THE BOCADE, CURRENCY OF THE ARGENTINEAN PROVINCE OF TUCUMAN
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Abstract
First we shall emphasize the importance of provincial fiscal monies (bonos) issuing in
the history of Argentina, and especially in the 1980’s in the North Western Provinces with
the coming back to democracy, and again in the 1990’s with the currency board’s regime
and its crisis at the end of 2001. Then we will show that this importance is correlated with
the very specific federalist structure of the argentinean political system. As the apparition
of such monies is generally associated with periods of strong social stress and political crises,
they generally are considered as emergency monies only. The case of the Province of
Tucuman who issued this type of money for 18 years (1985-2003), is interesting because it
appears as a permanent emergency currency, that is a structural complementary currency to
the national currency. The Bocade has been very resilient since the 1985-2003 period was
very unstable at the national level from a monetary viewpoint (there is first a new national
money in 1985, the Austral, ending into a hyperinflation, followed by a new money in 1991
- the Peso - under a regime of currency board (strict convertibility at par with the US
Dollar) that, in turn, ended by a deep depression and a monetary fragmentation, and finally
a large devaluation through "pesification" at the beginning of 2002. The tucuman’s Bocade
muddled through all these contrasted periods with an apparent "success". In other words it
was more stable than the national currency. The paper investigates the functioning of this
provincial monetary regime, and both its complementarity and relative autonomy vis-à-vis
the national monetary regime according to different periods. How were produced the
confidence, credibility and trust in the local money ? Was it an efficient economic device ?
What were the social, territorial and political conflicts the local monetary regime was able
to regulate ? Isn’t it a typical case of what can be called monetary federalism ?

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1. Introduction: Emergency monies or repressed monetary federalism

In the monetary history of Argentina, one side has been under-investigated. It is the importance taken in several periods by provincial states’ issuance of « quasi-monies » (Bordo and Veigh, 1998) under the form of tax anticipation scrips or warrants (Fisher, 1933; Gatch, 2011). We have a nearly similar situation in the monetary history of the United States and other federal countries. Nonetheless Argentina is to some extent specific since the emergence of such quasi-monies has been recurrent until the very present¹.

The apparition in Argentina of provincial fiscal paper monies in the form of tax anticipation scrips (generally entitled letras de cancelación de obligaciones, título público al portador or bonos de cancelación de deudas) is noticed by economists only in times of strong social stresses and political crises. Therefore most of the time these quasi-monies are considered exclusively as emergency monies. But this supposed emergency character might well be nothing but the expression of a rhetorical effect associated to a peculiar conception of what is a « normal » state of monetary order, a normality which is no other thing that normativity, and implies that the national State (or an independant central monetary authority) has to be sovereign in public monetary matters, even if in fact the polity is officially organized in accordance with federalist principles (Helleiner, 2003). So provincial States’ monies appear most of the time visible to official actors only in periods of emergency because, as soon as crises are overcome, they are outlawed or redeemed by the central power in search of a « return to normality ».

Thus the empirical evidence that they have been and therefore could be successful — under certain conditions - in addressing the issues of balancing public finance and local economic development is not taken into account and integrated into mainstream monetary theory. Consequently, as stated by Loren Gatch drawing from the case of U.S. municipal tax anticipations scrips in the 1930s:

« for a local tax-based currency to function in noncrisis conditions as a normal feature of local government finance and local economic activity would require a widespread and public re-thinking of monetary legitimacy » (Gatch, 2011, p.22)².

¹ Some US federated States as California still regularly use IOUs in order to finance their unbalanced budget, but as far as I know, these IOUs do not seem to circulate as paper money of small denomination. Indeed it is also an issue that is not much investigated.

² Nevertheless the study by Gatch (2011) of tax anticipation scrips issued by many cities during the thirties in the US enlighten this conditions: « the scrip experiences of the depression years suggest four relevant parameters for scrip experiments based upon public taxing power:
   - Scrip issuances must be commensurate with the absorptive capacity of retailers, which have obligations outside the local economy denominated in national money.
   - scrip issuances must be commensurate with the absorptive capacity of local governments, which have debt and other payment burdens outside the local economy denominated in national money.
   - Tax obligations must be sufficiently large to create a demand for scrip for use in tax payments to local governments.
   - Mechanisms must exist to redistribute scrip from those who have it to those who need it for tax payments ("avoiding the clogging of channels").

These parameters represent necessary, but not sufficient, conditions for successful tax-based scrip to the extent that community willingness to use scrip outside of the circuit of tax payments is an indispensible, albeit residual, condition for a viable tax-based scrip. In the American experience with such scrip during the 1930s, it remains unclear (beyond anecdotal evidence) to what extent scrip actually circulated via transactions unrelated to the original tax circuit. Beyond the sheer presence or absence of a discount on standard funds, the broader acceptance of scrip for routine transactions represents a more significance measure of scrip’s success qua local currency. At the very least, scrip’s suitability as a generalized medium of local exchange would exhibit network effects—the more varied its transactional use, the more useful it would become for further transactions—subject to some minimum threshold below which scrip would be shunned as a nuisance, and a maximum threshold
It is worth quoting this author a little more, since what he writes concerning the municipal monies in the United States is worth also for the provincial monies of Argentina: « if the money-sovereignty nexus is constitutive of “monetary space”, then the implied lessons of the historical experience with tax anticipation scrip will come from answers to political questions about the powers and autonomy of local governments, and not to economic questions about the putative benefits of local currencies. (...) As one legal authority wrote about tax anticipation scrip, “it is somewhat surprising that the Federal administration has not taken cognizance of this desultory infiltration of illegitimate paper money into the channels of monetary circulation” (Nussbaum 1937, 1083). Far from taking “cognizance” of this “desultory infiltration”, the federal government ignored the use of tax anticipation scrip, and these experiments in local currency quickly faded from public consciousness. For us to take cognizance of the significance of local currency, and to revive public consciousness of its potential in our present day, requires us to appreciate those historical moments when local currency, despite its success, disappeared as an expression of local power. » (Gatch, 2011, pp. 25-26; our emphasizing).”

Grubb (2003, 2005, 2011), following Lester (1939), Ferguson (1956, 1986), Smith (1986), Schweitzer (1989), draws similar conclusions in his works on fiscal monies of the North American Colonies and then States in the « Articles of Confederation ». It is not because monetary systems backed by public taxing powers are economically inefficient that they are recurrently outlawed; it is because their supporters have been regularly defeated in the political arena by coalitions between (and sometimes merging of) private financial interests and politically dominant ruling classes (Holton, 2005). In fact, economic arguments legitimizing the political devaluation of tax backed monies in favour of private fractional reserve credit money issued by commercial banks are, as stated by Richard Lester, nothing more than « economic theology ». And Lester was prophetic when he concluded in 1939 his book « Monetary Experiments » by the following words:

above which scrip would lose its transactional validity (i.e invalid outside of the prevailing tax jurisdiction, and the economic area to which the jurisdiction is relevant). The determination of these lower and upper thresholds would depend upon the specific articulations of the four parameters set out above; ultimately, however, what activates tax-based scrip is sufficient public willingness to accept scrip as a legitimate economic instrument ». (Gatch, 2011, pp. 22-23).

1 « What are the responsibilities and proper scope of local governments? How are these to be ascertained and asserted against the powers and pretentions of the central state? Seventy years ago, these questions were answered to the detriment of local power. Policy responses to the Great Depression in the United States (and elsewhere) had the cumulative effect of drawing power away from local communities to the states, and from states to the central government. (...) From the broader perspective of American monetary history, the proliferation of local currencies during the 1930s appears as an anomalous development in the progressive centralization of monetary power and authority in Washington D.C. By 1935, not only was the gold standard replaced by a fiat currency, but the basic functions of, and responsibilities for, regulating the mechanism of credit were transferred from the regional Federal Reserve banks (especially the New York branch) to the Federal Reserve Board in Washington D.C. » (ibid.)

4 « Although until recently historians describing the economic origins of the United States Constitution tended to focus on private debt, today more and more scholars contend that the Constitution was also rooted in a struggle between taxpayers and investors in government bonds. Between the Yorktown victory of 1781 and the federal assumption of state debts in 1790, Americans were hit with taxes that averaged three or four times those of the colonial era. The principal purpose of the levies was to pay interest on state and federal government securities, many of them bought up by speculators. In the mid-1780s, most states earmarked at least two thirds of their tax revenue for foreign and domestic holders of the war bonds. The tax burden was magnified by a shortage of circulating coin. During the struggle against the British, creditors had generally been required to accept paper money from their debtors, but by the end of the war most assemblies were permitting creditors to demand gold and silver. Numerous petitioners and newspaper writers accused legislators of making the same impossible demand of taxpayers that the Egyptian taskmasters had made of the Israelites: they must "make bricks without straw." The currency shortage also magnified the burden of private debt. In 1785, four years after the South Carolina assembly voted to require that debts be paid in gold or silver, a newspaper writer who took the name Americanus said he had seen debtors forced to "give up $50" worth of property "to pay $10." "Who will call this Justice?" he asked. Thus what was true of taxation was also true of the money supply: in perhaps the two most important areas of peacetime governmental action, most of the newly independent states adopted harsher policies than the colonial governments they had replaced ». (Holton, 2005, pp. 445-446).
Above all we need today some of the intelligent skepticism toward the financial dogma of the day that our colonial forefathers had. They did not hesitate to challenge the existing economic theology or to engage in intelligent experimentation. The spirit and attitude of our forefathers is in the American tradition. Today too many people know what can’t be done and too many economists know the lessons of history that history itself fails to record. (Lester, 1939-1970, p. 307).

Indeed economic theology is not limited to United-States, it is also reigning in Europe and in Argentina as well. An unofficial internal Report of the Dirección Nacional de Coordinación Fiscal con las Provincias (DNCFP) of the ministry of economy and finance shows that perfectly. This report, probably prepared by academic economists and concerned by the federal redemption in 2003 of the tax backed bonds issued by 16 provinces in the 1999-2002, recognized that:

« Si bien hay acuerdo en que un país con un sistema monetario sano debiera tener una única moneda convertible, las posiciones divergen sobre lo que pasa cuando se introducen monedas adicionales. Hay muchos ejemplos históricos y aún el reciente caso argentino, en que las monedas, al tener usos distintos, pueden convivir sin mayor dificultad. No obstante, es importante dejar en claro que siempre es óptimo que haya una sola autoridad de emisión, en lugar de varias, como ocurrió en la Argentina con las monedas provinciales. (…) Caso contrario, se generan básicamente dos problemas: existencia de externalidades y reduccion de la certidumbre monetaria » (DNCFP, 2003, p. 10 & p. 25).

Thus this report admits that complementarity between fiscal monies – national and provincial – is perfectly viable, since they have distinct spatial spheres of circulation. But it also considers that it is not “optimal” since optimality resides in the unicity of the monetary authority, unicity that would adress successfully the two problems of monetary plurality: externalities and uncertainty. That is in fact a pure argument of authority since empirical evidence does not sustain it: at the empirical level it is clear that if provincial monies emerged in 2001, or better said expanded as we shall see, it was precisely because the unicity of monetary authority had produced strong negative externalities and increased uncertainty to the point of destroying confidence and trust in the monetary system, and therefore the credibility of the monetary authority. Moreover it can be observed that provincial monies had produced positive externalities and reduced uncertainty when they were successfully managed, what has been the case in a majority of provinces and for the largest amount of money issued (Théret and Zanabria, 2007 and 2009).

In this cognitive context, the case of the Province of Tucuman which issued its money under the name of « Bocade » (bonos de cancelación de deudas, that is to say bonds or bills of redemption of debts) during a continuous period of 18 years (1985-2003), is overwhelmingly interesting, for it proves:

- first, that provincial monies are not necessarily of an exclusive emergency nature; to the contrary they may not resist to a situation of crisis of the national money;
- second, that provincial tax anticipation bonds do not necessarily compete with national money but may be complementary to it;

The lasting character of the Bocade first shows that emergency cannot fully explain why such a complementary money is issued. At least, if one wants to keep the notion of emergency and to carry on looking at provincial monies as ephemeral responses to crises of a « normal » state of affairs, it should be considered that the argentenean monetary system does not know only periodical medium-term crises (turbulences in a stable system due to external shocks), but also embodies long term unresolved contradictions that render it structurally instable. That would mean that the « standard state » of centralisation and commodification of money’s issue is not an optimum, neither a rational nor a reasonable satisfactory steady state.

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5 See the Treaties of Maastricht and Lisbon prohibiting European States but also the Union to issue paper money and giving a monopoly on money issuing to commercial banks.
6 See Licari, J. M., Calgagno J. C., Oviedo, J. M. y Pellegrini S. (w. d.).
Moreover, in the case of the «funny» «tucumani Dollar», as Bocade has been ironically and with condescension called by the *Financial Times* (Pilling, 1996), it is possible to assume that the 2001 crisis of the convertibility regime, contrary to the cases of late comers in tax backed money business as provinces such as Entre Ríos (Federal), Corrientes (Cecacor) and Buenos Aires (Patacon), has not given life but death to the tucuman money. And that was not a natural death but a political murder, since the federal government and most of provincial governments themselves, under the pressure of the IMF, took advantage of the very failure of some of them due to overissuing, and of the common sense on the emergency character of *bonos*, to redeem them all together, and to recentralise the whole system in Buenos Aires.

In the convertible Peso’s crisis, the tucuman Bocade did not emerge as an emergency money: it was already working continuously since 16 years. So it is more accurate to say that the Peso crisis was also a crisis of the Bocade whose usual functioning was disturbed. Constrained to become a substitute to a Peso more and more scarce at the national and provincial levels, it was overissued and lost a part of the trust put in it, due to growing difficulties to insure its convertibility at par in the national legal tender. But that did not imply that the Bocade was condemned to disappear, since it had already been confronted to deep crises of the national monetary system (notably hyperinflation), and had successfully gone across. And if Bocade’s exchange rate in Peso deteriorated on the market during the crisis, it nevertheless was maintained under control, as can be seen in figure 1 where the it appears to be a money as good as the lecor, *bono* of the Province of Cordoba, usually considered as a successful experiment. So the Bocade, even if it has been reducing the depressing effects of the Peso crisis on the Tucuman economy, was also finally killed by it; but this death was not «natural», i.e. coming from its endogenous functioning. If the *bono* disappeared in 2003, it was because it did not benefited anymore of the benign neglect of the central powers and became, with the whole set of bonos, a stake in the negotiation between the federal Government and the IMF.

Until then, the tucuman *bono* had proved «Difficult to kill», it had «resisted to the hyperinflation of Alfonsin, to the convertibility of Menem, to the adjustments of the IMF, to the adjustments of the Federal Government, to counterfeiting, to the overissuing of Ortega, Miranda and Alperovich, and even to Bussi» who changed a credit without interest from the people into a credit from the banks at high rates. And finally, it twisted porteños’ arms, since after 16 years of critics towards provincial monies, they have had to issue a younger sister of them, the Lecop. » (Cirnigliaro, 2004, p. 125). «During the 17 years it lived», it had been strongly supported by «the local businessmen (who) recognized that the *bono* allowed them to work quietly» (ibid.).

