation of the net reduction in the outstanding debt as a consequence of the Brady agreement.
Source: our own estimations based on Melconián et al. (1997), Cetrángolo et al. (2000), Teijeiro (1996) and Ministerio de Economía.

2. Macroeconomic policies in the nineties and the impact on prices and growth. [14]

In the following pages we describe the stylized facts of the Argentine macroeconomic performance throughout the nineties. We also present an interpretation of the way the economy worked under the set of rules we have already described.

2.1. Inflation, relative prices and activity level

The remarkable anti-inflationary impact of the program can be observed in Graph 3.[15] The monthly increase in the Consumer Price Index had averaged 12% between March 1990 and March 1991. Although large, this inflation rate stayed relatively stable for several months and tended to decline in late 1990.

Nevertheless, at the beginning of the following year a new run against the peso brought the economy again to the brink of hyperinflation. Following the path of the exchange rate, the CPI rose by 24% in February. At that moment, a new Economic Minister announced a program based on the fixing of the exchange rate and the adoption of a new monetary regime.

The deceleration of prices was instantaneous. The fixing of the exchange rate had a remarkable impact on the markets of tradable goods. The Wholesale Price Index is representative of those. WPI inflation fell immediately to figures of about 1% by month and falling. This index experienced a total increase of 12.5% from the beginning of the program to December 1994. This is slightly above 3% yearly.

In contrast, the CPI rose by 58.5% in the same period. The deceleration of consumer prices was also abrupt (from 12% to about 1% monthly), but in this case the "residual inflation" that accumulated throughout the first three years of the program was not negligible.

This reflects the fact that non-tradable goods and services have a considerable weight in the CPI (but not in the WPI). In other words, this phenomenon is a reflection of the change in relative prices in the period. As we have already mentioned, this change continued under the currency board regime, but at a much slower pace than in the year before its implementation.

The divergence between CPI and WPI faded away by late 1994. From then on, until the final crisis of the macroeconomic regime in December 2001, the inflation rates were always close to zero with some small negative deviations. As a whole, throughout these seven years, the accumulated change in CPI and WPI happened to be small and negative, of about -1.5% in both cases.

The changes in relative prices we mentioned above can be observed in Graphs 4 and 5 and in Tables 6 and 7.

Graph 4 and Table 6 show the real exchange rate. The real parity had reached extraordinarily high levels during the currency runs that triggered the hyperinflationary crises of 1989 and 1990. But then, during this year, the real exchange rate plummeted. Consequently, before the launch of the stabilization plan it was almost 50% below its average level of 1986-90. In comparison, the additional fall registered from the first quarter of 1991 on was of considerably lower magnitude, as we mentioned above.

An extended period of stability followed, in which the variations of the real exchange rate were minor, until the fall of the monetary regime in December 2001.

Graph 5 and Table 7 present the average wages in US dollars and in real terms in manufactures. Once again, the drastic change in wages in US dollars at the beginning of the period stands out. The moment before the launch of the program, wage earnings measured in this currency were 50% higher than the 1986-90 average. The ensuing changes were,

again, minor. The real wage in manufactures had, however, a very different behavior, also reflecting the appreciation of the peso. Given that the prices in US dollars of non-tradable goods and services went up considerably, and taking into account that these goods and services have a significant weight in the CPI, wages deflated by CPI rose only slightly at the beginning of the program, after a fall in the months before.

Table 6
Average real exchange rate
In different periods
(second semester of 1986=1)

Period	Real exchange rate
1986-1988	1.16
1986-1990	1.22
1990:4-1991:1	0.62
1991:2-1994:4	0.52
1995-2001	0.52
2002	1.48

Source: our own estimations based on data
from INDEC and Banco Central.

After experiencing a moderate increase in the first years of the currency board regime, the average real wage in manufactures showed a slightly declining trend throughout the second half of the decade.

Table 7
Average real wage in manufactures
in different periods
(second semester of 1986=100)

Period	1986-1988	1986-1990	1990:4-1991:1	1991:2-1994:4	1995-2001
Real wage (*)	90.8	82.9	68.8	68.4	64.8
Wage in US dollars (**)	80.6	73.9	112.3	133.4	125.8

(*) Average wage deflated by the CPI.
(**) Average wage in US dollars of constant purchasing power (deflated by the US-CPI).
Source: our own estimations based on data from INDEC.

In the early nineties, the success of the stabilization effort was accompanied by a fast economic recovery that lasted for about five years. Indeed, from the beginning of 1990 until December 1994 the rate of GDP growth was slightly below 8% yearly. This outstanding performance was in sharp contrast with the economic instability and stagnation of the prior period. Thus, the government that was implementing the package of stabilization policies and reforms presented these achievements as a kind of new foundation of the nation. The program also got a highly favorable public opinion and this had a bearing in its consolidation.

However, the growth success happened to be much less enduring than price stability. Far from following a sustained growth trend, the economy depicted two neat cycles throughout the nineties. The evolution of GDP is presented in Graph 6.

The prolonged initial expansion was interrupted by the negative impact of the Mexican crisis of December 1994. A short recession ensued in 1995. After three quarters of contraction, GDP growth resumed. The expansionary phase of the new cycle was shorter than in the early nineties: from mid-1998 on, in part as a consequence of a new external shock (the Russian crisis of August of that year and its impact on international capital flows), a protracted contraction started. It went beyond the end of 2001, when a dramatic crisis brought the currency board regime to its end.

Therefore, in spite of the "miraculous" aspect of its first years, the final assessment of the macroeconomic regime of the nineties is frankly disappointing, at least in terms of growth. The average GDP growth rate was only 3.18% a year in the period 1990-2001. This performance falls behind the average growth rates reached between 1960 and 1975 (when the economy expanded by more than 4% a year, on average). But, additionally, the nineties' average resulted from a yearly growth of 7.6% between 1990 and 1994, followed by a 0.8% a year in the long 1994-2001 period.

Between the second quarter of 1998 (when GDP reached its maximum value in the decade) and the last quarter of 2001, the decline in aggregate output was 15.6%. It has to be stressed that two thirds of this fall happened in the second semester of 2001. Thus, this fall took place before the depreciation of the peso and the breaking of nominal contracts, factors that are often interpreted as the main cause of the output fall. After the devaluation, the contraction continued for only one quarter, the reversal of the negative trend took place in the second quarter of 2002.

2.2. The balance of payments, capital flows and the external debt

The interpretation of the dynamic behavior of the economy under the currency board regime requires a careful analysis of the evolution of the external accounts. Actually, the result of the balance of payments plays a determinant role under this monetary rule: the path of both domestic liquidity and bank credit (and thus the evolution of aggregate demand) are in close and direct connection with the variations in foreign reserves. Because of that we present a detailed description of the main features of the Argentine external accounts in the nineties next.

The solid line in Graph 7 shows the behavior of the trade balance in real terms. The dotted line is, on the other hand, the difference between actual GDP (seasonally adjusted) and its trend (calculated using the Hodrick-Prescott filter, and represented by the dotted line in Graph 6).

Two main features stand out. Firstly, the clear counter-cyclical behavior of the trade balance, which results from the strong and positive correlation between the volume of imports and the output level.

Secondly, the economy passed from having sustained trade surpluses in the eighties to the deficit zone in the nineties. In this decade, trade surpluses were reached only in periods of recession: in 1995, after the Tequila effect, and during the contraction of the late nineties.

The trade balance deteriorated swiftly during expansionary periods, thus increasing the foreign borrowing needs of the whole economy. This can be observed, in particular, during the long expansionary phase that began in 1990. During that period, the combination of demand and output expansion with trade liberalization and real exchange rate appreciation brought the trade balance from a surplus of more than 6% of GDP in 1990 (according the national accounts at current prices), to a deficit of almost 3% of GDP in 1994. Thus, there was an acute change equivalent to more than 9 percentage points of aggregate output, which shows the enormous magnitude of the impact made possible by the modification in the foreign context.[16]

Apart from the trade in goods and real services, the current account of the balance of payments includes net payments on investment (interest, profits and dividends). The result of these transactions is shown in Graph 8. It can be seen that, in contrast with the trade balance, net interest, profits and dividend payments have a weak relation with the cycle.

Net interest payments, in particular, follow a well-defined upward trend during the nineties, which also reflects the increasing external debt (see Graph 12).

The current account, which results from the evolution of both the trade balance and net investment payments, also shows a counter-cyclical pattern (explained by the behavior of the trade balance), but it is smoothed because of the inertial behavior of the net-investment-payments account. Graph 9 illustrates that those fluctuations in the current account occurred always in the "deficit zone" in the nineties. However, after the crisis of the currency board regime the current account balance turned positive.