Finally, the tucuman case shows that the issue of Bocade in what is a small and poor peripheral province, was caused by structural shortages of national currency and credit money, shortages themselves the results of fiscal and monetary federal institutions and policies. Thus the provincial money was not competing and driving out of the circulation the national legal tender media of payment; it complemented them within the limits of the provincial economic space where it was accepted as a means of redemption of taxes. If a surplus in the local economy of national legal tender currency would have been observed, the provincial money whose use in transactions was spatially confined, would return to the provincial treasury and be destroyed or stored in its coffers.

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7 Compared to levels of interest rates in the period (16.2% and 39.3% respectively in 2000 and 2001 on deposits), discount or exchange rates of 10-15% were still reasonable.

8 As we shall see, Ramon Ortega (1992-95), Antonio Bussi (1996-1999) and Julio Miranda (2000-2003) were the governors of the Province during the currency board period. José Alperovich was the minister of economy of Miranda at the moment of the redeeming of the Bocade by the federal government, and succeeded to him as governor for two mandates (2004-2011).

9 In terms of population and GNP, Tucuman is very close to be to Argentina what Greece is to the Eurozone, i.e. around 3%.
In fact, though the 1984-2003 period of return to liberal democracy was very unstable at the national level from a monetary viewpoint (see figure 2 below), the Bocade muddled through this very volatile period with "success". It had been primarily issued just after the end of the « processo » military dictatorship and at the same time as the Austral, the new national money created to reduce the very high inflation bequeathed by the military power. But soon after, the Austral itself was the prey of hyperinflation and was replaced in 1992 by another money - the convertible Peso - issued under a regime of currency board (strict convertibility at par with the U.S. Dollar). This time, the new regime did not lead to hyperinflation but to a deep recession and finally to a general political and social crisis in 2001, with as a consequence, a large devaluation of the Peso and a new regime of "pesification" (de-dollarization) at the beginning of 2002.

The resilience of the Bocade at the provincial level, meanwhile there was monetary chaos at the national level, is paradoxical; on one side the Bocade founded its viability and efficiency upon a strict convertibility with the national money of the moment, but on the other side it was an autonomous device since it had a peripheral character vis-à-vis the central monetary system to which it could freely adapt. Its autonomy was therefore an independance within interdependance, a good definition perhaps for complementarity. And since independance within interdependance is also at the core of the concept of federalism, it suggests to tackle the issue of complementarity caused by locality in terms of monetary federalism.\(^\text{10}\)

\[\text{Figure 2: A more general context of high inflation and hyperinflation before stabilization, and perhaps a come back to high inflation: Argentinean CPI from 1943 to 2008 (yearly average of monthly indexes, base 100 in 1999)}\]

\(^\text{10}\) Thus this paper, despite it is focused on the tucumani Bocade, can also be seen as primary thoughts about monetary federalism and the euro crisis, monetary federalism being understood as a form of complementarity among monies caused by locality. On complementarity among monies, see Kuroda, 2008.
Let’s see that more precisely now. In the second section, we shall recall the importance and recurrence of provincial fiscal monies’ issuance in the history of Argentina, especially in the 1980’s in the North-Western Provinces with the coming back to democracy, and in the 1990’s with the currency board’s regime and its crisis at the end of 2001. We shall also try to show that this importance is correlated with, and can be explained by the specific federalist structure of the argentinean political and fiscal systems. In section 3, we will investigate the dynamic functioning of the tucuman monetary regime, with both its complementarity and relative autonomy vis-à-vis the national monetary regime. Some questions about the tucuman Bocade will be addressed: why was it issued? How did it work? How did it evolve when facing the problem of the high volatility of monetary policy at the national level? How did it manage the transition from an inflationary to a deflationary regime? How were produced the confidence, credibility and trust in the local money ? What were the social, territorial and political conflicts the local monetary regime was able to regulate ? Isn’t it a typical case of what can be called monetary federalism ?

2. The recurrence of issuances of provincial quasi-monies in the history of Argentina.

Since the origin of Argentina as an independant country, monetary plurality, tax-based money and problems of convertibility of paper-money have marked its history (Grinfeld, 1910 ; Bordo and Veigh, 1998 ; Irigoin, 2000 and 2003). If we limit us to times when the federative Argentinean Republic and the monetary regime of the « Peso moneda nacional »

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11 For instance « Despite its turbulent origins and its problematic history, the inconvertible paper money of the Province of Buenos Aires has stayed in circulation during forty years, between 1827 and 1867. (…) During these forty years, the notes denominated in paper Peso became the dominant medium of payments for transactions of the « porteña » domestic economy, and the circulating paper Peso transformed itself in the unit of account of import and export prices in the whole region. (…) Reception of paper Pesos in payments of taxes was the mecanism conceived by the porteño government to obliging and getting the acceptation of paper money as a circulating medium » (Irigoin, 2003, p. 69).
(mSn) were stabilized, i.e. since the end of the 1880s, we can distinguish four waves of provincial issuance of money\textsuperscript{12}.

2.1. The four waves of emissions of argentinean provincial monies since 1890

2.1.1. The first « Peso moneda nacional » wave (1890-1933).

A first wave took place in the golden age of the argentinean agroexport-led growth and its crisis, that is to say the period between 1890 (the year of institution of a currency board in order to insure the convertibility of the national paper money) and 1933. We can name it the « Peso moneda nacional » wave with seven provinces mainly of the North-West and the West parts of the country issuing tax backed quasi-monies more or less sporadically (see map « first wave » below). Further research should likely drive to divide this wave in separating two periods, before and since the first world war, for convertibility with gold was suspended in 1914 (and only restored in 1927 till 1929) (Bordo and Veigh, 1998, p. 12). Nonetheless this wave holds its unity from the fact that issuances of provincial bonds were made on the same Peso (mSn) standard.

Table 1 : Issuances of provincial quasi-monies between 1891 and 1933

<table>
<thead>
<tr>
<th>Provinces concerned</th>
<th>Years of issue of provincial monies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrientes</td>
<td>1891</td>
</tr>
<tr>
<td>Jujuy</td>
<td>1903-1905-1928-1932</td>
</tr>
<tr>
<td>Mendoza</td>
<td>1892-1908</td>
</tr>
<tr>
<td>San Juan</td>
<td>1894 - 1896 -1899 -1909 -1923 (4% interest)</td>
</tr>
<tr>
<td>Santa Fé</td>
<td>1890</td>
</tr>
<tr>
<td>Santiago del Estero</td>
<td>1891</td>
</tr>
<tr>
<td>Tucuman</td>
<td>1900 - 1915 - 1917\textsuperscript{13}</td>
</tr>
</tbody>
</table>

As shown in table 1, the north-western provinces (Jujuy, Salta and Tucuman) were already the more active. These provinces will be also in the forefront of the movement of monetary experiment in the second wave. But between these two waves, during 50 years of military and/or authoritarian rules, and import-substitution led-growth regime associated to a Central Bank (created in 1935) « absolutely centralized » (Olivera, 1981, 1989, 1992), there is no trace of any provincial treasury issuing of paper money until 1984\textsuperscript{14}.

Two examples from Jujuy (1903 and 1932)

\textsuperscript{12} Here our main source is http://numismondo/pm/arg/ which may contain some mistakes and be possibly incomplete. In a previous paper we have also noticed traces of provincial issue in 1876, 1881, 1883, et 1885 (Theret and Zanabria, 2007, p. 22). See also Colantonio (2010).

\textsuperscript{13} On the bond of 1917, see Paez de la Torre, 1997.

\textsuperscript{14} The unique evidence is that of issuance by the Tucuman Province of « certificados de cancelacion de deudas » in 1966, but they were not anonymous and looked more as endorsable checks.
2.1.2. The Austral’s (second) wave (1984-1991)

One has to wait the end of the last military dictatorship, and the return to a fully liberal democratic political regime in 1984, to observe new issuances in four north-western provinces, starting with Salta in 1984, La Rioja and Tucumán in 1985, and then Jujuy in 1986\(^\text{15}\).

This second wave that lasted until 1991 can be denominated the «Austral wave» since it coincides with the issue in 1984 of a new national money denominated Austral, in which Bocades were convertible at par, thanks to the institution of currency boards managed by the public banks of each province\(^\text{16} \,\text{17}\).

Figure 3: First wave (1890-1933) & Second wave (1984-1991)

\(^{15}\) In the World Bank Report of 1990 on Provincial Government Finance, five, including Catamarca, and not four provinces are considered as emitting money in this period (World Bank, 1990, p. 77). Cirigliaro (2004, p. 126) also mentions Catamarca as one of the north-western provinces having discussed of a possible monetary regional space where bonos from every province could have circulated at par (see below). But we have found no numismatic traces of bonos of Catamarca before 1993. That is why we omit them here.

\(^{16}\) The first issue of the bond in Salta preceded the «Austral plan» and was denominated in Peso argentino (1000 Sa = 1 Austral). It had to be surcharged by a stamp to circulate on the basis of Austral standard.

The Salta’s Bocade issued in 1984 in Peso Argentino

The first Bocade of Tucuman issued in 1985 in Austral
The money issued in these years, called «Bocade» in Salta, Tucuman and La Rioja, and «Publico» in Jujuy, was very similar in the four provinces (following the Salta model and not bearing interest rate as will generally do the other provincial quasi-monies). It disappeared when the Austral was carried off by hyperinflation en 1991.


After the «convertibility plan» by which the country went out of hyperinflation in 1992, it is usually considered that there were no more quasi-monies issued by provincial governments. People and academics just remember of the successful issue of the «cecor» by the government of the Cordoba Province in 1995, by linking it to the «Tequila Effect» crisis. This is not right. Only Salta stopped its emissions, but Tucuman (continuously), Jujuy (with an interruption between 1992 and 1995), and La Rioja (with an interruption between 1997 and 2001) carried on issuing Bocade or Publico all along the decade. Moreover other provinces entered the game as soon as 1993 for Catamarca, 1995 for Cordoba (Lecor), Formosa (Boncafor), Mendoza (Petrobono/Petrom), Rio Negro...

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18 The Province of Jujuy intituled its bond «Titulo Publico al portador», usually called «Publico». Later some other provinces in the North-West will also name theirs bond «Publico», such as Catamarca in 1993 and Santiago del Estero (Ciudad de Frias) in 2002.

19 But as we have seen above, it is possible that Catamarca had issued bonos during the first wave.
(petrobono), San Juan (Huarpes), and 1996 for Missiones (Cemis). Thus 10 provinces had already started to issue bonds in convertible Peso before the country falling down in depression in 1998, and the crisis of the currency board at the end of 2001. Thus it is necessary to distinguish between a third and a fourth waves of provincial issuing of tax anticipation scrip, the third starting in 1992 and going till 1998. We can consider this third wave including 10 provinces, and completely forgotten in the literature, as the « dollarized Peso » wave20.


The fourth and last wave started in 1999 and included 6 more provinces that were newcomers in the movement : Corrientes (with Cecacor) in 1999 ; Buenos Aires (with Patacon), Chaco (with Quebracho) and Entre Rios (with Federal) in 2001 ; San Luis (with San Luis) and Santiago del Estero (with Publico) in 2002. This last wave (1999-2003), we name the « convertibility crisis and dedollarised Peso » wave.

As the provinces of the « dollarized Peso » wave continued to issue money untill 2003, the period of the so-called convertibility crisis (2001-2003) comprises 16 provinces (over 23 for the whole Argentina) of which most of the largest. To these 16 provinces, we must still add municipal monies21 and the federal government itself which also issued in these

20 Some sources (cf. Licari, Calcagno, Oviedo & Pellegrini, 2003) also mention two others provinces of Patagonia with cuasimonedas in 2003, Chubut (Petrobono) and Tierra del Fuego (Letras). Thus if they were to be dated from 1995 as for the Petrobono of Rio Negro, it would reach the number of provinces of the third wave to 12 provinces, and the number of the fourth to 18.

21 There were at least five municipalities in the province of Cordoba that have issued quasi-monies, of which four of them (Cruz del Eje, Dena Funes, Miramar and San Francisco) in the convertible Peso wave (1995), and one (Bell Ville) in 2005. Moreover the « Publico » of the province of Santiago del Estero is issued by the city of Frias.
years a large amount of «Lecop». Lecop was an interprovincial bond (inconvertible in Dollar) that was put into circulation through the system of federal transfers to provinces and municipalities, and was legal tender for payment of federal taxes.

This last wave has been the most impressive, as impressive as the dollarized Peso crisis. But standing back from this short period of open crisis and taking into account the previous waves show that provincial issuing of tax anticipation bonds cannot be reduced to this episode.

Another important characteristic of these monetary experiments is their diversity. There has been a wide variety of devices associated to the diversity of political and economic provincial situations. Some mobilized currency boards (Cordoba, Entre Rios, Tucuman), other not ; some benefited of larger tax bases than other (especially when bonos could be used in payment of national taxes and were circulating in the equalization transfers circuit as for Buenos Aires Patacon) ; some could use special resources to back their bonos (oil royalties in Mendoza), other aimed at insuring the value of the bono issued on a basket of moneys (San Luis)\(^{22}\); and strategies for building trust, confidence and credibility were quite idiosyncratic. That being said, very few things are known in detail on most of these experiments\(^ {23}\), and untill now historians have unfortunately failed to record provincial and local monetary histories.

Before going to investigate further the case of Tucuman, we still have to look at why issuances of provincial bonos have been so recurrent in Argentina.

### 2.2. Why such a historical recurrence? Argentinean fiscal federalism and shortages of currency and credit at the provincial level.

Three elements can be outlined to answer this question of historical recurrence of provincial fiscal monies in Argentina: first, fiscal federalism ; second, the monetary regime ; third, the constitutional regime.

#### 2.2.1. Fiscal federalism and currency shortage.

As it has been recognized by the World Bank, «understanding the transfers from the national to the provincial government is key to understanding provincial finance in Argentina» (World Bank, 1990, vol. 1, p. 13). This country is characterized by a strong dependance of provincial budgets on federal transfers, and this dependance is coupled with a large federal discretion in the distribution.

Argentinean provinces, with the exception of the Autonomous City of Buenos Aires (the federal capital), depend hugely on federal transfers, the federal government collecting most (around 85%) of the taxes (including social contributions) despite the fact that spendings are quite decentralized (around 45% are made at the provincial and municipal levels). The large and wealthiest provinces of Buenos Aires, Santa Fé, Cordoba and Mendoza (their own revenues representing around 30-35% of their total revenues) are less dependant than the poorest and peripheral ones (for instance autonomous revenues are worth less than 20 % in the nort-western provinces of Jujuy, Salta, and Tucuman, and 10% in Catamarca and La Rioja) (Saiegh and Tommasi, 2000, p. 69). This very large vertical deficit in the tax primary distribution is structural ; it exists since the outset of the

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\(^{22}\) Mendoza issued in 2002 a bono called «Petrom» and guaranteed by oil royalties. San Luis’ issue has been one of the most particular since the «San Luis» was not on the Peso standard, but a new standard in itself, its exchange value in Peso was indexed on a basket of five moneys (argentinean Peso, brazilian Real, chilian Peso, U.S. Dollar and Euro).

\(^{23}\) Nevertheless see Théret and Zanabria (2007, 2009).
Republic, for Buenos Aires has always benefited of the monopoly on customs duties that were the main source of tax revenues and are still outside the basis of revenue-sharing 24.

Like in most federations, federal tax transfers are of three kinds: general revenue sharing (equalization), earmarked for a particular use, and purely discretionary. But in Argentina the boundaries between these categories are blurred, for even when fixed rules of automatic revenue sharing and/or earmarking are edicted, it is recurrent that these rules are either bypassed through bilateral negociations between the federal president and governors, or permanently renegociated. Before the renewed institutionalization of revenue-sharing in the Act of coparticipacion voted in 1988, what dominated was bypassing federal rules; afterwards, it is permanent renegociation of these rules (Bonvecchi, 2005).

For these reasons provinces suffer a great instability and uncertainty concerning the true amount of federal money they are going to receive annually, monthly, daily. Permanent discussions about the effective amounts of federal engagements is coupled with federal discretion relative to the agenda of payments.

This uncertainty is increased when the federal government is itself the prey of a fiscal crisis. In these periods, the vertical imbalance between spendings and revenues tends to grow thanks to federal devolution of spendings to provincial governments without devolution of the corresponding revenues (Falletti, 2010). Moreover the money shortage becomes a daily problem for Provinces since transfers’ payments tend to feed provincial treasuries’ accounts at irregular pace. In fact federal transfers and devolution of public spendings to provinces are often the primary variables of adjustment in the management of the Nacion federal budget. And since the argentinean economy is characterized by a high degree of volatility and strong dependance vis-à-vis external shocks, federal and then provincial fiscal crises are not exceptional. They are recurrently expected and always feared.

Thus it is not a surprise in Argentina to see payments of wages to public employees and/or debts vis-à-vis small providers belated and delayed for months. It is not surprising too to see these waiting periods correlated with social unrests and emergency situations where provincial governments have to borrow money to banks and/or on financial markets in order to finance current spendings. This large dependance of provincial governments on federal resources explains that their public debt is primarily a floating debt that is funded at high cost.

2.2.2. « Absolute centralization » of the monetary system and shortage and high cost of credit.

This remark drives us to another element in the conundrum of provincial public finance, to say the shortage and correlated high cost of credit for poor peripheral or impoverished Provinces. Their economic dependance towards the federal government is not limited to fiscal transfers, their dependance from monetary policy is also very strong. Because monetary policy is hypercentralized, the monetary regime being managed exclusively in relation to the exchange rate regime and macroeconomic stability, economic interests, public and private, in the peripheral provinces are not taken into account.

This exogenous constraint on provincial finance and local economic development is more or less hardened according to periods, since it depends on the type of management of monetary policy and institutional design of the financial system. In the periods concerned by this paper, the Austral and the dollarized Peso periods, credit was a priori easier in the first, and more costly and restrained in the second.

24 The successful issue of pure fiat paper money in Buenos Aires between 1828 and 1867 was backed on these duties (Irigoin, 2003).
In the Austral period, provinces were assisted by a provincial public bank through which they could have access to short term credit, a credit money that these banks could rediscount at the Central Bank. But as soon as the Central Bank was more restrictive in rediscounting, as it has been for instance the case in 1988 when the Austral was confronted to a renewed high inflation, this source of short term credit could be closed or/and became much more costly. Anyway, through this kind of financing, governments were transferring their structural problem of liquidness to their banks, and the consolidated accounts of the provincial public sector were not much improved. The device only allowed for a better short term smoothing of public debt payments.

In the dollarized Peso period, the argentinean Central Bank (BCRA) was transformed in a currency board and forbidden to emit credit money, and most of the Provincial Banks were privatized and no more inclined to directly finance provincial deficits at low cost. Hard budget constraints were put in place. Provinces had to go on more costly financial markets and, for that, could not do anything but to back their loans on their revenue-sharing resources. Provincial debt’s burden clumb faster than ever, and their capacity to pay for current expenses declined.

A second impact on provincial finance of credit shortage and hight cost is indirect. It concerns the possibility of funding local economic development and, consequently, the enlargement of provincial tax base. Here comes the problem stressed by Julio Olivera (1981, 1989, 1992) of the «absolute centralization» of the BCRA. For Olivera, argentinean economist internationally known for its distinction between active and passive money, on the «active» side of monetary supply, the «monetary base multiplier» changes according to the provinces since the growth of monetary base is inequally distributed among them, inequality reinforced by the variety of provincial economic situations. Thus, if a province is in a state of either underemployment, or full employment, growth of the monetary supply will stimulate either production, or inflation. Moreover, depending on the presence or no of regional active and wide monetary and financial markets, the mechanisms of monetary transmission will either lead up in the productive economy, or be limited to the financial sector. On the «passive» side of the monetary demand stimulated by changes in prices and wages, there is also for Olivera, even if employment rates are equal, a regional differenciation of the capacity of monetary institutions to respond to demand, if they are spatially inequally distributed.

Therefore Olivera infers that «a rational monetary policy must take into account regional differences», and that «the best way to do so is to decentralize the Central Bank» (Olivera, 1992, p. 9). For Olivera «the optimal degree of decentralization of the Central Bank is not the same for all countries and depends on the size of the territory, of the regional diversity, of the financial organization, and of the types of monetary policies implemented».

Moreover, according to him, «the way and the degree of monetary decentralisation should differ from one country to the other, because they depend on the optimal level of centralization which must predominate in each country, and on the social and political organisations which prevail» (ibid., p. 10).

Therefore after having examined different types of Central Banks actually functioning, he states that the argentinean one «functions as a totally centralized organism» despite its federal juridical statute that should constrain it to take a decentralised form (ibid., p. 14)25.

25 «The decentralisation of the political power and the decentralisation of the economic authority, the political federalism and the economic federalism, are the mutually complementary terms of the constitutional binomial concerning relations between the Nation and Provinces. (...) That was the doctrine of the lawyer and politician santiaigueño José Benjamin Gorostiaga, writer of the Constitution. And it was also the thesis of the inspirer and interpreter of the Constitution, Juan Bautista Alberdi (...). The unique way to bring power to the whole country – Alberdi sustained - is to distribute in its whole territory the economic causes of the power, the sources and elements of wealth, markets and credit» (Olivera, 1992, p. 17).
Thus for Olivera, instead of its «absolute centralisation» that is at odd with the federal Constitution of the country, the BCRA should be administratively decentralized, according to «the size of the country and the magnitude of its interregional differences» (ibid.).

From this analysis, it can be deduced that structurally, Argentinean peripheral provinces are confronted to monetary policies and a geographical distribution of monetary institutions that do not fit with their economic needs and stabilization of their public finance. And we can better understand why local business classes have been generally supporting the «currency finance» that provincial governments, in great shortages of national currency and credit, get accustomed to rely on.

2.2.3. States of political emergency and provincial States initiative to issue local currencies.

Shortage of State money from the top, shortage of market money from the bottom, public spendings mainly composed of inelastic social expenses (education, health, security) and politically difficult to reduce due to threatening street pressures, uncertainty and discretion in the federal delivery of tax transfers, autonomous tax revenues difficult to expand due to weak domestic markets and production deprived of an adequate access to credit money and investment, here is the set of factors composing the structural conundrum that is susceptible to develop in a vicious circle of cumulative and unsustainable provincial indebtedment and then bankruptcy, and that hopefully issuance of tax anticipation bonds promise to resolve.

But how can it be possible for provincial government to issue paper money while it is forbidden by the federal Constitution (Gallo, 1988)? How is it possible to observe effectively such paper monies during quite long periods without decisions of the federal Supreme Court or modifications of the Constitution? Why «federal interventores» designated by the federal executive power to substitute temporally failing or too much corrupted governors, do not stop these monetary experiments of provincial state money when they are in charge, but to the contrary resume or initiate new emissions, as it has been the case for instance in 1991 in Tucuman where the interventor Araoz relaunched the issue of Bocades in dollarized Peso to replace the Bocades in Austral, and also in 1999 in Corrientes where the Cecacor was launched by the interventor Mestre who, previously as

26 «En cuanto a la facultad de las provincias para emitir moneda, esta reglamentada en el artículo 108 de nuestra Carta Magna donde se expresa: ‘La provincias no ejercen el poder delegada a la Nacion. No pueden celebrar tratados parciales de caracter politico, ni expedir leyes sobre comercio, o navigacion interior o exterior : ni establecer aduanas provinciales: ni acuñar moneda: ni establecer bancos con facultad de emitir billetes, sin autorizacion del Congresso federal’… Tal como surge del texto precedente, por contrario sensu, las provincias estan facultadas tanto para acuñar moneda, como para establecer bancos con facultad de emitir billetes siempre que medie autorizacion del Congresso de la Nacion. Y es precisamente esta autorizacion que falta en el caso de la monada emitida por el Banco de la Provincia de Tucuman, al igual que con el resto de las monedas norteñas. Pero tambien es cero que el Congresso de la Nacion tampoco alzo su voz para condenar la emision de monedas provinciales que estaban violando expresas disposiciones constitucionales, como tampoco reacciono el Banco Central de la Republica Argentina para tratar de impedir la emision y circulacion de billetes provinciales impresos en la Casa de Moneda y puestos en circulacion por bancos oficiales de provincia sujetos a la supervision y contralor de nuestra maxima institucion financiera; convertido desde 1935 en agente financiero del Estado por imperio de la ley de su creacion y del texto de su carta organica, no se ha lucido para nada en materia de control de estas monedas espurias cuya circulacion publica y notoria en las provincias del Norte mencionadas, donde han sido utilizadas profusamente como medio de pago, se ha realizado contrariando sabias disposiciones de nuestra Constitucion, a vista y paciencia de todos los funcionarios nacionales encargados de velar por su estrito cumplimiento. » (Gallo, 1988).

27 With the following argument: «Bonds of redemption of debts presently enjoy a good acceptation in the local market place; this acceptation is based on the convertibility system put in place by the government of the Province via the operations in force of deposits and exchanges through the Provincial Bank». (Honorable Legislature of Tucuman, Ley n° 6299 of the 23/10/1991, published 08/11/1991 (http://www.hlt.gov.ar/digest_textoley.php?selley=6299).
Governor, had created in 1995 a quasi-money named Cecor in the Province of Cordoba (Theret and Zanabria, 2007)?

One usual answer to these questions concerning the legitimacy without legality of the provincial emissions of money has been that it was tolerated because of the very small amounts of money concerned. But this argument, if it can make sense from the point of view of mainstream economists and international monetary authorities as IMF and the World Bank\textsuperscript{28}, does not fit with the fact that the federal State was actively participating through its « interventores » to the issuances\textsuperscript{29}.

Thus it seems more accurate to take into consideration three other arguments. The first is that, as soon as it was supported by the provincial legislative and juridical (Supreme Court) powers, the power of the provincial executive to infringe a Federal Constitution that requires the authorization of national Congress to issue money was legitimized by the character of emergency and urgency of the situations in which bonos emerged.

The second is that the Constitutional Text contemplates only two forms of money, the « coined » money and paper banknotes. Direct printing by the Treasury of paper money backed by taxes is not explicitly considered. Thus the interpretation of bonos as money non juridically legitimized is not as straightforward as it seems a priori.

The third argument assumes that the federal behaviour of benign neglect or active complicity can be understood more easily if we consider that the provincial monies, in a federalist framework, are not in competition with the national money but complementary to it. From a complementary viewpoint on local monies, as soon as provincial issuances of small denominations’ money do not « restrict » the circulation of federal currency and do not compete with it, but rather complement it in regional economic and political spaces, they can be looked at positively by federal executives whose monetary policy is therefore not threatened but rather improved. The situation is different with provincial States issuances of credit money through Provincial Banks that are usually partly rediscounted by the Central Bank ; in that case, the money issued is of the same nature as the federal money and may circulate on the whole territory of the country. Generally there is confusion between both forms of money. But as soon as one makes a distinction between the two

\textsuperscript{28} The World Bank point of view was in 1990 the following: « In theory, the provinces cannot emit money and must, therefore, finance their deficits either by borrowing from financial institutions or issuing provincial bonds, or by the variation of short term assets and liabilities. In fact, one form of “borrowing” currently being used by some provinces (Salta, Jujuy, Catamarca, Tucuman and La Rioja) amounts basically to the emission of money, in that it consists of issuing "bonos" that have all of the characteristics of money. These provincial bonds can be redeemed for Australes on a one-for-one basis by simply presenting them at the Provincial Banks. Provinces have used these bonds to finance current expenditures, thereby appropriating the right to seignorage of the Central Government. The bonds don't pay interest and may circulate on the whole territory of the country. Generally there is confusion between both forms of money. But as soon as one makes a distinction between the two

\textsuperscript{29} One can also recall the fact that Domingo Cavallo himself, the father of the convertibility plan who was back in office as federal ministry of finance during the crisis of 2001, urged the governor of the Province of Buenos Aires to issue the Patacon, and finally was also the father of the Lecep, the federal bono.
instruments, the federal tolerance of provincial scripts appears to express simply the fact that, from the federal economic point of view, they are a complementary money not competing with the national money and circulating in limited territorial communities and for small payments. The federal attitude means that Bocade, Publico, Federal, Patacon and other bonos are examples of a necessary monetary complementarity caused by locality and the overlapping geographical scales of payments circuits.

3. The case of the Bocade issued by the tucuman provincial government.

Let’s come now to the specific case of the tucuman Bocade. We have chosen to focus our investigation on this experiment for three reasons: firstly it was the only experiment with a quite significative amount of money issued\(^\text{30}\) that allowed to have a long term perspective, and that seemed not to be completely conditioned by economic situation and external context (it survived to crises).

Secondly it had potentially an outstanding heuristical interest since Tucuman has always been historically on the forefront of provincial paper money issuing and, despite its small economic and demographic size, has had historically a specific and important political and symbolic position within the federal Argentine Republic.

Thirdly Tucuman is at the heart of the peripheral region of the North West, where issuance of provincial moneys has been directly linked to regionalism and federalist stakes (see above the banner of the first Bocade note issued in 1985).

The Bocade has been issued for the first time in August 1985 for an amount of 10 millions Australes, and it was totally redeemed in August 2003, after no less than 40 issuances (26 in Austral, and 14 in Peso). Figures 5 and 6 give an overview of the amounts issued in nominal and deflated values.

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\(^{30}\) Tucuman in 2002 was the fifth province in terms of amount of money issued (after Buenos Aires, Cordoba, Entre Rios y Corrientes). But, despite an unfavourable position in the provincial hierarchy of wealth and tax autonomy (compared for instance to Buenos Aires and Cordoba), it has not known during the dollarized Peso crisis a depreciation as strong as Federal (Entre Rios) and Cecacor (Corrientes).