Capital flows and macroeconomic dynamics under the currency board regime

Graph 9 presents the main accounts of the balance of payments and illustrates some important aspects of the dynamic behavior of the economy under the currency board regime.[17]

The significant and positive changes experienced in international financial markets at the beginning of the nineties, played a crucial role. International interest rates dropped abruptly and there was a renewed access to foreign credit. In 1991 capital inflows started to gain significance. Apart from "push factors" which explained most of the capital flows from the developed world to the emerging markets (especially the drop in interest rates), internal factors also influenced this pattern. These included, in the Argentine case, the privatization process (which began in 1990), the financial liberalization and the launch of the stabilization program.

Thus, in the early nineties, net capital inflows generally surpassed the current account deficit, allowing for a sustained and quick accumulation of foreign reserves, whose initial stock was very low. Reserves accumulation fueled the increase in the quantity of money and credit (see Graph 11) which, accompanied by a drop in interests rates (both international and internal), led to an expansion in aggregate demand and output. The latter interacted, in turn, with the evolution of the balance of payments, because an increase in output stimulates imports, which contribute to the deficit in the current account. The trade liberalization and exchange rate appreciation acted in the same way.

The foreign capital-induced growth continued until 1994. In that year, there was a rise in international interest rates (following the decision of the Federal Reserve to increase the discount rate from February on), which began to affect capital inflows negatively and, due to the continuously increasing deficit in the current account, foreign reserves stopped growing.

In the expansionary phase, the vulnerability of the economy to external shocks had increased. The current account deficit tended to grow and foreign debt accumulated. The dependency on capital inflows became more acute. In other words, the macroeconomic setting became more vulnerable to changes in the availability of foreign funds. This source of vulnerability was accentuated in the Argentine case because the regime entailed a complete liberalization of capital flows. The Argentine regime precluded the use of instruments to regulate or influence their composition, in contrast, for instance with the Chilean setting at that time.

Thus, in the early nineties, until 1994, the Argentine economy evolved, like Mexico, to a position of higher relative vulnerability to external shocks. Reflecting this phenomena, in 1994 the country-risk premium increased in both countries by more than in other economies of the region like Chile and Brazil. By 1994 the latter had already started the stabilization and the market oriented reform processes.

The rise in interest rates and the mechanics of the currency board regime could have led to a contractionary phase (as it happened in 1998). But, late in 1994 Mexico suffered a run against its peso that ended in a strong depreciation. Contagion immediately hit Argentina. Therefore, instead of experiencing an endogenous adjustment following the typical mechanism of a currency board regime, the external shock led to a rapid and massive capital outflow at the beginning of 1995, with a sharp increase in interest rates. (The evolution of the country-risk premium is shown in Graph 13.) Foreign reserves fell and a liquidity contraction ensued. Aggregate demand showed a similar pattern. In this phase, unemployment rate experienced a substantial increase of 6 percentage points.

The recession of the mid-nineties was short. A strong financial-support package of about 11 billion dollars structured with the coordination of the IMF helped to change the state of expectations. Besides, through different mechanisms, and regardless of the limitations imposed by the currency board regime, the government engaged in a very activist policy to back the banks and stop the deepening of the financial crisis caused by the bank run.

Due to the favorable effects of the external financial support, it was possible to preserve the monetary regime. In late 1995 a new expansion was already starting. The monetary mechanism behind this recovery was the same as the one experienced in the early

nineties. There was renewed access to external funds. Thus, the amount of capital inflows began to surpass the current account deficit (which had been reduced as a consequence of the recession), foreign reserves started to grow again and with them the quantity of money and credit.

The elements of the cyclical dynamics were once again in motion. The expansion phase that followed showed the same stylized facts as the first one, but this time it lasted shorter. The country risk premium jumped in mid-1997, after the devaluation in Thailand, and growth decelerated. The Russian crisis of 1998, which had a strong impact on Brazil, brought the expansion to an end. Capital inflows fell from that moment on and the accumulation of reserves decelerated (it would become negative afterwards), as can be seen in Graph 9. Consequently, a phase of contraction started in mid-1998.

Foreign debt, public and private

The second cycle of the nineties was different from the first one in many respects. We would like to highlight here one of them: the different roles played by the public and private sectors in the generation of the capital inflows that fed the accumulation of reserves.

Graph 10 shows the net capital inflows by sector. It can be observed that during the first economic expansion, in the early nineties, private inflows were predominant in spite of the fact that the privatization of the most important state-owned companies took place in that period. Capital inflows to the public sector became significant during the recession of 1995. These funds, obtained trough the foreign financial support package already mentioned, helped to alleviate the negative effects of the shock.

Since then, capital inflows to the public sector maintained a high level until the end of the period. Thus, it is clear that the second expansion in the nineties was bolstered mainly by capital inflows to the national government. Meanwhile, net capital inflows directed to the private sector recovered only slowly. From mid-1998, funds directed to the private sector stopped flowing in. Actually, an abrupt outflow started in 2001.

2.3. The end of the currency board regime

We do not intend here to present a detailed description of the last days of the macroeconomic regime. As usually, the crisis entailed a quick succession of events, with

many contradictory policy decisions (especially throughout 2001). We will only mention some crucial aspects of these.

In December 1999 a new government took office. Since then, macroeconomic policies were dominated by the idea that the main cause of the economic depression was not the exchange rate appreciation and the financial vulnerability to external shocks, but fiscal mismanagement. A huge fiscal deficit and the accumulation of public debt were blamed as the origin of the critical situation. It was diagnosed that these factors, together with the negative trade and financial shocks, had impaired the expectations regarding the capacity of the government to pay its external obligations. This forestalled the access to private credit sources, thus blocking the operation of the monetary mechanism that had triggered previous expansions. This vision led the government to adopt a tight fiscal policy as a way to, paradoxically, take the economy out of the recession. Signals of drastically tight fiscal policies, it was thought, would "buy credibility". This would, in turn, favor a reduction in the country-risk premium and restore access to foreign private credit markets. Then, domestic credit and aggregate demand would also recover.

Although largely dominant, this interpretation, which emphasizes the fiscal aspects as a cause of the crisis, is not particularly convincing, as we have already discussed above. As we have described, the deterioration in the fiscal accounts in the 1998-2001 period can be explained as an endogenous phenomenon rather than the consequence of a fiscal policy out of control. It originated mainly in the rise in interest rates, the reduction of tax revenues due to the recession and also in the persistent deficit of the pension system after its reform in 1994.

Furthermore, if it is true that the foreign debt of the public sector increased significantly in that period, its role deserves some additional consideration. An important conclusion follows from the comparison of the public debt increase with private indebtedness. The following table shows some illustrative data.

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Table 8
Change in foreign debt and foreign assets
by sector and period
(in million dollars)

</div>

Period	Foreign debt by sector				Foreign assets by sector	
(quarters)	Public	Financial	Private		Financial	Private
	(1)	(2)	(3)	(2) + (3)		
1991:4 – 1994:4	8,529	5,725	10,321	16,046	1,728	566
1994:4 – 1995:4	5,924	2,953	4,361	7,314	823	11,174
1995:4 – 1998:2	9,221	11,578	15,607	27,185	15,305	15,050
1998:2 – 2000:4	8,438	-555	3,139	2,584	-4,272	12,040
1991:4 – 2000:4	**32,112**	**19,701**	**33,428**	**53,129**	**13,584**	**38,830**

(1) Including the Central Bank.
Source: Ministerio de Economía.

The increase in foreign public debt over the entire period surpassed 32 billion dollars. However, this amount was less than the increase in the foreign financial obligations of the non-financial private sector (column 3 of the table), which was above 33 billion dollars. If we add the increase in the external liabilities of the domestic financial sector, the amount jumps to more than 53 billion dollars. Thus, the increase in the amount of foreign financial obligations of the state (including the Central Bank) explains less than the 40% of the change in the total external debt during the period.

The public sector played, as it was described above, a crucial role in the financing of foreign reserves accumulation in the nineties. The increase in the foreign debt of the private sector was not less important, but a significant part of it had a counterpart in private outflows of funds. In effect, not only the private debt experienced a considerable increase, but also the external assets of the private sector. Table 8 shows that foreign assets grew by more than foreign liabilities in the case of the non-financial private sector, reflecting again that this sector's net demand of foreign currency was positive in the aggregate.

The accumulation of foreign assets by the private sector was small in 1991-94. It increased during the second half of the decade, after the Tequila shock. As it can be seen in the table, in the expansionary phase extended from late 1995 to mid 1998, the private debt increased rapidly. It grew by more than 15 billion dollars (for the non-financial sector). But private foreign assets went up by a roughly similar amount, which provides again evidence that this sector was not a net supplier of external financing.