\(^{31}\) Only a part of the entire stock of bonos was circulating. We computed this part in circulation from Cerro (1988) for the period 09/1985 – 09/1987 and by extrapolation on the period 10/1987 – 11/1991 (using the means rate on the period covered by Cerro: 59.67%). Fragmental informations in newspapers were also helpful. For the following period of the dollarized Peso Bocade, we applied also the approximate rate of 60% which is supported by the following statement of the BCRA: « It is estimated that on average 60% of the quasi-monies issued were used as medium of payment, meanwhile the 40% remaining was kept under the supervision of financial institutions », Boletin monetario y financiero del BCRA, edicion anual 2002, p. 43. Nevertheless fragmented
Let’s see now why it was issued and how it functioned at its outset, and then how it evolved along the 18 years of its life.

3.1. Why was it issued?

We have already give an answer to this question, for the Bocade was not different from the other provincial tax-based monies emitted to respond to local shortages of credit and currency. The Bocade is a typical example of « currency finance » (Ferguson, 1956). Nevertheless in its case, it seems important to stress two things. Firstly it draws attention on the fact that money shortage can be the result of not only a deflationist regime as was the Convertibility regime of the nineties, but also of high inflation regime as was the Austral regime in the eighties. Secondly the political and symbolical dimensions of the emergence of the Bocade seem quite strong; it has to be regarded also as an instrument of autonomisation of the north-western provinces. This dimension, combined with the fact that it has been significantly supported by the tucuman business class, could explain its lasting character.

The first purpose of the Bocade when it has been implemented was to stabilize political and social conflicts, notably between the government and civil servants (the local police was engaged in social unrest), by giving to the provincial government the immediate means to pay their wages to public employees, payments that had been delayed since several months. But the purpose of the bono was also to redress the public finances of the province by reducing the public debt and its heavy burden on the budget. As empirical evidence of this, it is convenient to quote Rienzo Cirigliaro, the minister of finance in charge of the implementation of the Bocade and the main actor of its good reception among the population:

informations indicate that it is likely a minimum rate, especially in periods of high national monetary shortage like 2001-2003. Thus real circulation should be better considered as being in between the two lines of the figure.
« We started our work by acting on the economy and equilibrating the finances. We had found an empty coffer, one month and a half of wages’ debts, anticipated payments of revenue-sharing transfers, and moreover, late payments of wages with till 25 days of delay. (...) While the debt due at the 31st of December 1984 was 3.7 millions of Australes, it was of 21.5 millions the 30th of June 1985, the new endebtment of the first semester being 17.8 millions. Between the factors of this new endebtment there was 5 millions corresponding to a fall in federal transfers, 7 millions of provincial taxes to be levied, 2.8 millions of interests on the debts contracted… From August 1985, salaries were payed entirely, and the process of endebtment due to belated payments of wages was stopped. The total debt in this domain was completely settled the 24th of December 1985. In five months we succeeded in paying the equivalent of six and a half months of public wages, in a critical and hard financial context. Till now the Bank of the Province of Tucuman was helping financially the State, some months by advances of 80% of the total spending for salaries. At the end of 1985, the balance of the account of the Province at the bank began to be positive. » (Cirnigliaro, 2004, pp. 116-117).

As for the capacity of the Bocade to reduce the cost of debt issuing and cumulative endebtment, it has been demonstrated by one of the rare empirical economic studies made on provincial bonos (Cerro, 1988). While the author was not in favour of such a monetary experiment (see below), he nevertheless concluded that the Bocade was a very much cheaper mode of financing the public deficit than other financial alternatives. He computed that on the period going from August 1985 to September 1987, the difference between the cost of issuing and supporting the Bocades, and alternative modes of financing either through the Provincial Bank and the regulated discount of the BCRA, or through financial market, was huge : the monthly cost was US$ 53.546 on one side, US$ 849.891 on the other side, differences corresponding to real interest rates of 0,83% against 7,25%. Thus actually the Bocade was a good instrument to reduce the public debt : « El bono fue un negocio » (La Gaceta of the 23 rd of November 1988)32.

Concerning the purpose of reducing the currency shortage, it is also clearly recognized by the minister Cirnigliaro in the book of his political memories, despite he seems not to be really ready to consider the Bocade as a pure currency, but rather as « an instrument of short term credit » (ibid., p. 125).

« We choose to create a transitional instrument – the Bocades (...) – which did not yield interests and should resolve the currency shortage. The following governors Domato, Araoz, Ortega and Bussi have chosen an easier but more expensive alternative, combining the use of Bocades with emission of classical bonds and banking credit that were expensive and have generated a snowball effect in the public debt. (...) The Bocade had the advantage to be a loan from the People to the State, with an interest rate nill. (...) » (ibid., pp. 122 - 123).

Thus the creation of the Bocade fits perfectly well with the notion of currency finance, but the position of its founding father, R. Cirnigliaro, was ambivalent33. For instance there is a curious paradox in his political position concerning the status and the future of the bond. After having stressed the importance and necessity of the Bocade as a regional tool

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32 Another study concludes also that the cost of issuances of the Austral Bocades was low (about 4,5% for each issuance) and that the net financial benefit for the Provincial treasury for the whole set of emissions between 1985 and 1991, benefit produced by seigniorage and inflationary tax according to the authors, was of 164 millions of pesos in prices of may 1992, viz. about three and four months of budgetary incomes respectively in 1992 and 1985 (Caceres Cano, Druck & Flaja, 1993, p. 11, 16 and 19). Nevertheless, through a bipapelist model of neutral money, this study concludes as Cerro (1988) that the experiment affected negatively the welfare of the provincial population since the government was not able to back the bono at any moment in peso, despite for its authors, « from a theoretical point of view, with the issuance of bonos, the government has the possibility to get benefits and moreover to improve positively the welfare of the society » (ibid., p. 19). But this evaluation is tightly connected to the « currency school » point of view adopted by this scholars.

33 We find the same ambivalence vis-à-vis the Bocade in the local business class and the declarations of the Federacion Economica Tucuman (FET). In the same time that they were saving the convertibility of the Bocade in Austral en 1988 with arguments putting in the front place « not the particular interests of the members of the FET, but a moral compromise with the whole community » (La Tarde, « Operatoria Unica », San Miguel de Tucuman, 17/02/1988), they were pleading for their slow disparition (« El retiro paulitino de los bonos de la circulacion reclama la FET. En un extenso documento formula criticas a la politica oficial », La Gaceta, San Miguel de Tucuman, 3/03/1988).
of economic development in the federal context of Argentina, he concludes with the possibility and even the necessity to redeem it as soon as public finance would be in order, which is contradictory with the political and symbolical dimensions that he gives otherwise to the provincial money and required the permanence of the latter.

On one side, he states the following:

«If the governments that followed us would have stabilized public finances as we have done it, in rationalizing public spending, in making efficient social spending, in increasing public investment and transforming the State into a promoter of economic development, the bonos would not have had any motive to carry on during 18 years » (ibid., pp. 126-27).

On the other side, he tells us:

«In fact, the highest virtue of the provincial bonos, at least of the tucuman one as it has been implemented, was its conversion from an instrument of short term credit into an instrument of defense of the power of decision or sovereignty, as we can call it, of the Provincial States. It happened to be a federal call. It was not a matter of chance or improvisation. It was contemplated on the notes of the first and sole issue of the Riera Government, where the following sentence (from Riera himself) was written: Should the Federalism feeds red and warm the living cell of the Nation » (ibid., p. 125).

«Legally we are organized as a federal country, but in fact we constitute a unitary country. The resolution of this problem should be prioritary to reorganize the Nation. Provinces preexisted to the Nation, and they entrusted it with the task to levy some common taxes and from the resulting amount, to deduce the expenses for the functioning of the national State. Why provinces have to go to Buenos Aires in order to meet a civil servant, the State Secretary of Treasury, who is not elected, is not even a politician, and does not know the provinces, but determines how much and how he will send to them a money which is their money » (ibid., p. 126).

Or still:

«(…) the bono disappeared in the Miranda government, at the expense of high provincial fiscal costs, according to the requisite of the IMF which required the redemption of these monies since they were ruining the business of the external and « eternal » debt. There is no doubt that monetary issuance rooted in the production of goods is not inflationist, and in such a context, the rehabilitation of money and credit as instruments of development are national decisions that are at odd with the concentrating and outward looking neoliberal model » (ibid., 126).

So on the one hand, for Cirnigliaro, once the Bocade would have done the job of reducing the public debt, and if the government would have acted in favour of economic development, it should be no more necessary to mobilize its mediation to maintain the community and it could be redeemed. Moreover, Cirnigliaro seems to ignore the economic dimensions of fiscal monies circulating in treasury circuits, and so doing he returns to an instrumental and unitary view of money. This view seems contradictory with the federalist and antineoliberal declarations he makes on the other hand, and that explain the quasi-simultaneous emissions of Bocades not only in Tucuman, but also in Salta, Jujuy, La Rioja, and perhaps Catamarca (cf. footnote 14 above) and Santiago del Estero too, as suggested by Cirnigliaro34.

The Bocade, for Cirnigliaro, was clearly an « instrument of provincial emancipation » (p. 126) from the outstanding invasive power of Buenos Aires. It was a financial instrument of a federal character in the new democratic context, a regional type of money that was a symbolic manifestation of monetary federalism35. Cirnigliaro is thus not far from regarding

34 «En plena vigencia del Plan Primavera de Alfonsin, cualquier ciudadano con un bono de A 10 Austral, compraba 10 US$ y recibia dos Australes de vuelta. Esta era la realidad, por mas que los academicos monetaristas se empenen en demostrar que el valor del dinero se vincula al circulante, a la tasa de interés, a la inflacion, etc. Se puso en evidencia que un papel firmado por Riera y su Ministro de Economia, podia cambiarse por uno firmado por el Presidente del Banco Central y por otro firmado por el Secretario del Tesoro norteamericano. Que es el dollar, sino un papel verde o un « bono » de los EEUU que, en virtud de la inflacion del resto de los paises localizados en su area de influencia, puede financiar un deficit anual equivalente al producto bruto argentino ? » (ibid., p. 123).

35 In this context, the bono was an instrument of provincial emancipation. A financial instrument of a monetary nature, but of a federal character. There has been a moment in my management where we begun to speak with the ministers of Economy from Catamarca, Jujuy, Salta and Santiago del Estero, about the possibility to regionalize the bonds of each province, and to guarantee their circulation in the Argentinean North-West (NOA).
the Bocade as a potential instrument of renegotiation and adaptation of the federal monetary constitution, in order to take into account the detrimental effects on peripheral provinces of a centralized monetary policy. In this perspective, he recalls in his book that, during his office as minister of economy, he had talks with his colleagues of the surrounding provinces of Jujuy, Salta, Catamarca and Santiago del Estero, about a possible regionalisation of their respective bonos, in order to guarantee their circulation at par in the whole North-Western Region (NOA), a project in which the Banco de la Provincia de Tucuman would have possibly operated as a clearing house and/or a compensation cashdesk. This project failed but had much sense since Salta was the first province to renew, as soon as 1984 (before the Austral plan), with the issue of Bocades, and largely influenced the implementation of bonos of the same type in Tucuman and La Rioja in 1985, Jujuy in 198636.

Figure 7: Tucuman entrepreneurs supporting the Bocade in 2001.

In this project which did not have continuation, we thought that the Bank of the Province of Tucuman, then a provincial public bank, could play the role of clearing or of a compensation cashdesk » (ibid., p. 126).
36 On the Bocade of Salta, see Del Rey and Oribe (1986).
Moreover the political and symbolical dimensions of the provincial money that Cirnigliaro underlines are not the normative product of his sole imaginary. As himself recalls it, they were also shared by the peronist Governor of the province, Fernando Riera, who had hired him as Minister, and had signed the federalist sentence on the banner of the first series of Bocade notes. These federalist feelings of the tucuman peronists also found echoes in the political pro-Bocade attitude of the provincial business community. In the display advertisement presented in figure 7 above, this attitude is clearly stated and appear outstanding. In this poster published in 2001, the business community organized around the Tucuman Economic Federation (FET) stressed the importance of the « Tucuman Money » as a mean of keeping alive a local community of payments, and the questions of trust, confidence and credibility in the provincial money as well as a call for solidarity in order to save it, are put in the front place. It means that, while most of the political elites were operating their conversion to neoliberalism in the nineties, the Bocade was still strongly supported by local economic interests who saw it not only as an economic instrument, but also as a representation of their mutual interdependences and of their belonging to a territorial community of local development.

We can therefore speak of a special north-western (NOA) sub-type of argentinean bono which has been particularly resilient, as we have seen in section 2. But what are the peculiarities of these Bocades of the NOA type and especially of the tucuman bono that we better know? A first striking difference, purely empirical, is that Bocades were the only quasi-monies emerging and maintaining them in the Austral period of high and then hyper inflation. Another outstanding peculiarity of Bocades, theoretically speaking, is that whereas Patacones, Cecors, Lecors, Cecacors, Federales, Quebrachos, etc. were officially bearing interest, Bocades were non interest bearing assets, even if, at least in the case of Tucuman, the possibility for them to pay interest was not excluded by the Act authorizing its issue, but has never been put into practices (see below, article 6 of the Ley 5728). Like the federal Lecop issued in 2001, they were convertible fiat currencies anchored in the national money.

This is not coincident that these north-western provinces represent the older part of Argentina where provincial belonging is an important part of individual identity. It reveals the outstanding political nature of a local money of this type: here financial market incentives for building trust and confidence in the currency, as interest rate, have been excluded ; since the onset of the emissions, incentives aiming at stimulating the demand for the notes were looked for through lotteries, a traditionnal fiscal instrument of the States.

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37 That is why, from the study of the tucuman Bocade, it seems possible to draw insights concerning the political and symbolical factors of the resilience and recurrence of provincial issuance of currencies in Argentina, especially in its north-western region, that confer a non instrumental and non unitary point of view on money. One of these insights, in line with Olivera’s analysis of the « absolute centralisation » of the argentinean Central Bank, could be that the main factor explaining political and monetary instability in Argentina would be that of a « repressed » monetary federalism. The often remarked contradiction between the juridical definition and practical political functioning of the Argentinian federation could perhaps find there partial factors of explanation.

38 And « Publicos » in Jujuy and perhaps Catamarca, but, to date, we know really quasi nothing about these experiments.

39 In the NOA, the interest bearing means of payment were called certificates (like cecades issued in La Rioja and Salta in 1988) and not bonds.

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At last, another possible important specificity of NOA bonos is not so the institutional fact that they mobilise currency boards to insure their convertibility, for it has been also the case of the Cordoba’s Cecor and Entre Rios’ Federal, but the political fact that this convertibility which was not easy to maintain, especially in time of high and hyper-inflation, was de facto and sometimes very explicitly defended by the local business community, even when the political ruling class was in a hurry to come back to normality.