Successive packages of tight fiscal measures were applied during 2000 and 2001, grounded on the fiscalist view of the crisis. The expected "confidence shock" did not materialize. With the economy stuck in a deep recession and caught in the debt trap, these

rounds of contractionary fiscal policies reinforced the deflationary scenario and the pessimistic expectations, as we have described in the previous section.

During 2001 the government attempted to reinforce the fiscal measures with some financial initiatives on the external front. It obtained foreign financial support and implemented important debt swaps aimed at convincing the public that there was no risk of default on the financial obligations. Thus, at the beginning of 2001, an important package of local and external support of about 40 billion dollars was announced (the "blindaje"). Later on, an important and expensive debt swap ("megacanje") was implemented in mid-2001. Finally, there was a voluntary (although it would be better to call it "induced", semi-voluntary) swap of public debt of the national government and the provinces in November. This was directed at domestic bondholders (mainly banks and the private pension funds). Most of these actions were supported by the IMF: it led the "blindaje", gave its approval to a new letter of intent in late April and to a new financial support in August. These efforts had very short-lived effects. The run against the peso became more intense from March 2001 on. In March and April bank deposits fell by about 6,700 million dollars and the stock of foreign reserves by 7,900 million (this amounts to a drop of 22%).

Attenuated in the following two months, the run re-started in July-August and again in November. By the end of that month the withdrawal of deposits was very intense and led the government to establish, from the beginning of December on, severe restrictions on the retirement of cash from banks as well as on capital movements. The objectives of the measures were to avoid the general bankruptcy of the banks and the violation of the currency board monetary rule. No bank, domestic or foreign owned, complained for that. But the main objective of the measures was to constrain the demand for foreign currency, preserve the reserves and avoid devaluation, i.e. the formal abandonment of the Convertibility regime. Nevertheless, the measures represented actually the end of the regime. The same person who had established the regime in 1991, Minister Domingo Cavallo, was responsible for announcing its end. He had returned to office in March 2001 as the man who was expected to be able to fix the problems of the regime he had implemented ten years before.

The restrictive financial measures of December contributed to deepen the already strong social and political tensions. In a few days of social unrest and political commotion, the country experienced the resignation of the government and a series of ephemeral presidents. The country formally announced the default on its public debt and abandoned the currency board regime and the one-to-one parity of the peso to the US dollar.

3. The labor market

3.1. Stylized facts: employment, underemployment and unemployment

In this section we describe the evolution of aggregate employment and unemployment over the nineties in the light of the macroeconomic processes analyzed above. The series to be examined here refer to the urban population and are based on a permanent household survey ("Encuesta Permanente de Hogares" –EPH, INDEC) conducted in May and October every year.

Unless otherwise stated, the series in this section are all defined as percentage ratios of the total urban population. They are:

PART= participation rate,

EMPL= rate of employment,

FTEMPL= full-time employment rate,[18]

SUB = involuntary underemployment (or sub-employment) rate;

U = unemployment rate.

Therefore:

EMPL = FTEMPL + SUB,

PART = EMPL + U.

Graph 14 shows the evolution of these variables since the beginning of the eighties.

The rate of full-time employment shows a markedly declining trend that becomes steeper from the beginning of the nineties. From about 35% to 36% in the early eighties, FTEMPL fell to 32% in 1990:1 and to 27.6% in 2001:2.[19]

In addition to the negative trend, FTEMPL also shows a clear correlation with the macroeconomic cycle. Like GDP, it goes through two neatly defined cycles in the nineties. It increases from 1990 on, then shows a sharp decline that bottoms in 1996 to climb again with the second economic expansion in the nineties and contract once more from 1998.

However, it is important to note that the peak of FTEMPL in the expansionary period in the early nineties was reached in 1992:2, well before the turning point in the GDP (observed at the end of 1994 after the Mexican crisis). Therefore, in 1993 and 1994 the ratio of full-time jobs to population was dropping while output was still increasing at a very fast pace.

From that peak (34.14%), FTEMPL fell about 5.2% to the bottom point in 1996:2. It recovered by about 2.4% to reach a new peak in 1998:1. Note that this figure is well below the maximum of the former expansion. The ensuing decline followed the recessionary trend both in its moderate phase -until mid 2001- and during the deep fall that took place in the second semester of that year. By the end of the currency board regime, in 2002:2, FTEMPL was 6% below its 1991:1 level.

The ratio of total employment to population (EMPL) also shows a declining trend at the beginning of the nineties, but considerably less steep than FTEMPL, meaning that the rate of sub-occupation (or involuntary underemployment, SUB) tended to increase in the period. The rise in SUB was stronger in 1999-2000, causing the EMPL trend to bend slightly upwards.

Furthermore, as we will show below, SUB has a counter-cyclical behavior, increasing when FTEMPL falls and rising when the latter declines. Therefore, EMPL has a weaker connection with the macroeconomic cycle than FTEMPL.

Finally, the participation rate of the population (PART) shows a markedly positive trend, not correlated to the macroeconomic cycle. From about 38% in 1980, it grew to 39% in 1990 and jumped again to 42.8% in 2001:1. In the convertibility period the PART tended to increased by about 1 percent of the urban population every three years.

The main reason behind this behavior was a sustained increase in women's participation in the labor force, whose level in Argentina is still lower than international standards.

As a result of both PART's positive and EMPL's stagnating trends, the rate of unemployment (U) tended to grow steeply in the nineties (see also the Graph 15), presenting a clear jump upwards in the period 1992-1995.

These stylized facts about labor-utilization indicators can be organized in a simple labor-market model with a demand-driven employment level (where labor demand depends on both output and relative prices), a counter-cyclical underemployment function and an exogenous participation rate (that follows a positive trend, as we have just showed). Thus, the unemployment rate results from the difference between participation and employment demand. We present the model next.

3.2. An aggregated model of the labor market[20]

The preceding description shows that the demand for labor, represented particularly by FTEMPL, underwent a deep change in the nineties. Even if the ratio of full-time jobs to population was already slowly falling in the eighties, the next decade deepened this trend.

Many factors contribute to explain a distinct change in production technology and the organization of productive activity at the firm level in the nineties. Undoubtedly, the opening to trade and the exchange rate appreciation rank among the most important.

The observed changes in the demand for domestic goods and in relative prices had an impact on labor utilization by firms. This is illustrated in Graphs 16 and 17. The latter presents the quotient between GDP and the full-time employment ratio. From a stagnating trend in the eighties, the curve shows an impressive upward jump between 1990 and 1996 and stagnates again later.

As we have already suggested, the new macroeconomic setting in the nineties did not emerge gradually. The main institutional changes and the shift in relative prices all took place essentially at the beginning of the period. With that in mind we suggest that the adjustment of the demand for labor to the new setting in the nineties can be conceived of as a gradual adaptation to the new environment defined from the beginning. This problem can be formally handled in the following way.

Firstly, we assume a demand for labor in the form:

$$\log N = \alpha \log YR + \gamma \log (W/PK) + \delta,$$

where N stands for employment, YR for real output and W/PK is the price of labor relative to capital. We compare two points in time. Let $t = 0$ represent the time before the changes of the nineties, i.e. the eighties. And $t = 1$ represents the time when the process of adaptation to the new conditions could be considered almost completed, let's say the present. So we have:

$$\log N_0 = \alpha \log YR_0 + \gamma \log (W_0/PK_0) + \delta_0,$$
$$\log N_1 = \alpha \log YR_1 + \gamma \log (W_1/PK_1) + \delta_1,$$

Thus:

$$\Delta \log N = \alpha \Delta \log YR + (B_1 - B_0),$$

with $B_0 = \gamma \log (W_0/PK_0) + \delta_0,$ and
$\quad B_1 = \gamma \log (W_1/PK_1) + \delta_1.$

Considering that relative prices changed at the beginning of the period and then remained fairly stable at the new level, we assume that (B_1-B_0) follows a gradual adjustment with a constant step throughout the period. That is:

$$d(B_1 - B_0) = \beta, \qquad \text{from where} \qquad \int \beta = (B_1 - B_0).$$

Therefore, the employment equation can be formulated as:

$$d\log N = \alpha \, d\log YR + \beta, \qquad \text{with} \quad \alpha > 0 \text{ and } \beta < 0,$$

where β represents the gradual adjustment of the employment level to the new conditions in the nineties.

In previous works[21] we presented econometric estimations of this model over the period 1980-2001:1, utilizing EPH data (representative of the urban population, as was explained above). The series are semi-annual, and the estimated equations for the nineties take the following form:

$$d\log FTEMPL = \alpha \, d\log YR + \lambda \, Dpost96 + \beta.$$

Therefore, our dependent variable is not the rate of variation of full-time employment. Instead, we explain the rate of change of FTEMPL, defined as the ratio of full-time employment to population.[22] But dlog FTEMPL equals the rate of variation of the number of people holding full-time jobs (dlog N) minus the rate of population growth (dlog POB), that can be considered roughly constant. Thus:

$$d\log FTEMPL = d\log N - d\log POB.$$

Thus, the estimated coefficient for β in the preceding equation will reflect the negative effect on FTEMPL of both the adjustment of employment to the new setting and population growth.

The dummy variable Dpost96 aims to reflect a new change in labor demand behavior after 1996. Therefore, this variable assumes zero values until 1996:2, and 1 thereafter.

The econometric estimations show the following results for the nineties. Firstly, the output-elasticity of FTEMPL (α) is positive and statistically significant. The estimated value is about 0.6. This elasticity implies that the full-time employment rate tends to rise

(fall) by roughly 1 p.p. for every 6% of increase (contraction) in GDP. The output-elasticity of full-time employment is higher in the nineties than in the eighties.

The estimated value of the parameter β is also statistically significant and negative. Its estimated level implies a contraction of FTEMPL of 2.9 p.p. yearly in the period 1991-96. This is the autonomous falling trend of FTEMPL resulting from the gradual adaptation of firms to the relative prices of the nineties.

Another important result refers to Dpost96. Its estimated coefficient has approximately the same absolute value as the estimated constant term β, meaning that the autonomous negative adjustment trend vanished by late 1996. Graph 17 illustrates these results: the full-time employment ratio by output unit falls almost continuously between 1991 and 1996 (the slope of the curve is determined by β) and tends to stabilize from 1996 on at a level that approximately equals the value of α. This suggests that the negative adjustment of full-time employment finished by late 1996.

To complete the description of the aggregate indicators of labor utilization we will now examine the evolution of underemployment, as represented by the rate of the underemployed persons to total urban population (SUB). As we have already mentioned, SUB has a counter-cyclical behavior, thus it is negatively correlated to full-time employment. This can be described by an equation of the form:

dlog SUB = η dlog FTEMPL

The econometrically estimated value of the coefficient η is statistically significant and negative: -1.4. This means that the rate of involuntary underemployment tends to fall (rise) by 0.2 p.p. every 1 p.p. of increase (fall) in the full-time employment rate. About one fifth of full-time employment increases comes from the involuntary underemployment. Thus, a rise (fall) of full-time jobs implies a lower rise (fall) of total occupation.

The change in total employment results from adding the change in full-time jobs to that in the involuntary underemployment:

dEMPL = dFTEMPL + dSUB

Furthermore, assuming the participation rate (dPART) to be exogenous , and taking dEMPL from the previous equation, the description of the labor-market variables we are examining in this section can be completed by obtaining the change in the unemployment rate as:

dU = dPART – dEMPL.

3.3. Employment contraction by sector

Full-time employment

We have previously examined the aggregate employment indicators produced by the national survey of urban households (EPH). The main urban area, the city of Buenos Aires and Greater Buenos Aires, is representative of about 37% of the entire urban population.[23] For reasons of data availability, we will focus on this subset of the sample to analyze the anatomy of the evolution of employment in this section.

We have just argued that a clear contractionary trend in the full-time employment ratio can be identified in the nineties. The following table presents this ratio by sector of activity in GBA.[24] The figures include the beginning and the end of the period, as well as the maxima and minima within it and the difference between the beginning and end (in the column on the right).

We have argued that the combination of trade opening and exchange-rate appreciation had a bearing on employment's contractionary adjustment in the nineties as a consequence of its negative impact on sectors producing tradable goods. In effect, the table confirms that the severe contraction in the full-time employment rate in manufactures explains most of the aggregate behavior.

The other two sectors with significant participation in full-time employment (commerce and other services) also showed negative figures, but much smaller. More precisely, in the period before the first semester of 2001, the contraction in this category of jobs in the industrial activities would have explained a reduction equivalent to what was observed at an aggregated level. The collapse in the level of activity in the second semester

of 2001 induced a more uniform distribution of the fall in full-time employment by productive sector, thus reducing the participation of manufactures in the decline in total employment over the whole period.

Table 9. Full-time employment rate by productive sector

(% of the total GBA population, by semester)

	1990:1	1992:2	1996:2	1998:1	2000:2	2001:1	2001:2	2001:2-2001:1 difference	2001:2-1990:1 difference
Manufactures	8,54	8,76	6,33	6,69	5,55	5,20	4,66	-0,54	-3,88
Construction	1,91	2,30	1,81	2,17	1,89	1,60	1,22	-0,37	-0,69
Commerce	6,60	7,17	6,22	6,15	6,55	6,00	5,79	-0,20	-0,81
Transp. and com.	2,75	2,43	2,93	3,00	3,05	3,01	2,72	-0,29	-0,03
Financial Services	2,38	2,59	3,33	3,66	3,74	3,26	2,93	-0,33	0,55
Other Services	7,95	7,70	6,56	7,62	7,49	7,32	6,94	-0,38	-1,01
Total	30,13	30,95	27,18	29,29	28,27	26,38	24,27	-2,11	-5,86

Source: INDEC.

Given the decisive impact of manufactures in the evolution of FTEMPL, we now examine employment in this sector in deeper detail.

Employment in the manufacturing sector

Additional information about manufactures can be obtained from the Survey of Industrial Firms published monthly by INDEC. The survey is national and includes about 1300 firms employing more than 10 workers. In Graph 18 we plotted the series of physical industrial output according to the survey, as well as the index of hours worked and the number of employed persons.

We explain the evolution of industrial employment with a model akin to what we used for total employment. Here we estimate the effect that the new setting of trade opening and exchange rate appreciation had specifically on job creation in manufactures. The labor-demand function resulting from the model for this sector has the following form:

d log Nind = α d log (YR) + s,

where Nind (industrial occupation) was alternatively defined as number of workers (Npers) or total hours worked (Nhour); YR stands for physical output, α is the output-elasticity of employment and s represents the gradual adjustment of industrial occupation to the new context established at the beginning of the nineties. Econometric estimations of this demand equation using quarterly data give the following results.

Firstly, the estimation of s is statistically significant and its value is about (–1%) quarterly. This implies an autonomous falling trend of industrial employment slightly above 4% yearly. The contractionary trend is visibly higher in this case than for total full-time employment. This is consistent with our hypothesis of a stronger negative effect in the sectors producing tradable goods.

Secondly, in contrast with what happened to total employment, the falling trend of employment in this sector did not vanish in the second half of the decade: it lasted to the end of the period.

Thirdly, the estimated output-elasticity of industrial employment is positive and significant. As with total employment, labor demand in the industrial sector changes in the short run with the level of activity. When employment is measured as the number of employed workers, the estimated elasticities are between 0.14 and 0.16. When it is measured as the number of hours of work they jump to 0.55 and 0.59.

The important difference between the estimated elasticities of number of workers and hours of work to changes in output reveals a labor-hoarding behavior. This hypothesis can be estimated directly making the hours worked by person a function of output:

d log (Nhoras/Npers) = α d log (YR) + u,

The econometric estimation of this equation shows that the pro-cyclical behavior of the average hours worked (that can also be observed in the Graph 18) is statistically significant. The elasticity is about 0.4.

This means that, facing cyclical variations in output, the labor market adjusts firstly through the number of hours worked and only then through changes in the number of workers. This behavior weakens the elasticity of unemployment to output.

Graph 1
Fiscal deficit in the nineties
(on an accrual basis, in % of GDP)
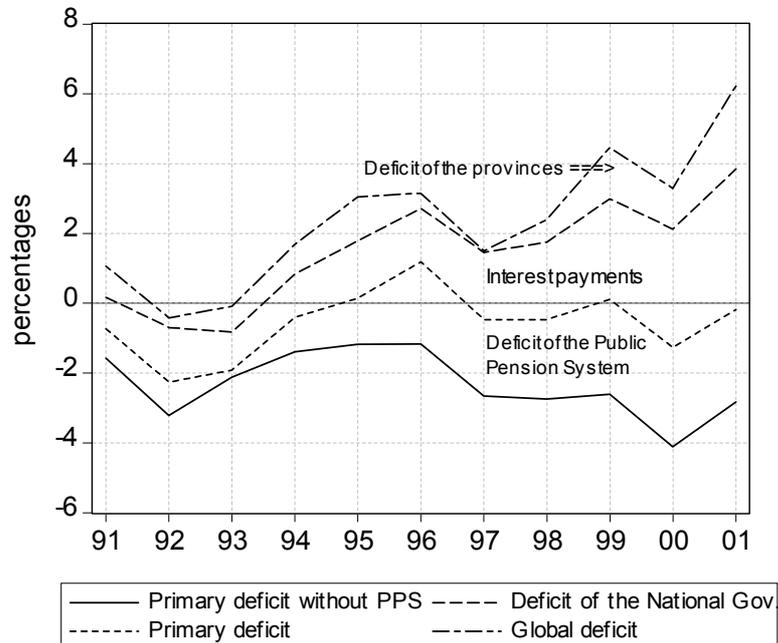
Source: idem table 2.a.