3.2. How did the Bocade function at its outset and stabilize?

Let’s come now to a more precise presentation of how the Bocade was issued and regulated in the province of Tucuman. Figure 5 display its legislative Act of birth in a lonely page (three pages were used in the original form), which shows how simple and short has been the juridical work to institute it. Only eight articles properly concern the issue of the bond and its regulation:

Art. 1 mainly defines the amount of emission authorized by the legislative power. It stipulates an important rule of possible adjustment of this amount by indexation on a local price index.

Art. 2 announces that the bonds are issued to the bearer, and that they have a limited life length fixed by law.

Art. 3 stipulates that they are a State money, a medium of payment of debts issued by the provincial Treasury and rationed by the whole set of State’s organisations which can use it also for intrastate transactions. It specifies that the redeeming power of a bono is equal to its nominal value. It defines the use and holding of Bocades as founded on free acceptation and not on legal tender, precises that they are accepted for taxes and other payments to the public sector.

Art. 4 states that the Bocade is convertible at par in the legal tender federal money and exchangeable at the Bank of the Province so instituted as local currency board (caja de conversion), leaving the definition of the methods of actual exchange (periods, places and schedule) to decrees of the executive power.

Art. 5 defines a possible use of the Bocade for legal guarantees and deposits.

Art. 6 is relative to the possibility for Bocades to pay interests during the three first months of its circulation (which has never been the case as we already note it).

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41 In the NOA, the interest bearing means of payment were called certificates (like cecades issued in La Rioja and Salta in 1988) and not bonds.
42 On the institutional similarities between the Bocades of Salta and Tucuman, see Del Rey & Orive (1986) and Cerro (1988).
Art. 7 authorizes the executive power to create lotteries and define the modes of their functioning.

Art. 8 suggests to municipalities to adopt similar norms concerning articles 3 and 5 of the Act.

Thus is defined a non legal tender tax anticipation script, a temporary bond of redemption of debts denominated in the federal unit of account, and convertible, under specific conditions to be fixed by the provincial government, at par with the legal tender federal money till his date of nullity. But this definition does not tell us how this money worked concretely, beyond the apparent simplicity for defining it legally. In fact the most important point on which to focus on now, is the way the regime of convertibility concretely functioned and adapted to changes in the economic and political national environnement. And for an understanding of this regime, we have to start from the outset : how was concretely organised in 1985 the change at par of Bocades into the legal tender Austral?

The Bocade was introduced in the economic circuit through wages and payments of providers of the public sector. It came back in the public coffers through two main channels : first through the payment of provincial taxes and other public fees, secondly through its exchange in Austral at the Provincial Bank.

The first channel was the most confortable for the Province, since within it the government did not have to change Bocades for Australs. But this channel was very narrow, since the autonomous revenues of the Province in proportion of its total public spendings was quite low (around 20% only). To enlarge this channel, it would have been necessary to increase autonomous revenues, a task very difficult to take on at once.
Figure 8: The Act of birth of the Bocade

HONORABLE LEGISLATURA DE TUCUMÁN
LEY N°: 5.728 - LEY CADUCA POR OBJETO CUMPLIDO O PLAZO VENCIDO

FACULTA AL P. E. A EMITIR "BONOS DE CANCELANCIÓN DE DEUDAS" "BOCADE", DEL ESTADO PROVINCIAL PARA PAGO DE DEUDAS DEL ESTADO PROVINCIAL

SANCIONADA EN FECHA 24-07-1985 * PROMULGADA EL 29-07-1985 * PUBLICADA EL 20-08-1985
Modificada por Ley 5.866 - 6.232 - 6.299 - 6.678 - 6.969 - Caducada por Ley 8.153

* CADUCA * El Senado y Cámara de Diputados de la Provincia de Tucumán, sancionan con fuerza de LEY:

Artículo 1°.- Facúltase al Poder Ejecutivo a emitir "Bonos de Cancelación de Deudas" por la suma de A 10.000.000 (diez millones de Australes), en las series que se determinen en cada oportunidad, para ser aplicados al pago de deudas del Estado Provincial. Los bonos podrán asimismo, ser entregados con igual finalidad a los organismos descentralizados entidades autárquicas y a empresas y sociedades del Estado. El monto autorizado podrá ser actualizado al momento de cada emisión conforme a las variaciones que experimente el Índice de Precios al Consumidor de Bienes y Servicios en San Miguel de Tucumán elaborado por la Dirección de Estadística de la Provincia de Tucumán."

Art. 2°.- Los bonos de cancelación de deudas se emitirán al portador, llevarán indicado el número de esta ley, la serie a que correspondan y contendrán las formalidades previstas en los artículos 744 y 745 del Código de Comercio, sin perjuicio de las que estime conveniente el Poder Ejecutivo y caducarán el 30 de noviembre de 1987.

Art. 3°.- Los bonos serán entregados por la Tesorería General de la Provincia o por las entidades descentralizadas autárquicas y empresas y sociedades del Estado a los acreedores que acepten los mismos en pago de sus créditos, pudiendo también ser utilizados para cancelar deudas de organismos estatales entre sí. Asimismo, la administración central, las entidades descentralizadas, autárquicas y sociedades y empresas del Estado, aceptarán los bonos en cancelación total o parcial de sus créditos en dinero cualquiera fuere la causa de los mismos. En todos los casos el poder cancelatorio de los bonos será a su valor nominal.

Art. 4°.- Los bonos serán canjeables por moneda de curso legal, al 100% (cien por ciento) de su valor nominal en el Banco de la Provincia de Tucumán, en los plazos, lugares y horarios que a ese fin determinará el Poder Ejecutivo sin quebrantar el principio de igualdad entre los tenedores de los bonos. La recuperación de los bonos se debitará en la cuenta que en el Banco de la Provincia de Tucumán, habilitará el Poder Ejecutivo a estos efectos, conforme al procedimiento que establecerá la reglamentación que se dicte.

Art. 5°.- Las fianzas y cauciones reales exigidas por leyes de la Provincia, podrán constituirse utilizando los bonos cuya emisión se autoriza por esta ley.

Art. 6°.- Los bonos podrán devengar un interés nominal mensual durante los tres primeros meses a contar de la fecha de emisión de cada serie. Dicho interés podrá ser variable para una misma serie y será pagadero mensualmente en bonos y en la forma que determine la reglamentación.

Art. 7°.- Se autoriza al Poder Ejecutivo a establecer premios por sorteo a los tenedores de bonos, con las modalidades que se dispongan en la respectiva reglamentación.

Art. 8°.- Las Municipalidades de la Provincia, en el ámbito de sus respectivas jurisdicciones, podrán adoptar normas similares a las contenidas en los artículos 3° y 5° de la presente ley.

Art. 9°.- Las erogaciones que demande el cumplimiento de esta ley, serán atendidas con recursos de rentas generales.
Art. 10.- El Poder Ejecutivo reglamentará la presente ley, dentro de los treinta días de su promulgación.
Art. 11.- Comuníquese.

Dada en la sala de sesiones de la Honorable Legislatura de la Provincia de Tucumán, a los veinticuatro días del mes de julio del año mil novecientos ochenta y cinco.

D}
The second channel was therefore the most important to ensure the bono’s credibility whose its permanent holding by the population and its circulation without discount in the market sphere were testimony. Within this second channel, what was important was not to maximize the return of bonds in the treasury’s coffers as for the first channel, but to the contrary to minimize this return. As an incentive for holding the bonds, lotteries were preferred to payments of interests. The lotteries occurred weekly and in exceptional occasions (using the four – for weekly draws - or five – for exceptional draws - last numerals of the series’ number of the notes). The Caja Popular de Ahorros de la Provincia (the Provincial Popular Savings Bank) was in charge of these lotteries and delivered weekly premiums of twenty times the value of the winning notes, or for exceptional draws large cars or houses.

But the main device to ensure confidence in and credibility of the Bocade was the way effective convertibility was provided., One condition for an extended use of the Bocade in market exchanges and payments of debts, was that people thought that the parity between the bond and the legal tender would be maintained, and that at any moment, in a reasonable lapse of time, they could get legal tender cash or « efectivo » (effective Austral) by changing their Bocades at their nominal value. Another condition was that people in need of spending their money outside the province, could also easily change their bonos at par in the national money.

The exchange device, as it has been primarily instituted, was the following. The Banco de la Provincia de Tucumán, as the financial agent of the provincial treasury, played the role of a currency board (Caja de conversion). People could change their Bocades at its branches and counters, as well as in the Provincial Savings Bank, and, with a small discount, in some other banks. But there were some restrictions: the change was open only on working days and during the 10 days between the 18th and 28th of each month. These restrictions allowed the Bocade to function as a pure short term credit instrument, since even if all the Bocades in circulation were presented for change every month, the device gave time to the provincial treasury, during the period of closure of the change, to collect effective Australs and so avoid liquidity problems. This credit being quasi-gratis as we have seen above in quoting the work of Cerro (1988), the Province was thus able to reduce its floating debt.

Another important effect expected from the Bocade was to permit the government to pay in time, and not late at it had become usual, the wages of the public employees. Thus the bono was an instrument of social peace-making by avoiding social unrest.

But it was financially much more interesting for the provincial government, as well as in some measure for the business community, that the bono remained for a large part in the market circulation and had not to be refinanced in Austral every month. Only at that condition, it could be a device for reducing monetary shortage. Moreover, the fact that it stayed in circulation was a proof of its credibility.

What happened actually? For the minister Cirnigliaro, the official father of the device, it is the following :

« Ten millions of Pesos en Australes bonos have been issued which were maintained into an exchange regime of one Austral (in bono) for one Austral (in legal tender cash) at the bank. (…) Moreover there were lottery’s premiums that sustained their holding, and they benefited of a very good public acceptation, as long as they could be effectively changed freely in legal tender money between the 18th and 28th of each month. The first month has been the harder (September 1985). The 18th of the month, a true avalanche occured at the bank. We had 9 millions of Australes in cash for sustaining the change which, this first day, has been of nearly 7.5 millions, meanwhile around one million were changed the second day. Afterwards, there has been practically no exchanges. We payed that month the wages in time, and worked in order to gather the 10 millions of Australes we needed for the next change. This time, on the first day, the amount of exchanges has been less than 50% of our liquid assets at the Provincial Bank. In the subsequent months, at the end of the period of exchange at the Bank, the amount of bonos applying for change represented 70% of the total issued. It was a clear signal that the people had acquired the trust necessary for a short term credit instrument functioning as a currency. The public held it, to the point that its acceptation was increasing » (Cirnigliaro, 2004, p. 122-123).
E. Cerro, an economist, author of one of the rare papers on the Bocade, describes the functioning of the Bocade in its first two years of existence as follows:

«The provincial Government started issuing the «bonds of redemption of debts» in August 1985 with notes of distinct denomination between 0,10 to 10 Australes. The Provincial Act N° 5728 authorized the executive power to make supplementary issuances. The State made use of these faculties in some occasions. The bonds, put into circulation in order to redeem government debts, were used to pay belated wages of public servants and providers’ invoices, and other creditors of the State in general. Although acceptance of the bonds was formally voluntary, in fact it was compulsory since refusing it signified the impossibility to see her/his financial claim redeemed. The bonds were recycled, since the State received them at their nominal value in payments of taxes, cotisations, fees, etc., and they were also valid for the compensation of debts between public organisms. Individuals also could make use of them in their bilateral transactions. In other words the provincial State issued a currency referred to the Austral standard, which could be freely changed at par with effective Austral, but could circulate only within the boundaries of the Province of Tucuman » (Cerro, 1988, pp. 326-327).

Cerro, as we have seen previously, has demonstrated the great efficiency of the device concerning its capacity to reduce the public debt and the deficit, stressing the role of lotteries in the building of acceptance of the bonds in circulation. He has shown how cheap has been this system, even compared to the regulated rediscount at the BCRA. Nevertheless his evaluation of the Bocade was finally quite negative, since he thought that:

«the financial advantages that this system granted has not been appreciated at their real value by the government, since even at the moment of their launching, the bonos were not accompanied by policies aimed at building credibility, supporting and trust. To the contrary lotteries were not promoted (and were soon cancelled), the maximum amount of emission authorized by the Ley 5728 (A 10 millions indexed on a wholesale price index…) was not respected, the exchange in Austral was always risky for bond’s holders, and the State, far from showing a rigorous and orderly conduct in its management of public finance, had deepened the political line that had previously driven it to bankruptcy » (ibid., pp. 333-334).

Thus, Cerro, while acknowledging that «the bono was an excellent device for financing the fiscal deficit and avoid financial costs», and also recognizing that «the tucuman community was supporting, holding, and using the bonos», concluded that «the final outcome was negative for the province of Tucuman» (ibid. pp. 334-335). In other words, the system was good, but it has been badly used and managed. Paradoxically Cirnigliaro, in 2004, is not very far from this evaluation, but he makes an important nuance. He considers also retrospectively that the system was good but has been effectively not properly used and managed, but with the restriction that this had been the case only after he left the government (February 1987). He describes his own management as successful and criticizes only the later governments that followed the Riera administration.

But both Cirnigliaro and Cerro clearly are not objective and desinterested observants. It is a priori possible that Cirnigliaro embellishes the situation in the years of his managment, but it is also possible that Cerro, reasoning and writing in 1988, i.e. in a critical year where the Bocade was suffering its first «small crisis» (according to Fernando Cortes, the minister of finance in charge that year), was projecting the situation of 1988 retrospectively on the two initial years of Cirnigliaro’s administration. Thus we are confronted to the subjectivities of a political actor and an economist, both defending

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43 Untill now, we have found only two academic papers concerning the tucuman bocade.
44 We find the same idea in Caceres Can, Druck & Flaja (1993) (see footnote 29 above).
45 «The later administrations forgot that the bono was an instrument of short term credit and of a transitory character, whose purpose was only to overcome a deficit which must be transitory. The deficit must be eliminated, and the bono is a natural ally of a plan of financial stabilisation reestablishing the fiscal balance. Domato, and in a greater measure Ortega, Bussi and Miranda, and in another way José Alperovich as a minister of economy, have used the bono as a inexhaustible resource to financing their unbalances » (Cirnigliaro, 2004, p. 124).
specific interests, values and creeds. Therefore more objective criteria and instruments are
needed and have to be found to better appreciate what has been the effective state of affairs.

3.3. How did the Bocade of Tucuman evolve in order to face the national volatility of monetary policy, and instability and/or scarcity of the legal tender currency?

(Still under construction)

Let’s come now to the history and evolution of the Bocade. Starting from a general
description of the different periods of its life, we shall examine then the successive national
institutional changes they initiated. The general idea is to try to understand how
complementarity caused by locality can function in the frame of national monetary regimes
as much contrasted as were those of the Austral, the dollarised and the nationalized Pesos.

In order to follow the evolution of the monetization regime of the Bocade that the
figures 5 and 6 (pp. 20-21 above) display, it is coherent with our previous distinction
between different waves of issuances of provincial monies at the national scale to divide
Bocade’s life in three periods – the Austral, dollarized Peso and nationalized Peso periods
- and several sub-periods comprising moments of « small » crises in the first and the second
periods. The third period is one of large crisis ending with the final redemption of the
Bocade and its extinction.