Graph 2
Evolution of the public debt
in % of GDP
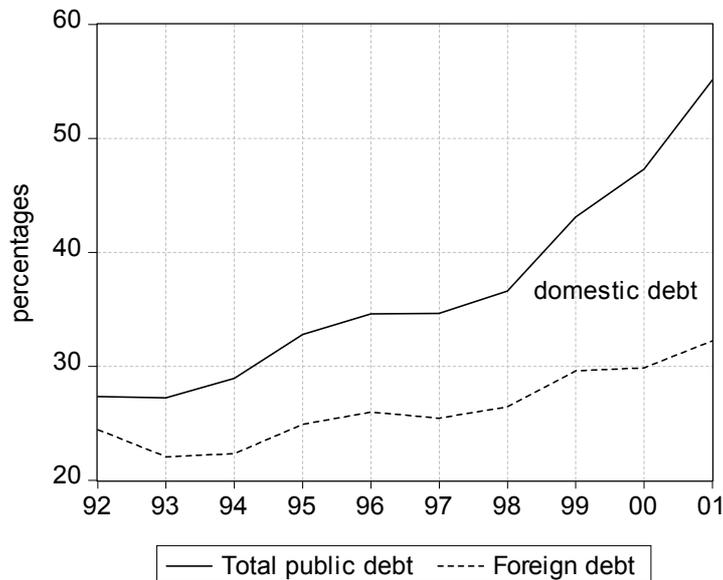
Source: Our own estimations on the basis of data from
the Ministry of Economy

Graph 3
Per capita primary expenditures of the
Consolidated Public Sector,
on an accrual basis, at constant prices,
and GDP per capita
(1991 = 100)

(1) Per capita primary expenditures deflated by the GDP deflator.
(2) Per capita GDP at constant prices.
(3) Per capita primary expenditures deflated by the CPI.
Note: these figures include some expenditures of the Trade Union's
Social Health Insurance Institutions, as well as those of some
Pension funds of the provinces still not transferred to the National
Government, items that are not included in the fiscal figures issued
by the National Treasury. Thus, the figures in the Graph are higher
than those of the Treasury (the difference amounted to about 3% of
GDP in the year 2000).
Source: Our own estimations on the basis of data from the Dirección
Nacional de Gastos Sociales Consolidados

Graph 4
Primary and total expenditures of the
Consolidated Public Sector and their trends,
in percentages of GDP
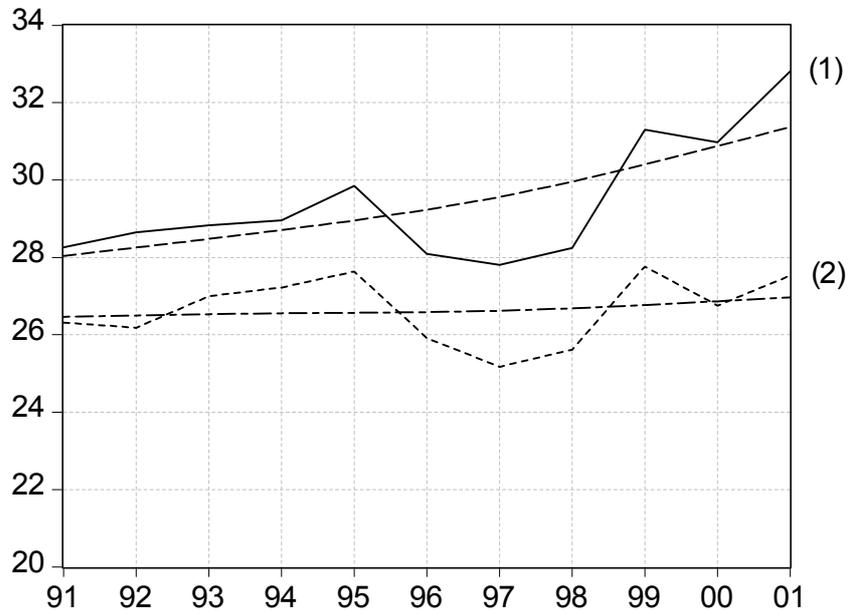
(1) Total expenditures as a percentage of GDP.
(2) Primary expenditures as a percentage of GDP.
Note: these figures do not include of the Trade Union's Social
Health Insurance Institutions, as well as those of some
pension funds of the provinces still not transferred to the National
Government, as mentioned in the notes to Graph 3.
Source: Our own estimations on the basis of data from the
Dirección Nacional de Gastos Sociales Consolidados

Graph 5
Quarterly rates of inflation (%)
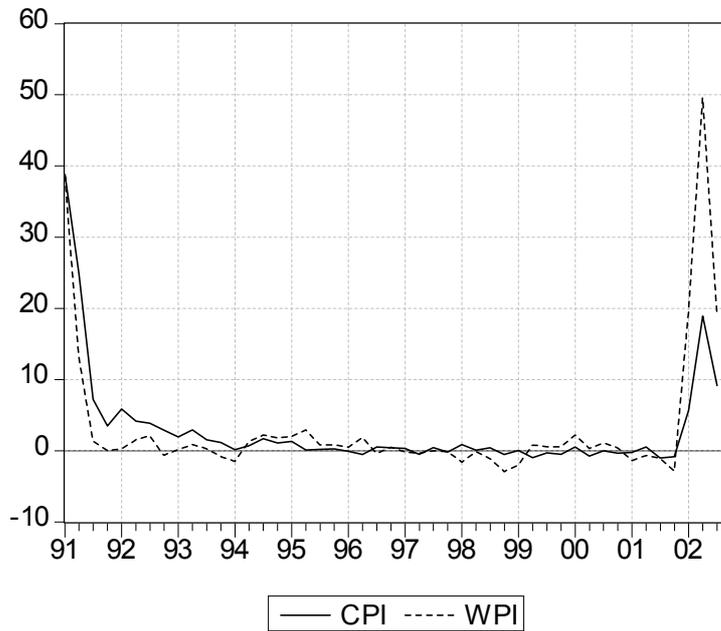
Source: Our own estimations on the basis of data from INDEC,
(Instituto Nacional de Estadística y Censos).

Graph 6
Real exchange rate
(Nominal exchange rate times US-CPI, deflated by
domestic CPI, and the Multilateral exchange rate,
second semester of 1986=1)
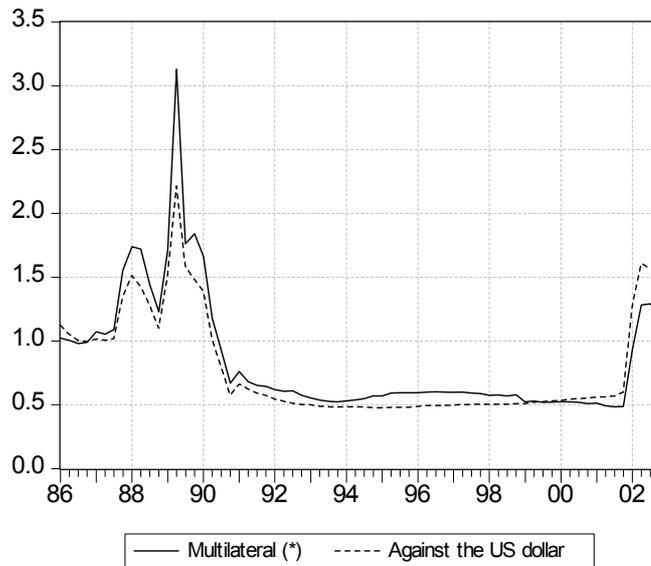
(*) See note on table 6.

Source: idem table 6.

Graph 7
Average real wage in manufactures (deflated
by CPI) and average wage in constant US
dollars (second semester 1986=1)
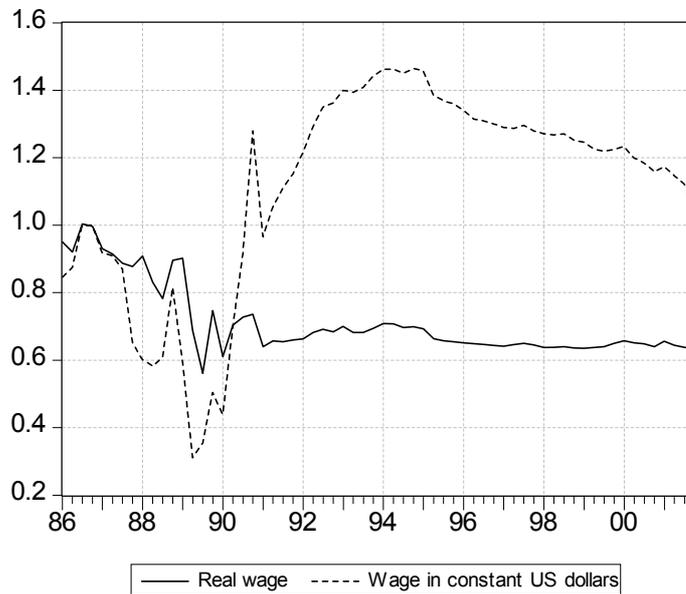
Source: Our own estimations on the basis of data from INDEC

Graph 8
Seasonally adjusted output and
the Hodrick-Prescott trend
(Quarterly data in logs, at constant 1993 prices)
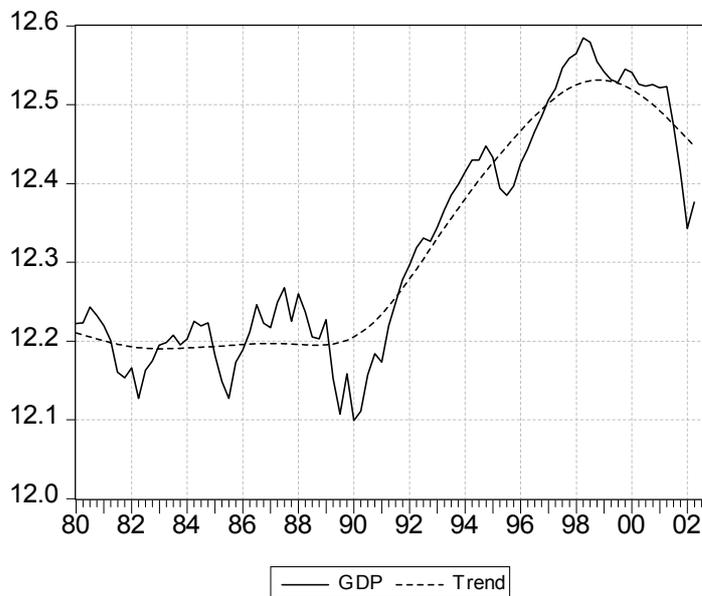
Source: Our own estimations on the basis of data from
the Ministry of Economy.

Graph 9
Detrended real output (in logs) and trade balance
(in millions of constant 2000 US dollars)

Trade balance ----- Detrended output
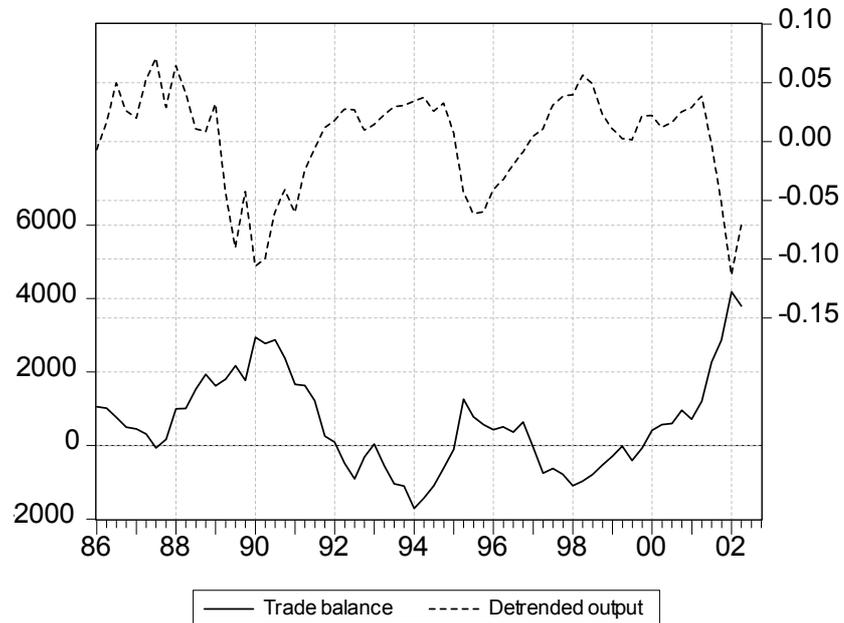
Source: Our own estimations on the basis of data from the
Ministry of Economy

Graph 10
Current account of the balance of payments:
net investment income payments
## (quarterly data in millions of constant 2000 US dollars)

Total net payments ----- Net interest payments
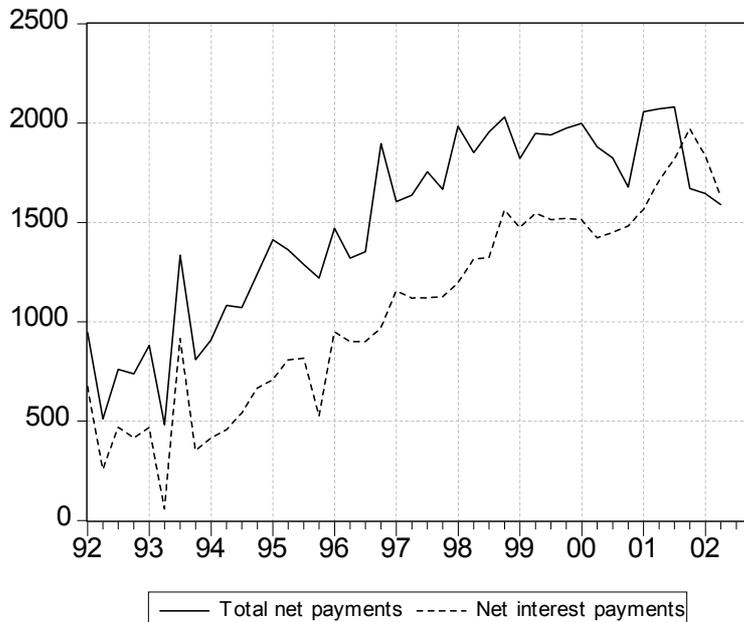
Source: Our own estimations on the basis of data from
the Ministry of Economy

Graph 11
Balance of payments: current account, net capital
inflows and variation of the stock of reserves
(moving average of four quarters
in millions of current US dollars)

Current account
Net capital inflows
Accumulation of reserves
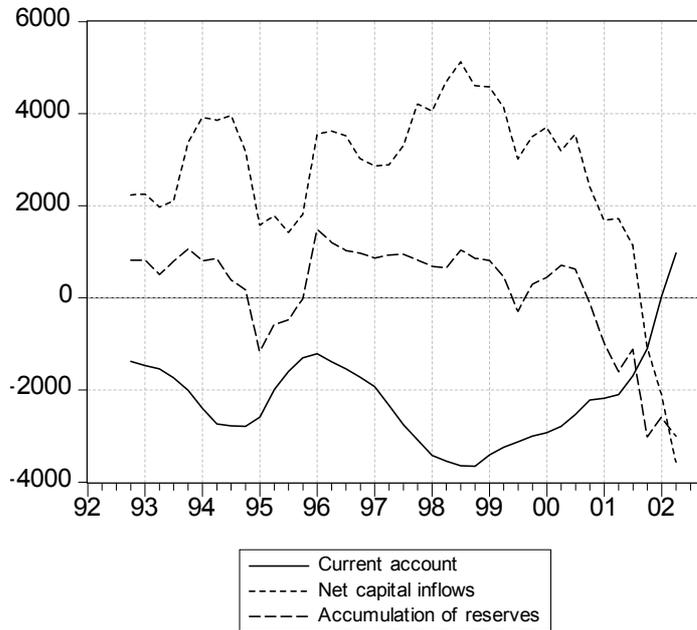
Source: Our own estimations on the basis of data from the
Ministry of Economy.