3.3.1. The austral Bocade (1985 - 1991)

The first period of the « Austral period » spreads from 1985 to 1991. At the time
Bocades were denominated in Austral standard, the new money (unit of account and means
of payments) that has been created in 1984 by the « Austral plan » which intended to
master high inflation inherited from the military dictatorship (see figures 2 above and 9
below).

From August 1985 till October 1987, it is the sub-period of its successful
implementation and administration by the minister R. Cirnigliaro who, with a moderate
issue of Bocade and benefiting of relatively not too bad national economic circonstances47,
obtained its good acceptation and habitation by the population as well as the support of the
local business class. Then, as the national macroeconomy was deteriorating again and the
national monetary policy aimed to reduce the money supply of effective Austra in order to
limit inflation48, the money and credit shortages led first at the end of 1987 to the
overissuing of Bocades, and then at the start of 1988 to a crisis of their convertibility.

Clearly the examination of the agenda of emissions drives to consider that the crisis was
initiated by bonds’ issuances due to the minister who replaced Cirnigliaro, issuances that
overcame greatly the amount necessary to compensate inflation. José Domato, the new
governor elected in December 1987, inherited of the problem. In the first months of 1988,
with fiscal revenues and federal transfers reduced by the recession (-3%), the government
could not ensure the convertibility of Bocades representing now quite a large part of the
money in circulation. In fact this provincial crisis originated in the tightening of an already
restrictive national monetary policy whose purpose was to contain (unsuccessfully) an
accelerating high inflation ; the convertibility of the Bocade was threatened by the quasi
total closure of the discount window of the Provincial Bank at the Central Bank. Worse, the
Provincial Bank was simultaneously excluded by the Central Bank from clearing (La
Gaceta, 6/02/1988).

47 Due to favorable primary effects of the Austral Plan, see figure 9 and table 2.
48 The federal government, through the Plan Primavera, was trying to tackle a renewed climbing inflation that
would end in an hyperinflation in 1989.
More precisely, this crisis of credibility of the Bocade associated to its loss of convertibility started on the 23rd of September when Manuel Apaza, the minister of finance of the Riera Government at the moment, suspended the redemption of Bocades in what was the usual period for that operation. Thus the crisis was the result of an overissuing in a context of growing stagflation (see table 3 and figure 10) and restrictions in the federal monetary policy.\textsuperscript{49} Unable to rediscount its credits, the Provincial Bank, operating as a currency board for the provincial treasury, was lacking of liquidity in «effective Austral». Consequently the institutional device ensuring the convertibility of the Bocade was momentarily interrupted, and credibility and confidence in the 	extit{bono} were at stake. The rate of discount in changing Bocade into Austral (\textit{efectivo}) increased strongly\textsuperscript{50}. Nevertheless it has been only a «small crisis» which did not drive to the end of the experience, since on one side the holding in circulation of Bocades was facilitated by a massive substitution of notes of 50 Australes by small notes of 1 and 5 Australes\textsuperscript{51}, and on the other side, a new structural device for the management of the convertibility was implemented at the initiative of the 	extit{Federacion Economica Tucuman} (FET), the main business organisation of the

\textsuperscript{49} Thus it was not a pure example of imported crisis. Therefore the evaluation of the period by Cerro we mentioned above may be reconciled with that of Cirnigliaro if we take into account that the latter forgets to speak of the policy of his colleague Apaza who succeeded to him in the Riera Government: from july to november 1987 Apaza made five new emissions that cannot be considered as simple ajustments to inflation and replacement of 	extit{bonos} to be put out of circulation.

\textsuperscript{50} «El titulo de la Camara de Artefactos del Hogar, Eduardo El Eter, advirtio que el gobierno debe respetar los plazos pactados originalmente para el canje de bonos, ya que en caso contrario se deteriora la credibilidad de estos medios de pago. Reconocio que el 80% de las operaciones en ese rubro se mueven con bonos y que la momentanea suspension de su rescate obliga al comercio a recurrir a la plaza financiera con un costo mensual del orden de 20% », in « Por la saturacion con bonos. ‘Shock’ financiero en Tucuman », \textit{La Tarde}, 30/10/1987.

\textsuperscript{51} «(…) se lanzaran al mercado 17 millones de australes en bonos ‘chico’ de uno y cinco australes, para el retiro de los bonos de A 50, los cuales ademas tendran conversion diaria para facilitar su circulacion », in \textit{Absorberan los de A 50. Canje diario de bonos}, \textit{La Tarde}, 5/10/1987.
province. From the 17th of February 1988 on, the convertibility of the Bocade was managed in the new frame of the so-called « Operatoria – FET », also named « Operatoria confianza » by the ministry of finance of the time.

Table 2: Issuances and redemptions of Bocades under Austral standard

<table>
<thead>
<tr>
<th>Year and Governor</th>
<th>Month</th>
<th>Issuance</th>
<th>Decree</th>
<th>Amount issued or redeemed</th>
<th>Nominal stock of bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fernando Riera 1983</td>
<td>december</td>
<td>1st issue</td>
<td>1.2827/3</td>
<td>10 000 000</td>
<td>10 000 000</td>
</tr>
<tr>
<td></td>
<td>november</td>
<td>2nd issue</td>
<td>2.3885/3</td>
<td>180 000</td>
<td>10 180 000</td>
</tr>
<tr>
<td></td>
<td>1986</td>
<td>june</td>
<td>3rd issue</td>
<td>1126/3</td>
<td>721 000</td>
</tr>
<tr>
<td></td>
<td>november</td>
<td>4th issue</td>
<td>2808/3</td>
<td>3 500 000</td>
<td>14 409 000</td>
</tr>
<tr>
<td></td>
<td>1987</td>
<td>january</td>
<td>5th issue</td>
<td>98/3</td>
<td>1 975 000</td>
</tr>
<tr>
<td></td>
<td>march</td>
<td>6th issue</td>
<td>766/3</td>
<td>800 000</td>
<td>19 884 000</td>
</tr>
<tr>
<td></td>
<td>may</td>
<td>7, 8 and 9th issue</td>
<td>1148-1733-1885/3</td>
<td>43 000 000</td>
<td>21 784 000</td>
</tr>
<tr>
<td></td>
<td>august</td>
<td>10 and 11th issue</td>
<td>2404/3 et 2944/3</td>
<td>27 000 000</td>
<td>64 784 000</td>
</tr>
<tr>
<td></td>
<td>november</td>
<td>12th issue</td>
<td>475/3</td>
<td>50 000 000</td>
<td>141 784 000</td>
</tr>
<tr>
<td>José Domato</td>
<td>december</td>
<td>Destruction</td>
<td>-21 784 000</td>
<td>120 000 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>october</td>
<td>Destruction</td>
<td>-1 200 000</td>
<td>113 400 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>december</td>
<td>13th issue</td>
<td>307/3 ou 279/3</td>
<td>50 000 000</td>
<td>163 400 000</td>
</tr>
<tr>
<td></td>
<td>1989</td>
<td>march</td>
<td>14th issue</td>
<td>504/3</td>
<td>100 000 000</td>
</tr>
<tr>
<td></td>
<td>april</td>
<td>15th issue</td>
<td>850/3</td>
<td>76 100 000</td>
<td>339 500 000</td>
</tr>
<tr>
<td></td>
<td>may</td>
<td>16th &amp; 17th issue</td>
<td>1111/3 ou 1349/3</td>
<td>170 000 000</td>
<td>509 500 000</td>
</tr>
<tr>
<td></td>
<td>september</td>
<td>18th issue</td>
<td>1989/3</td>
<td>1 000 000 000</td>
<td>1 509 500 000</td>
</tr>
<tr>
<td></td>
<td>october</td>
<td>Destruction</td>
<td>-7 700 000</td>
<td>1 501 800 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>december</td>
<td>19th issue</td>
<td>2704/3</td>
<td>1 000 000 000</td>
<td>2 501 800 000</td>
</tr>
<tr>
<td></td>
<td>1990</td>
<td>february</td>
<td>20th issue</td>
<td>505/3</td>
<td>5 000 000 000</td>
</tr>
<tr>
<td></td>
<td>may</td>
<td>21th issue</td>
<td>1135/3</td>
<td>10 000 000 000</td>
<td>17 501 800 000</td>
</tr>
<tr>
<td></td>
<td>july</td>
<td>22th issue</td>
<td>1562/3</td>
<td>10 000 000 000</td>
<td>27 501 800 000</td>
</tr>
<tr>
<td></td>
<td>september</td>
<td>23rd issue</td>
<td>1921/3</td>
<td>10 000 000 000</td>
<td>37 501 800 000</td>
</tr>
<tr>
<td></td>
<td>october</td>
<td>24th issue</td>
<td>2101/3</td>
<td>10 000 000 000</td>
<td>47 501 800 000</td>
</tr>
<tr>
<td></td>
<td>november</td>
<td>25th issue</td>
<td>2781/3</td>
<td>50 000 000 000</td>
<td>97 501 800 000</td>
</tr>
<tr>
<td>Julio Arazo interventor</td>
<td>december</td>
<td>26th issue</td>
<td>24/3</td>
<td>100 000 000 000</td>
<td>197 501 800 000</td>
</tr>
<tr>
<td>Ramon Ortega</td>
<td>december</td>
<td>1991</td>
<td>26 ème émission</td>
<td>24/3</td>
<td>100 000 000 000</td>
</tr>
</tbody>
</table>

Figure 10: Deflated stock and amount in circulation of Bocades issued between 1985 and 1991 (in 2003 pesos)

Figure 10bis: Bocades issued

Nominal stock of between 1985 and 1991

Source: author’s database
This adaptation of the convertibility regime was negotiated between the government, the business class, the Provincial Bank and the regional leadership of the CGT (the peronist Trade Union). It consisted of the following. Bocade’s holders, henceforth, were permitted to deposit at any moment their Bocades in special accounts at the Provincial Bank. As soon as they were deposited, these bonos were usable at once by the treasury, meanwhile holders had to wait five working days before the treasury begins to daily redeem them in effective Austral in the limit of 5% per working day until 100% of the amount initially deposited was covered; redeemed Australes were credited on checking or deposit accounts either at the Provincial Bank, or at the Popular Savings Bank.

Inasmuch, the crisis was not immediately resolved and lasted probably two months more since, soon after the institutionalisation of the Operatoria FET, the government restrained the scope of the device to 20% of the total amount of bonds issued. But time passing, and the hyperinflation exploding and diminishing rapidly the value of the stock of bonds (figure 10), the «Operatoria FET» became the new central institutional device for ensuring the convertibility of the Bocade until 2003 (with some modifications in 1995, 2001 and 2002). Moreover when the national plan of convertibility of July 1991 will end the hyperinflation, the Bocade as a tax and fiat money convertible in the new Peso standard will be supported, protected and finally guaranteed as an effective and efficient economic instrument by the provincial business class, sometimes more than by the provincial state itself.

Therefore, thanks to the support of the local business class and the negotiated adjustment of the local convertibility regime (operatoria FET), the convertibility crisis did not degenerate in a big crisis of the bond itself. From this point of view, the Bocade was a successful monetary institution. Through local innovation it succeeded in transforming a large national crisis into a small provincial crisis. It will be also the case in other times of serious crises or big changes at the national level, as the replacement of the austral by the dollarized Peso en 1991-1992, the Tequila effect crisis in 1995-1996, and the currency board crisis since 1999 and the «pesification» of the national money in 2002.

Table 3: The macroeconomic situation between 1981 and 2006 (to be completed)

---

With the institution of the new regime of convertibility of the Operatoria-FET, a new period of the Austral Bocade has been open which would last untill the end of 1991. This second subperiod was one of quick and massive devaluation of the stock and of the value of Bocades in circulation (figure 10) because what can be called the second Austral Plan, the Primavera Plan, was not able to stop the processus of hyper-stagflation (hyperinflation combined with a strong recession which reinforced it) that developped at that time. From the end of 1988 on, new massive issuances of Bocades, in order to maintain the purchasing power of the total of bonos in circulation, are made (see figure 10bis and table 2). But until inflation lowered at the end of 1990 (figure 9), these emissions only reduce the speed of the depreciation of the stock. In 1991, inflation is contained, and there is a strong recovery (table 3) with an appreciation of the stock of bonos (it is not before the first term of 1991 that the purchasing power of this stock comes back to the value of its first issue in August 1985). Then we observe a new slower depreciation till november 1991 (very similar to the initial one at the end of 1985), date of the forecasted redemption of the whole stock of bonds and its replacement by new ones denominated in the new dollarized Peso.