Graph 12
Balance of payments: Net capital inflows by sector
(moving averages of four quarters
in millions of US current dollars)
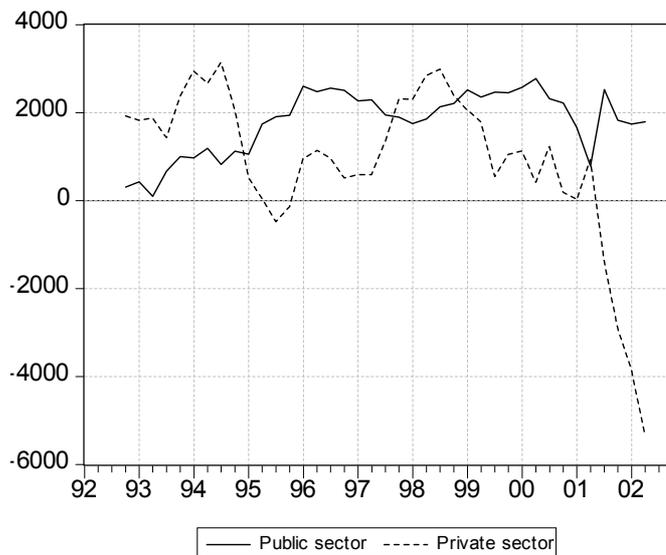
Public sector ----- Private sector

Source: Our own estimations on the basis of data from
the Ministry of Economy

50

Graph 13
Financial deepening:
Evolution of broad monetary assets, domestic credit
and foreign reserves of the monetary system
in real terms (deflated by CPI; 1991=1)

Legend:
— Broad money M4 (*)
---- Credit to the private sector
– – – Foreign reserves (**)
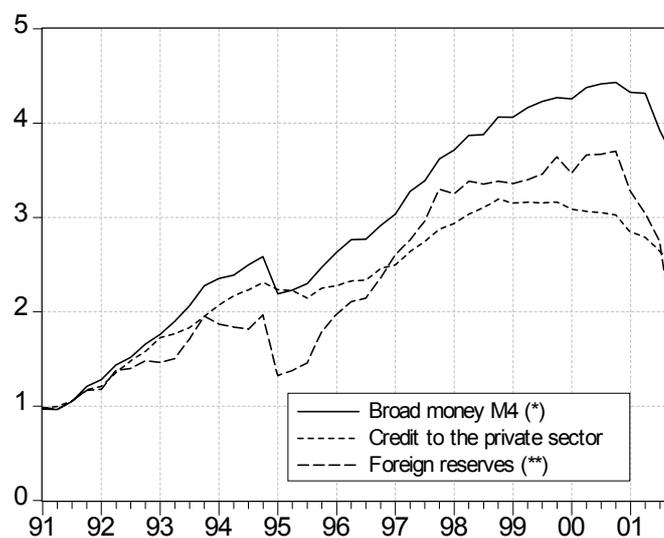
(*)   Including dollar-denominated deposits in the
      domestic banks.
(**) Reserves of the Central Bank and the domestic
   banks, excluding government deposits in the Central
      Bank.

Source: Our own estimations on the basis of data from
the Ministry of Economy and BCRA (Banco Central de
la República Argentina).

Graph 14
Foreign debt, total and public
(in percentage of GDP at current prices)
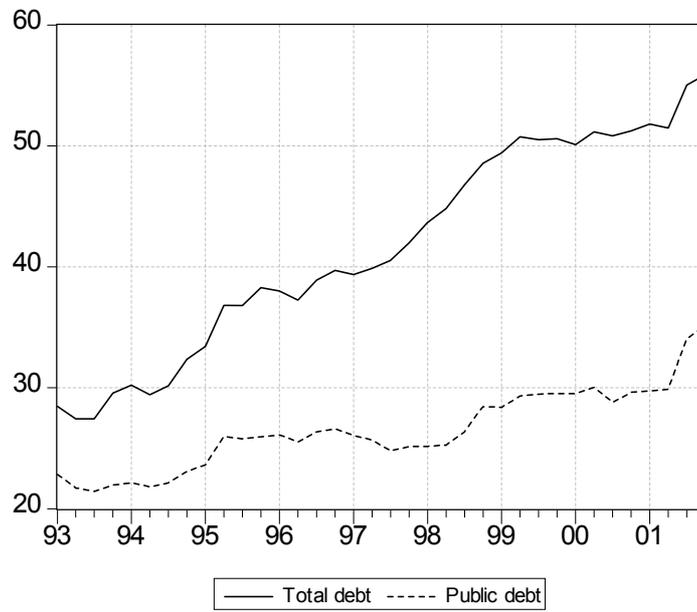
Source: Our own estimations on the basis of data from
the Ministry of Economy.

Graph 15
Argentina:
country-risk premium in the nineties
(quarterly data of annual rates, in %)
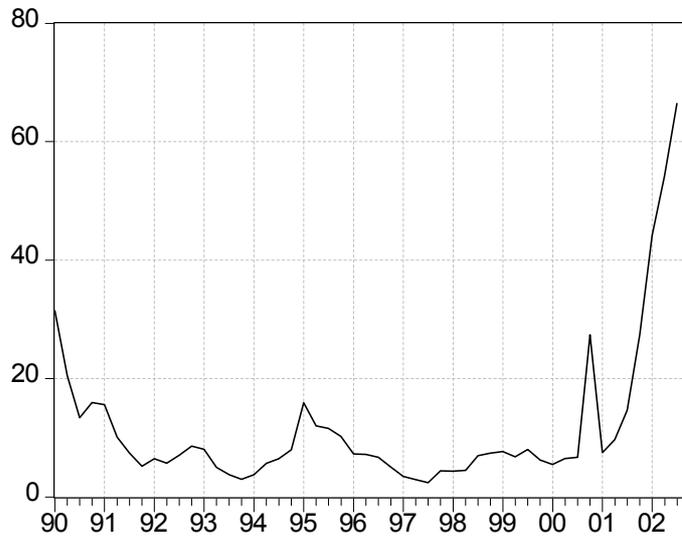
Source: Our own estimations on the basis of data
from press information.

Graph 16
Labor-market indicators:
Participation rate (PART), total employment rate (EMPL),
full-time employment rate (FTEMPL)
and their Hodrick-Prescott trrends
(% of total urban population)

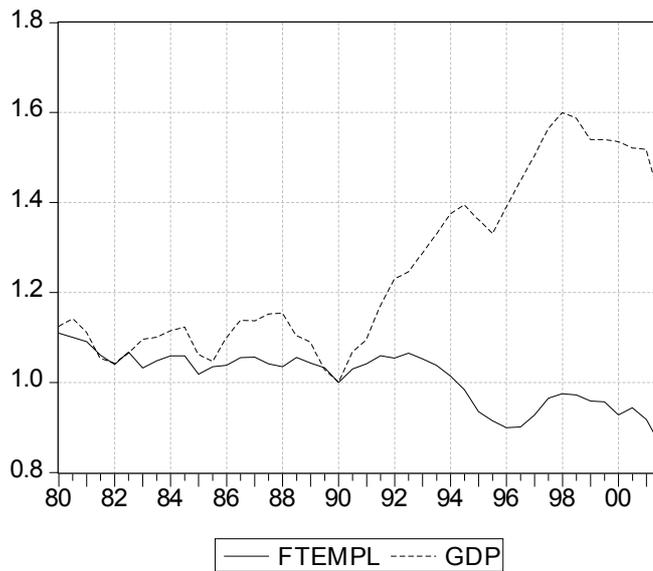| PART | ----- HP-PART |
| EMPL | ----- HP-EMPL |
| FTEMPL | ----- HP-FTEMPL |
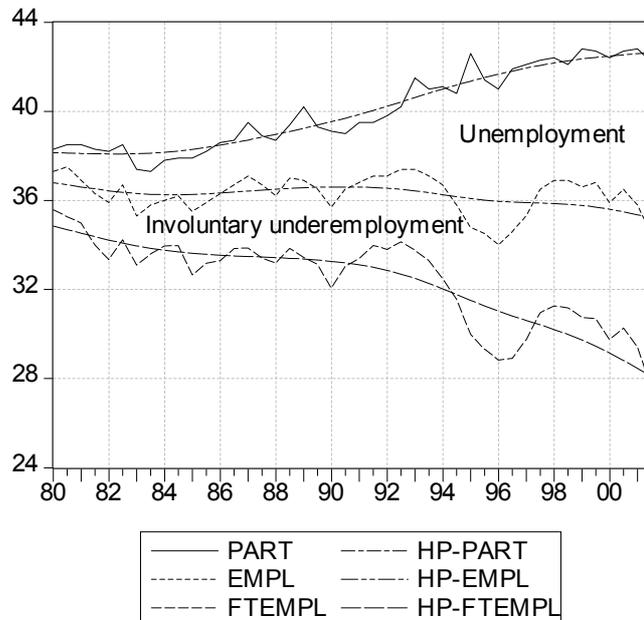
Source: Permanent Survey of Households, INDEC.