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth rate PIB</th>
<th>Growth rate PBG</th>
<th>Growth rate CPI % (dec/dec(t-1))</th>
<th>Growth rate CPI % (yearly mean/yearly mean(t-1))</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>43.8</td>
<td>33.7</td>
<td>60.3</td>
<td>57.7</td>
</tr>
<tr>
<td>1974</td>
<td>335.1</td>
<td>397.8</td>
<td>182.8</td>
<td>215.4</td>
</tr>
<tr>
<td>1975</td>
<td>347.5</td>
<td>310.3</td>
<td>444.9</td>
<td>415.5</td>
</tr>
<tr>
<td>1976</td>
<td>160.4</td>
<td>171.0</td>
<td>176.0</td>
<td>165.3</td>
</tr>
<tr>
<td>1977</td>
<td>169.8</td>
<td>169.6</td>
<td>175.5</td>
<td>171.6</td>
</tr>
<tr>
<td>1978</td>
<td>139.7</td>
<td>140.8</td>
<td>159.5</td>
<td>161.5</td>
</tr>
<tr>
<td>1979</td>
<td>87.6</td>
<td>81.0</td>
<td>100.8</td>
<td>96.8</td>
</tr>
<tr>
<td>1980</td>
<td>-7.0%</td>
<td>131.3</td>
<td>194.5</td>
<td>100.6</td>
</tr>
<tr>
<td>1981</td>
<td>-5.8%</td>
<td>209.7</td>
<td>211.6</td>
<td>164.8</td>
</tr>
<tr>
<td>1982</td>
<td>2.6%</td>
<td>432.7</td>
<td>443.2</td>
<td>343.8</td>
</tr>
<tr>
<td>1983</td>
<td>2.2%</td>
<td>688.0</td>
<td>718.5</td>
<td>626.7</td>
</tr>
<tr>
<td>1984</td>
<td>-4.4%</td>
<td>385.0</td>
<td>345.8</td>
<td>672.2</td>
</tr>
<tr>
<td>1985</td>
<td>-5.8%</td>
<td>81.9</td>
<td>80.1</td>
<td>100.6</td>
</tr>
<tr>
<td>1986</td>
<td>5.8%</td>
<td>174.8</td>
<td>184.7</td>
<td>131.5</td>
</tr>
<tr>
<td>1987</td>
<td>1.8%</td>
<td>387.7</td>
<td>391.6</td>
<td>343.8</td>
</tr>
<tr>
<td>1988</td>
<td>-7.6%</td>
<td>4923.6</td>
<td>5325.2</td>
<td>3079.5</td>
</tr>
<tr>
<td>1989</td>
<td>-2.5%</td>
<td>1343.9</td>
<td>960.0</td>
<td>1939.2</td>
</tr>
<tr>
<td>1990</td>
<td>-5.7%</td>
<td>84.0</td>
<td>75.2</td>
<td>146.2</td>
</tr>
<tr>
<td>1991</td>
<td>5.5%</td>
<td>17.5</td>
<td>18.4</td>
<td>22.8</td>
</tr>
<tr>
<td>1992</td>
<td>8.2%</td>
<td>7.4</td>
<td>8.9</td>
<td>12.1</td>
</tr>
<tr>
<td>1993</td>
<td>5.8%</td>
<td>3.9</td>
<td>5.1</td>
<td>5.5</td>
</tr>
<tr>
<td>1994</td>
<td>-2.8%</td>
<td>5.6</td>
<td>6.7</td>
<td>5.9</td>
</tr>
<tr>
<td>1995</td>
<td>3.9%</td>
<td>0.3</td>
<td>0.7</td>
<td>0.2</td>
</tr>
<tr>
<td>1996</td>
<td>-3.4%</td>
<td>-1.8</td>
<td>-2.3</td>
<td>-2.1</td>
</tr>
<tr>
<td>1997</td>
<td>-0.8%</td>
<td>-0.7</td>
<td>-1.3</td>
<td>-1.4</td>
</tr>
<tr>
<td>1998</td>
<td>4.4%</td>
<td>0.6</td>
<td>0.9</td>
<td>0.7</td>
</tr>
<tr>
<td>1999</td>
<td>-4.4%</td>
<td>-1.5</td>
<td>-0.5</td>
<td>-0.8</td>
</tr>
<tr>
<td>2000</td>
<td>-10.9%</td>
<td>-8.0%</td>
<td>14.0</td>
<td>25.9</td>
</tr>
<tr>
<td>2001</td>
<td>0.6%</td>
<td>3.7</td>
<td>1.0</td>
<td>13.4</td>
</tr>
<tr>
<td>2002</td>
<td>0.8%</td>
<td>6.1</td>
<td>6.5</td>
<td>4.4</td>
</tr>
<tr>
<td>2003</td>
<td>9.0%</td>
<td>8.9</td>
<td>8.3</td>
<td>2.8</td>
</tr>
<tr>
<td>2004</td>
<td>0.8%</td>
<td>10.4</td>
<td>12.0</td>
<td>9.6</td>
</tr>
<tr>
<td>2005</td>
<td>0.8%</td>
<td>10.4</td>
<td>11.3</td>
<td>12.1</td>
</tr>
</tbody>
</table>
The hyperinflated Bocade issued in 1990

And the last bill issued en Austral in 1991 (10 millions of notes of 10 000 australes).
3.3.2. The dollarized Peso Bocade (1992-2001)

Bocades did not disappear with the conversion of Austral in the new Peso. First the ultimate date for the redemption of the remaining Austral Bocades was extended until the end of November 1993 (see figure 11). Then new emissions were made of Bocades denominated in Peso, one Peso being equivalent to 10,000 Australes and immediately convertible at par with one US Dollar. Thus a new stage in the life of Bocades, that we call the «dollarized Peso period», was open and lasted from January 1992 to December 2001.

When the Austral was destroyed by the hyperinflationist process, so was also the Austral Bocade tightly linked to it. Austral Bocades lapsed and were to lose their legal value at the end of November 1991. But in the same time (in 1990), the Governor Domato was contested within its political Party, the peronist Justicialist Party, and he was finally temporarily replaced in January 1991 by a federal «interventor», Julio Araoz, who declared that the Bocade should carry on53. Therefore, the convertibility plan and the dollarization of the peso were not the death of the Tucuman Bocade as it seems to have been the case for the Bocade of Salta. A rebirth’s Act54, prepared by the federal interventor, was voted by the legislative power of the Province in October 1991; it authorized the issue of Bocades in the new national money which was to be put into circulation at the start of 1992. This Act allowed for new issuances of the bonds, without changing their forms and the modalities of their conversion in peso, considering that:


53 It can be explained by the fact that Araoz, a peronist from the Province of Cordoba, was a quite close political friend (La Gaceta, 24 de Junio de 2012, Tucumán) of Carlos Menem, the new peronist president elected in 1989. Menem who was originary from the Province of La Rioja was accustomed to the issuance of Bocades, and La Rioja carried on issuing them in 1992 as well (see above, section 2).

54 The Act n°6299 which modifies the article 2 of the Act 5728 of the 24/07/1985 modified by the Act n°5866 of the 23/07/1987 concerning the Bills of Redemption of Debts.
Figure 11: The ultimate date of change of the Austral Bocade in Peso Bocade

Figure 12: Net stock of Bocades issued between 1992 and 2003

Figure 12bis: Deflated net stock of Bocades issued between 1992 and 2003
Table 4: Issuances and redemptions of Bocades under the dollarized Peso standard

<table>
<thead>
<tr>
<th>Year and Governor</th>
<th>Month</th>
<th>Issuance</th>
<th>Decree</th>
<th>Amounts issued or redeemed</th>
<th>Nominal stock of bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramon Ortega</td>
<td>december</td>
<td>26 th issuance</td>
<td>24/3</td>
<td>Australes: 100 millions</td>
<td>197 501 800 000</td>
</tr>
<tr>
<td>1992</td>
<td>december</td>
<td>1 Peso = 10 000 Australes</td>
<td></td>
<td>19 750 180</td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td>27 th issuance</td>
<td>1274/3</td>
<td></td>
<td>20 256 000</td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td>28 th issuance</td>
<td>3522/3</td>
<td></td>
<td>10 000 000</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>February</td>
<td>29 th issuance</td>
<td>1176/3</td>
<td>20 000 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>April</td>
<td>30 th issuance</td>
<td>2295/3</td>
<td>30 000 000</td>
<td></td>
</tr>
<tr>
<td>Antonio Bussi</td>
<td>December</td>
<td>31th issuance</td>
<td>948/3</td>
<td>15 000 000</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>July</td>
<td>Destruction</td>
<td>45</td>
<td>-50 000 000</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>April</td>
<td>Destruction</td>
<td>12</td>
<td>45 256 000</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>September</td>
<td>32th issuance</td>
<td>20/3</td>
<td>45 256 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>November</td>
<td>34th issuance</td>
<td>1918/3</td>
<td>10 000 000</td>
<td></td>
</tr>
<tr>
<td>Julio Miranda</td>
<td>December</td>
<td>35th issuance</td>
<td>2767/3</td>
<td>85 000 000</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>February</td>
<td>36th issuance</td>
<td>750/3</td>
<td>97 000 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>January</td>
<td>37th issuance</td>
<td>7/3</td>
<td>109 000 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>April</td>
<td>38th issuance</td>
<td>1091/3</td>
<td>109 400 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>November</td>
<td>Destruction</td>
<td>-400</td>
<td>109 000 000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>December</td>
<td>Destruction</td>
<td>-11000</td>
<td>98 000 000</td>
<td></td>
</tr>
</tbody>
</table>

The life of this new Bocade must be divided into four sub-periods that do not fit exactly with the timing of its three successive political administrations by Governors Ramon Ortega, Antonio Bussi and Julio Miranda. The first sub-period was one of transition from the Austral to the Peso Bocade, and it lasted till the Mexican Tequila Effect financial crisis at the end of 1994 under Ortega government. This crisis (recession and banking crisis in 1995) was the first challenge to the dollarized Peso regime. The Tucuman government reacted to the monetary shortage by increasing strongly the amount of Bocades in circulation (to be redeemed in 1999), thus avoiding recession (provincial GNP grew by 2.5% en 1995, meanwhile national GDP knew a decrease of -2.8%, see table 3).

Interestingly in this second sub-period (from january 1995 to december 1996), the massive increase in the stock of bonos from 30 to 80 millions of pesos (table 4) did not threaten the credibility of the bonos and their convertibility into effective Pesos. Therefore the financial and economic crisis was federal more than provincial, and the Bocade did not suffer any discount vis-à-vis the Peso, as the north-american economist, Arnold Harberger, who was observing on the spot and modeling the economy of the Province at the moment, testified in december 1996:

« Quizas la pregunta particular que puede hacerse con respecto a Tucuman es sobre la existencia de una oferta de dinero provincial especial en la forma de bonos, los cuales circulan como dinero efectivo y son generalmente aceptados a su valor a la par dentro de la provincia (aunque los mismos se vendan con descuento en otras partes). Yo pienso, que mientras los mismos no sean muy abundantes, no tienen un efecto...»

55 Ramon Ortega is the governor elected in december 1991 and taking his office in january 1992. Antonio Bussi is the governor elected in december 1995, and Julio Miranda the following governor coming into office in january 2000. Bussi, a military, was the only of the three who was not a peronist but a politician from the extreme right. He had been already at the head of the Tucuman government as a non elected governor at the beginning of the military « Proceso » dictatorship (1976 - 1977).

56 The Tequila financial crisis has been at the origin of a generalized privatization of provincial public banks (Clarke and Cull, 1999). It has been the case for el Banco Provincial de Tucuman, privatized in may 1996 and becoming Banco del Tucuman S.A., but still acting as the exclusive financial agent for the provincial treasury.

57 For the two years 1995 and 1996, total growth rates are 2.7% and 3.5% for Argentina and Tucuman respectively.
special. A rapid test of whether such amounts would be significant in the same Tucuman. It is seen that the provincial government would inundate the market with such bonds, emitting them in a manner superior to the total effect in pesos that Tucuman would desire to maintain under normal circumstances. (...) **Pero (...) no se observa un descuento significativo en el mercado local.**

( ...) Ellos en realidad son aceptados a la par, principalmente porque pueden ser utilizados para cancelar obligaciones tales como los impuestos provinciales. Es cuanto la oferta de bono se hace muy grande en relación con la magnitud del subyacente «uso garantizado» (para pagar impuesto, etc), en que el descuento local comenzara a aparecer » (Harberger, 1996, p. 154).

Bocades were also well accepted on the local markets during these years, as shown in figure 13.

**Figure 13: The general acceptance of the Bocade in the Public in July 1995.**

Nevertheless, a newspaper’s article dated from November 12th, 1995, suggests that the discount rates for changing Bocades against Pesos were quite high due to a monetary anarchy. But as shown in the following quotation of this article which gives us a good description of the various possible ways and costs to do such a conversion, this anarchy was indeed well organized, and costs of transaction more reasonable than frightened:

«“Arbolitos” en la “City”. En la transformación de los valores, los tenedores llegan a perder entre el 1 y el 10 por ciento. (...) La situación se complicó en los últimos meses a raíz de la cuestionada aceptación que tiene el bono para determinados pagos. Cual magica alternativa, se generó entonces un nuevo negocio bancario y los ‘arbollo’ volvieron a aparecer en la ‘City’ como en la época de la hiperinflación (…). (...) El Banco Nacion y sucursales de bancos privados nacionales no operan con nuestro folklórico medio de pago. (Pero) el Banco Empresario de Tucuman emplazó el cambio inmediato en efectivo, al 3% de comisión. Tiene además una ventanilla habilitada para el público al igual que el banco Velox, el Municipal y el ex BPT. En el Velox y el Empresario, por ejemplo, se crearon cuentas en custodia para depósitos en bonos, como otro servicio pagado. Los bancos cooperativos limitan su aceptación de bonos a los cobros de impuestos provinciales y otros servicios. Los empresarios que poseen corrientes en el Banco del Tucuman utilizan las dos operaciones de esa entidad. Una es conocida como ‘Mix’. Para este depósito se acepta solo el 50% en bonos. A las 72 horas, se acredita el monto en efectivo, con la quita de 1% por intereses. La otra operación se denomina ‘FET’ (solicitada por esa entidad empresarial) y devenga igual interés. En este caso los depósitos son 100% en bonos y se acreditan en efectivo a razón del 20% diario a partir del quinto día. El banco del Tucuman también cancela los bonos de los otros bancos, pero a una comisión del 2% del total. Pese a todo, se dio el

58 See also «Los bonos ‘viejos’ caducan en 1999», La Gaceta, November 24th, 1995: «Según informo a la Gaceta, el encargado de la sección cambio de bonos del Banco de Tucuman, (…), “No hay ningún problema con la circulación de esos billetes, porque el banco realiza su rescate normalmente, de acuerdo a la ley”, indico el bancario ».

59 «Hay 80 millones de bonos en danza. La plaza tucumana se complica por la proliferación de esta moneda al que cuesta cambiar », La Gaceta, November 12 th, 1995, p. 18.
The author of this article deplores what he call the monetary anarchy, but shows to the contrary that the change of Bocade into Peso was not so badly organized and so much costly.

Bussi’s government, during its first year of administration (1996), followed on the path of Ortega, but to the contrary in January 1997, after the recovery from the crisis, he started a program aiming to take out of circulation and redeem the whole stock of Bocades (Salvador, 1997). Hence it is for this third sub-period that we can speak of a political crisis of the Bocade threatening its life, and replacing it by a massive appeal to much more costly public debt. As shown in table 4, 50 millions of Bocades, nearly half the total stock, were withdrawn from circulation and destroyed in April 1997. But an accelerating and costly provincial public debt took place, and the attempt fell short. Instead in 1999, Bussi returned to emission of new Bocades, as the Asian, Russian and Brasilian financial crises were developing and, due to the full dependance of its monetary base on foreign entries of capital in the currency board regime framework, led Argentina to a four years long recession. Thus Bussi issued 45 millions of new bonds to redeem those whose redemption was falling due, and added a net emission of 10 millions before leaving the power to his successor.

The first two years of the Miranda’s government compose, with the last year of Bussi’s administration the fourth sub-period of life of the dollarized Bocade. As recession deepened, provoking the defeat of the Peronist-Menemist party at the presidential election of 1999, the new provincial government, an alliance between Peronists and Radicals (UCR) (José Alperovitch, then member of the UCR, was the minister of Economy), carried on enlarging the quantity of circulating Bocades: 42 millions in 2000, and 12 more millions at the beginning of 2001, putting the total stock up to 109 millions (table 4). But as the discount rate of the Bocade on the market was starting to climb above 4% in October, reaching 7% in December (figure 14), 11 millions were withdrawn this month, meanwhile one of the largest monetary, economic, financial, political and social crisis that Argentina has ever known was bursting out. At the outset of 2002, this crisis entailed a radical change in the national monetary regime with the fall of the currency board, and a return to a nationalized peso under the name of «pesification».

Again, as during the Tequila crisis, enlarging the Bocades’ stock and circulation appeared successful for countering the credit crunch and lessen the provoked recession (see table 3): during the four years of the recession, between 1999 and 2002, the cumulated fall of GDP was -19.5% for the whole Argentina, meanwhile it was only -10.5% for Tucuman; if we take only the last three years 1999-2001 of the dollarized Peso, we obtain respectively -8.6% and -2.5% for Argentina and Tucuman (-5.2% and +1.3% for 2000-2001, the Miranda’s government first two years).