Graph 17
Unemployment (U) and
involuntary underemployment (SUB) rates
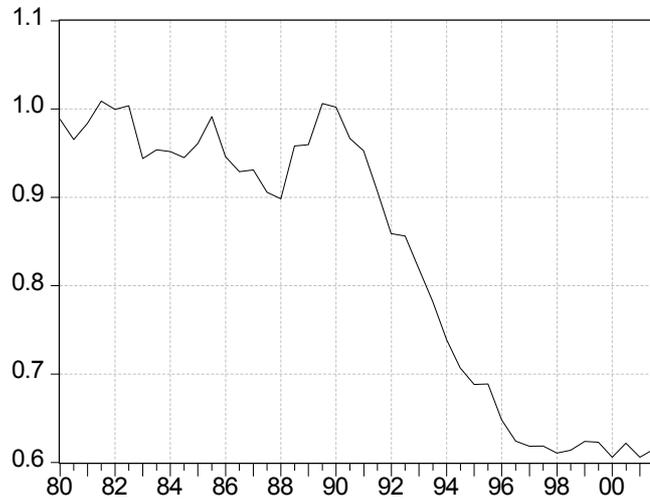(% of the active urban population)
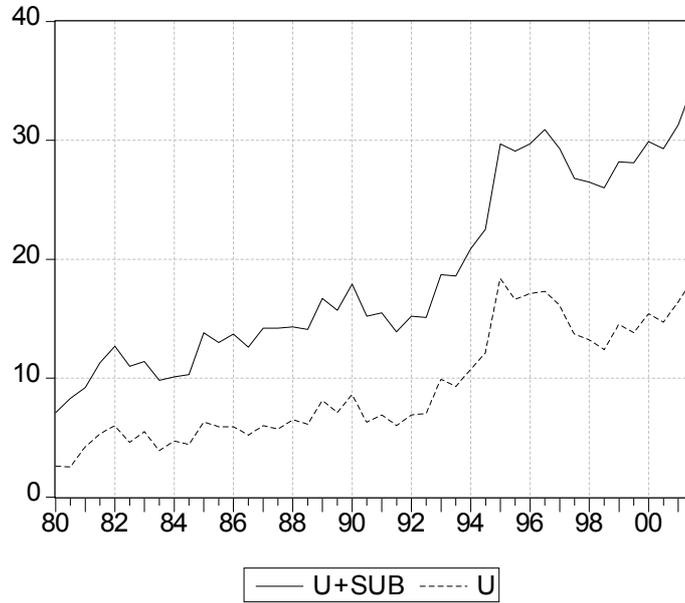
Source: Permanent Survey of Households, INDEC.

Graph 18
Full-time employment rate and
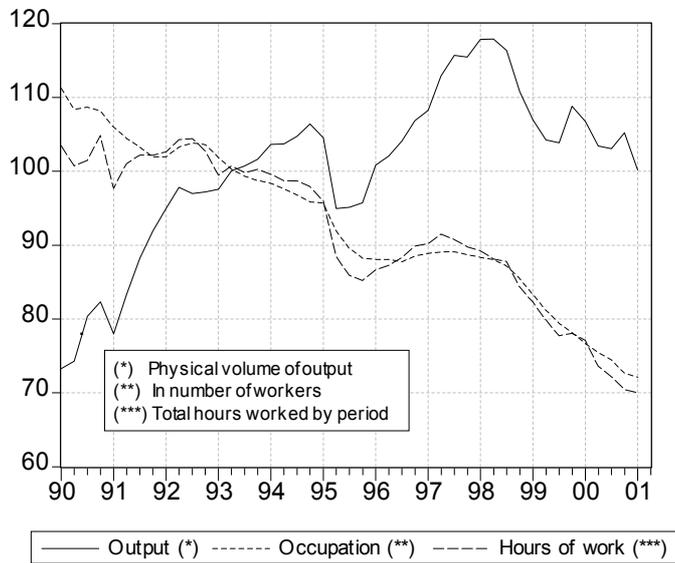seasonally adjusted GDP at constant prices
(1990:1 = 1)

Source: Ministry of Economy and INDEC.

Graph 19
Ratio of full-time employment rate to GDP
(1990:1 = 1)

Source: our own estimations based on data from
The Ministry of Economy and INDEC

Graph 20
Employment and output in manufactures
(1993 = 100)

(*)   Physical volume of output
(**) In number of workers
(***) Total hours worked by period

——— Output (*)   ------- Occupation (**)   — — — Hours of work (***)

Source: INDEC

Notes

[1] Damill, Frenkel and Maurizio (2002)

[2] This section draws on Frenkel (2003). The narrative is based on the model presented in Frenkel (1983). Presentations of the model in English can be found in Williamson (1983) and Taylor (1991). The model was applied to the explanation of crises in Taylor (1998), Frenkel (2002) and Eatwell and Taylor (2000).

[3] Regulation of the system was reformed and strengthened in Argentina after the 1995 crisis. Accordingly, it was more robust during the boom in capital inflows in 1996-97. However, there was a systemic exchange risk in Argentina owing to the partial dollarization of the financial system. While the banks held their local assets and liabilities in dollars and did not appear to run any exchange rate risk individually, a large part of their dollar loans were owed by agents whose income was in pesos from non-tradable activities.

[4] Reforms involved trade liberalization, and openness and liberalization of the capital account, coupled with privatization, fiscal reforms and deregulation measures in other markets.

[5] If the public sector has a deficit to finance and has issued debt, the increase in the interest rate in the downturn tends to increase the deficit and speed up the increase in debt in both the public and private sectors. Just before the crises, management of the public debt caused difficulties in Mexico and Brazil. But that is not the point. The question is what mechanism determines the increase in risk and interest rates. In other words, does the source of original uncertainty lie in the dynamics of public financial accounts and needs or in the dynamics of external financial accounts and needs. In Brazil and Mexico, it was not fiscal problems that led to the second phase of the cycle.

[6] This holds particularly for the former Chief Economist of the IMF, M. Mussa [Mussa(2002)]. There are a few exceptions: Calvo et al.(2002) and Hausmann and Velasco (2002), among them. Calvo et al. focus on the effects of capital flows volatility. Hausmann and Velasco believe that the role of the financial unbalance of the public accounts was not the decisive factor. They assume that the deficit was mainly a consequence of the market friendly reform of the pension system carried on in 1994 and not the result of a fiscal policy beyond control.

[7] A detailed explanation of the methodological questions involved and the estimation procedures we followed is presented in Damill, Frenkel and Juvenal. (2003)

[8] See Gaggero and Gómez Sabaini (2002), Cetrángolo and Jiménez (2003).

[9] The surplus reached about 1.4%, if the proceeds from privatization are not considered.

[10] An analysis can be found in Cetrángolo (1994).

[11] The definition of the deficit of the public pension system pictured in the graph is the same as described in note (2) to Table 2.a.

[12] The appreciation of the peso tended to reduce the debt-to-GDP ratio, because a high proportion of the public sector financial liabilities was denominated in foreign currencies. In this regard, the external and fiscal fragility are closely linked, given that the fiscal receipts are in domestic currency.

[13] See Gaggero, J. (2003)

[14] This section is based on Damill, Frenkel and Maurizio (2002).

[15] The information about prices and inflation employed here is produced by INDEC – Instituto Nacional de Estadística y Censos – and can be found at: http://www.mecon.gov.ar. The figures on macroeconomic and monetary variables, as well as on the balance-of-payments are from the statistical tables published by the Ministry of Economy and can be found on the same website. The labor-market data employed in the analysis of employment in Section 3, is taken from the Encuesta Permanente de Hogares – EPH – (Permanent Survey of Households) produced also by INDEC. The figures on manufacturing output and employment, as well as those on average wages in manufactures come from the monthly Industrial Survey published by INDEC.

[16] With a curious symmetry, the adjustment at the end of the decade would lead to a change with the opposite sign of almost the same magnitude (measured as a proportion of the GDP): From 1998 to 2002 there was a complete reversion of the initial jump, and the ratio of internal absorption to output turned back to its level in 1990.

[17] A formal model of the dynamics of the Argentine economy under the currency board regime as well as its econometrics estimation can be found in Damill, Frenkel and Maurizio (2002).

[18] In the survey a person is considered to hold a full-time job if she works at least 35 hours a week. However, the published figures include in this group anyone who has been working under 35 hours but does not want to work more (that is, it includes the "voluntary underemployment").

[19] As in Graph 14, we adopt a semi-annual periodization in this section. Thus, we attribute the May observation of the household survey to the first semester of every year and the October observation to the second semester, so that 2000:1, for instance, refers to the first semester of 2000. Furthermore, the symbol % in this section generally refers to "percentage of the total urban population". However, whenever an ambiguity may arise, we will employ the notation "p.p." (for percentage of the population).

[20] Econometric estimations of this model were presented in Frenkel and González Rozada (2000a) and Damill, Frenkel and Maurizio (2002).

[21] Cf. Damill, Frenkel y Maurizio (2002).

[22] We chose to follow this procedure because the permanent household survey reports the variable FTEMPL –and not absolute employment.

[23] In what follows we will call GBA the area comprising the city of Buenos Aires and Greater Buenos Aires.

[24] The definition of full-time jobs in this section is more restrictive than before, excluding the voluntarily underemployed. Meanwhile, it is worth mentioning that GBA data closely follow the national ones. For instance, the change in FTEMPL for the GBA was −1.86 p.p. between 1990:1 and 2000:2, compared to −1.8 p.p. at the national level.

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