60 See Yañez y otros, 2000, pp. 17 & sg.: «De las cifras se concluye que durante los gobiernos de R.B. Ortega y A.D. Bussi, se aumento el endeudamiento anual (promedio) en 120% y 520% con respecto al gobierno de J.C. Araoz. Si comparamos los dos ultimos periodos de gobierno, el endeudamiento anual (promedio) practicamente se triplico» (p. 18).

61 As shown also in table 3, price deflation was weaker in Tucuman than in the whole Argentina in the years 1999-2001 (-4.1% or -4.3% compared to -4.0% or 2.0%), and in 2002, after the «pesification» (nationalization), inflation was stronger (49.4% versus 41% or 31.4% versus 25.9%). On the four years of recession, prices in Tucuman increased by 45% and in Argentina by 37% (December t/December t-1), or, using arithmetic average of monthly indexes, 27% instead of 23%.
Here we have still to describe measures taken to maintain convertibility: Plazo fijo y cheques diferidos, july 2001. Instauration of a unified circuit of the Treasury (Cuenta unica del sector publico a la Tesoreria general en el Banco del Tucuman SA): money received in pesos and partial or total payments made in Bocades, since Pesos were reserved prioritarily for the conversion of Bocades at par by operatoria FEP. Operatoria paralela in december 2001. See La Gaceta july 24th et 29th, 2001. See also Beckmann.

3.3.3. The Nationalized Peso Bocade (2002-2003)

(still under construction)

2002 was a year of very deep crisis for Argentina with a fall of the national GNP of about minus 11% and an inflation of the CPI of 41% (table 3), with large social unrests, political instability, and a large redistribution of wealth due to the monetary crisis and the asymmetric modalities of the «pesification» of debts. In Tucuman, there has been also a strong multidimensional crisis (minus 8% for the GGP and 49.4% (dec/dec) or 26% (anual mean) for inflation) which, in contrast with the hyperinflation crisis in 1989-1991, has been also a crisis of confidence and credibility in the Bocade, whose rate of discount on the market vis-à-vis the Peso, as shown in figure 14, reached nearly 14%, surely a rate never observed before.

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Issuance</th>
<th>Decree</th>
<th>Amounts issued or redeemed</th>
<th>Nominal stock of bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>december</td>
<td>Destruction</td>
<td></td>
<td>-11 000 000</td>
<td>98 000 000</td>
</tr>
<tr>
<td>2002</td>
<td>january</td>
<td>39 th issuance</td>
<td>10/3</td>
<td>20 000 000</td>
<td>118 000 000</td>
</tr>
<tr>
<td></td>
<td>march</td>
<td>40 th issuance</td>
<td>350/3</td>
<td>55 000 000</td>
<td>173 000 000</td>
</tr>
<tr>
<td></td>
<td>june</td>
<td>Destruction</td>
<td></td>
<td>- 4 000 000</td>
<td>169 000 000</td>
</tr>
<tr>
<td>2003</td>
<td>may</td>
<td>disappeared</td>
<td></td>
<td>- 3 100</td>
<td>169 000 000</td>
</tr>
<tr>
<td></td>
<td>june</td>
<td>Final</td>
<td>Rescate federal</td>
<td>-102 000 000</td>
<td>166 900 000</td>
</tr>
<tr>
<td></td>
<td>july</td>
<td>redemption</td>
<td>155 000 000</td>
<td>-53 000 000</td>
<td>64 900 000</td>
</tr>
<tr>
<td></td>
<td>august</td>
<td>destruction</td>
<td></td>
<td>12 000 000</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 5: Issuances and redemptions of Bocades under the nationalized Peso standard under the Miranda’s administration.

But with recession and shortage of national money becoming deeper, the only way for the Province not to collapse and go into bankruptcy was to issue more bonos, while implementing measures to maintain quasi-convertibility and limit an unavoidable crisis of credibility.
Thus, in order to compensate the huge money shortage provoked by the external flight of dollars and the pesification, two new issuances of Bocades were made in January and March 2002 that were increasing nearly twofold the global stock, even if that were followed in June by a small destruction. Without doubts, the inflow was too massive as shown by both rates of discount (figure 15) and inflation (the Tucuman CPI increases more than the national CPI). Cite Elias: bonos in circulation must not represent more than 30% of the monetary basis if credibility is to be maintained; But they would have reached 70%.

Table 6: Stock of Bocades related to provincial own resources and total expenses.

<table>
<thead>
<tr>
<th>Year</th>
<th>Bonds’ stock/Provincial own resources</th>
<th>Bonds’ stock/Provincial Total expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>13.5%</td>
<td>2.8%</td>
</tr>
<tr>
<td>1993</td>
<td>12.0%</td>
<td>2.6%</td>
</tr>
<tr>
<td>1994</td>
<td>16.2%</td>
<td>3.2%</td>
</tr>
<tr>
<td>1995</td>
<td>45.3%</td>
<td>6.8%</td>
</tr>
<tr>
<td>1996</td>
<td>48.9%</td>
<td>9.2%</td>
</tr>
<tr>
<td>1997</td>
<td>19.5%</td>
<td>5.5%</td>
</tr>
<tr>
<td>1998</td>
<td>20.8%</td>
<td>4.4%</td>
</tr>
<tr>
<td>1999</td>
<td>27.9%</td>
<td>4.9%</td>
</tr>
<tr>
<td>2000</td>
<td>38.2%</td>
<td>8.2%</td>
</tr>
<tr>
<td>2001</td>
<td>46.1%</td>
<td>9.5%</td>
</tr>
<tr>
<td>2002</td>
<td>43.3%</td>
<td>13.3%</td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 15: Relation between the amount and the discount rate of Bocades between January 2000 and May 2003


Develop measures taken to improve the confidence in the Bocade in 2002: After the extension of the waiting time of conversion of Bocades in Peso at Operatoria FET (60 days

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62 The first significant increase of the stock of bocades from december 2000 and january 2001 is not reflected in the rate of discount before april (slightly) and november (more strongly) 2001; but the second increase in december 2001 seems to have an immediate and cumulative effect on the discount rate; the third increase in march 2002 is paralleled one month later by a similar increase of the rate of discount which carries on despite no more emission is made and untill specific measures are taken to lower it (see figure 14).
since ?? 2001, 56 days in January 2002), this delay has been lowered to 35 days in June 2002. (Beckmann, 2002) Boletin Numismaticco de Tucuman n° 3, julio 2002).

But decision to redeem definitively the bocade taken in a meeting of provincial governors with IMF representants. Bargain between Duhalde (president) and IMF.

3.4. Was the Bocade successful?

Usually, two indicators (both «prices» of money) are used to evaluate the success of this type of monetary policy, to say: 1/the exchange rate of the local money into an outside currency considered as a major and stable standard of value ; 2/ the purchasing power of the local money measured by a consumer price index. For instance, that is what has been used by scholars such as Farley Grubb in the case of the monetary experiments in currency finance in the British colonies who became the United States of America. To what extent can we use this indexes in the case of the Tucuman Bocade ? Don’t we need also to rely on more qualitative observations?

3.4.1. The convertibility at stake : was the exchange rate at par of the Bocade against the austral and peso maintained?

In the present case, surely the rate of exchange (or discount) of the Bocade vis-à-vis the legal tender should be considered as a good indicator of its level of acceptation by the public. Despite we lack, to date, of systematic data concerning this exchange rate, especially for the Austral Bocade, our general impression drawn from newspaper archives (La Tarde, La Gaceta, La Nacion, etc.), interviews and literature, is that the parity of the Bocade with the Austral as well as with the dollarized Peso has been well maintained in the long run, and it is what explains its long life. It is only shortly in 1988 and at the end of 2001 and during 2002, at the core of the convertibility crisis, that the discount rate deteriorated and overtook the usual transaction cost, as shown in figures 1, 14 and 15 above.

We have seen also that the Bocade had not been affected by the «Tequila Effect» crisis in 1995-1996, despite the important issuances in these years.

Nevertheless the Bocade has known two crises of convertibility, in 1987-1988 and 2001-2003, and in 1997-1999, it has been politically threatened to disappear. The Bocade has also suffered of transaction costs on the market, possibly from 1 to 10% for change in the informal market (arbolitos) as reported in newspapers in 1988\(^{63}\) and 1995\(^{64}\), probably more or less 3-4% in the private banking sector, as reported explicitly in the dollarized Peso period. But, whatever the level of this cost (that should be investigated further for the Austral Bocade), it ought not to be taken as an indicator of the depreciation of the Bocade vis-à-vis the national all-purpose and all-province money (think of the differences of transaction cost shopkeepers have to pay for different credit or payment cards as Visa or American Express). It was mainly the price of liquidity all credit instruments have to suffer. Thus, in the context of growing hyperinflation of the 1987-1989, a rate of discount of 10% was less that the official regulated rate of rediscount at the Central Bank (figure 16).

In fact we have find many quotations confirming that the Bocade was largely accepted and trusted by the public, despite the discount rate it could have to support occasionally to change it immediatly in peso. As long as the Bocade was backed by provincial taxes and effective convertibility at par insured without discount and in a reasonnable delay by the

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\(^{63}\) La Gaceta, november 12 th, 1995. «“Arbolitos” en la “City”. En la transformacion de los valores, los tenedores llegan a perder entre el 1 y el 10 por ciento. (...) (Pero) el Banco Empresario de Tucuman emplemento el cambio inmediato en efectivo, al 3% de comision. (...)»

\(^{64}\) La Gaceta, november 12 th, 1995. «“Arbolitos” en la “City”». En la transformacion de los valores, los tenedores llegan a perder entre el 1 y el 10 per ciento. (…) (Pero) el Banco Empresario de Tucuman emplemento el cambio inmediato en efectivo, al 3% de comision. (…) »
operatoria FET, which has been the case in the long run, Bocade was trusted. Even political opponents of the device recognize this fact:

«De las sensaciones recogidas en la City Tucumana, la lectura es clara: existe confianza en el bono como herramienta financiera, pero también preocupación porque el gobierno no mantenga el esquema vigente, que sostiene su circulación. En este contexto, hay muchas promesas oficiales incumplidas y anuncios económicos concretados fuera de la exigencia de los tiempos de crisis» (Salvador, 1997).

Thus, given the capacity of the Tucuman governments, sustained by the local business community (cf. figure 7), to restore the bond’s credibility by adapting its process of conversion at par, and also to act in order to reduce their rates of discount on the market, it is possible to assume that even the crisis of 2002 was a small crisis, that is a crisis which was not implying the end of the Bocade, as in 1988. The Bocade was not the victim of this crisis but of negotiation with the IMF which stressed the necessity to end with provincial monies.

«El acuerdo que el ex presidente Eduardo Duhalde (in 2002) firmó con el FMI estableció la obligación de que la Argentina vuelva a tener una sola moneda»

Figure 16: Interest rates (1985-1991): Rediscount at BCRA and Call of official banks

3.4.2. What about the purchasing power of the Bocade? Did it add a local inflation?

But an exchange rate index is certainly not totally discriminant for judging the internal viability and quality of a money, since it says nothing of the productive efficiency of the local monetary policy. The evolution of the purchasing power of the money is a better index from this point of view. But with provincial monies based on strict convertibility in national money, the problem is that inflation or deflation of the local money may be massively imported, and that it can be difficult to isolate imported change in the price level from change possibly linked to local emissions.

For Tucuman, we have a historical monthly series for the local CPI concerning the Gran Tucumán (the capital and its agglomeration) that we can compare with an equivalent series for the Gran Buenos Aires which is generally taken as representative of the consumer price level of the whole Argentina, in order to eventually observe differences between the two indexes.

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65 in _Una Historia de Descontroles, Rechazos y Esperanzas_, anonymous Note of information received during an interview in 2009 with José Alberto Cuneo Vergés and three of his collaborators, ex minister of Economy of the gobernor Miranda in 2002.
that would display that the Bocade added local over-inflation to the national level of prices, as generally assumed by economists. The higher cost of transaction due to monetary plurality would explain the higher price level in Tucuman compared to the national level (Cerro, 2002, p. 19)\textsuperscript{66}.

To be developed (cf. figures 17 to 20).

Nevertheless, it seems reasonable to assume that imported inflation (or deflation) has been overwhelming during Bocade’s life, thanks to the violence of the national monetary regimes of either high inflation, or deflation through quasi-dollarization (Figure 7). Adaptation to national monetary policy, and its effects, has been probably the essential task of the provincial monetary policy when aiming at the resilience of the local monetary regime.

**Figure 17:** Annual percentage of variation of the Consumer Price Indexes (yearly average of monthly indexes) in Gran San Miguel de Tucuman (Government of Tucuman) and Gran Buenos Aires (INDEC) (1981-2003)

![Figure 17](image)

**Figure 18:** Relative level of Tucuman CPI compared to Buenos Aires CPI (both indexes = 100 in 1999) (1968-2008)

![Figure 18](image)

**Figure 19:** Differences between the annual rates of variation of Consumer Price Indexes (yearly averages of monthly indexes) in Gran San Miguel de Tucuman (Government of Tucuman) and in Gran Buenos Aires (INDEC)

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\textsuperscript{66} See also La Gaceta, October 13th, 2001, «Advierten que Tucuman podria afrontar una hiperinflation en bonos». 
3.4.3. Did it improve the provincial economic growth?

(Still under construction) Problem of evaluation of informal economy.

Table 7: Yearly growth rates of GNP and CPI: Argentina and Tucuman compared

<table>
<thead>
<tr>
<th>Period</th>
<th>Mean growth rate of GNP %</th>
<th>(mean of yearly growth rates)</th>
<th>Mean growth rates of CPI %</th>
<th>(mean of yearly growth rates)%</th>
<th>Dec(t)/Dec(t-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peso moneda nacional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1975-1984)</td>
<td>0,37</td>
<td>?</td>
<td>270,3</td>
<td>277,4</td>
<td></td>
</tr>
<tr>
<td>Austral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1985-1991)</td>
<td>-0,09</td>
<td>?</td>
<td>1054,4</td>
<td>1051,6</td>
<td></td>
</tr>
<tr>
<td>Dollarized Peso</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1994-2001)</td>
<td>1,49</td>
<td>2,33</td>
<td>0,3</td>
<td>0,6</td>
<td></td>
</tr>
<tr>
<td>Nationalized Peso</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2002-2006)</td>
<td>4,96</td>
<td>5,64</td>
<td>12,6</td>
<td>16,0</td>
<td></td>
</tr>
<tr>
<td>Bocade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2002-2003)</td>
<td>-1,05</td>
<td>-0,95</td>
<td>22,4</td>
<td>25,2</td>
<td></td>
</tr>
<tr>
<td>Without Bocade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2004-2006)</td>
<td>8,97</td>
<td>10,03</td>
<td>6,1</td>
<td>9,9</td>
<td></td>
</tr>
</tbody>
</table>

Source: Table 2

Figure 20: A comparison between Argentinean and Tucumani real growth rates
3.4.4. Did it reduce the provincial debt?

Still under construction

Figure 21:
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