



Monetary experiments of complementarity among state moneys in contemporary federal polities: some general principles and the case of Argentina between 1984 and 2003 with a special attention paid to the tucuman bocade.

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**MONETARY EXPERIMENTS OF COMPLEMENTARITY AMONG STATE'S MONEYS
IN CONTEMPORARY FEDERAL POLITIES: SOME GENERAL PRINCIPLES AND
THE CASE OF ARGENTINA BETWEEN 1984 AND 2003 WITH A SPECIAL
ATTENTION PAID TO THE TUCUMAN BOCADE**

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(Still under construction, draft not to be quoted without permission)

Abstract

Federalism is a political set of principles of action and institution whose purpose is to accommodate unity with diversity without destroying one or the other, and it is not a surprise if social scientists can find in federations – as in Empires - a lot of empirical evidence on monetary plurality and complementarity. This paper addresses the issue of monetary federalism, considering that it is a figure of complementarity among monies caused by locality. The proposed analysis is based on the hypothesis of institutional complementarity which assumes that the principles of organization of a monetary system have to fit, in a way or another, with those of the political organization of the society within which the monetary system functions as a community of account (of debts) and a set of means of payments (of these debts). The first section starts by a developpement of the theoretical idea that with such a definition, money has intrinsically a federal structure combining unicity (of the unit of account) and plurality-diversity (of the means of payment). Then it comes to the fact that this intrinsic federal structure of modern money does not appear clearly in the monetary institutions of most of the existing federations, including Argentina where monetary plurality has always been outstanding. We explain this paradox in term of political repression of monetary federalism. The following sections are devoted to an examination of the practical monetary federalism existing in Argentina from 1984 to 2003. A second section tackles the question of why Argentina exhibits a noteworthy case of monetary federalism, even if it is a repressed one, and describes the different waves of issuances of provincial fiscal monies since the foundation of the federal Republic. A third section focuses on the complementary fiscal money issued by the Province of Tucuman between 1985 and 2003 ; it examines why it was issued, and how it fonctionned at its outset and evolved. Section 4 at last examines if the bocade was an efficient device, given the political and economic environment in which its life developed untill its terminal redeeming by the federal State.

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SUMMARY

1. Political federalism, monetary federalism 4

- 1.1. Some general principles 5
- 1.2. Emergency monies or repressed monetary federalism 7

2. The recurrence of issuances of provincial quasi-monies in the history of Argentina. 13

- 2.1. The four waves of emissions of argentinian provincial monies since 1890 14
 - 2.1.1. The first « Peso moneda nacional » wave (1890-1933). 14
 - 2.1.2. The Austral's (second) wave (1984-1991) 15
 - 2.1.3. The dollarized Peso's (third) and its crisis' (fourth) waves 17
- 2.2. Why such a historical recurrence? Argentinian fiscal federalism and shortages of currency and credit at the provincial level. 19
 - 2.2.1. Fiscal federalism and currency shortage 19
 - 2.2.2. « Absolute centralization » of the monetary system, 21
and shortage and high cost of credit 21
 - 2.2.3. States of political emergency and provincial States' initiative to issue local currencies 23

3. The case of the Bocado issued by the tucuman provincial government. 25

- 3.1. Why was it issued? 28
- 3.2. How did the Bocado function at its outset and stabilize? 33
- 3.3. How did the Bocado of Tucuman evolve in order to face the national volatility of monetary policy and instability and/or scarcity of the legal tender currency ? 38
 - 3.3.1. The austral Bocado (1985 - 1991) 39
 - 3.3.2. The dollarized Peso Bocado (1992-2001) (still under construction) 44
 - 3.3.3. The Nationalized Peso Bocado (2002-2003) (under construction) 51

4. Was the Bocado successful? 53

- 4.1. The convertibility at stake : was the exchange rate at par of the bocado against the austral and peso maintained? 55
- 4.2. What about the purchasing power of the Bocado? Did it add a local inflation? 56
- 4.3. Did it improve the provincial economic growth? 60
- 4.4. Did it reduce the provincial debt? (to follow, under construction) 62

The present crisis of the euro, as an outcome of a single monetary policy for a diversity of economically and culturally heterogeneous territories, is an incentive for a deep rethinking of the conception of this monetary policy and its theoretical underpinnings. Most of monetary experiments in general, but especially in political contexts of federal polities, indicate that we should better think of money not as unique but plural, or better said, as simultaneously unique and plural, and not assimilate plurality only with competition between monies, but also consider complementarity among them (Kuroda, 2008).

Federalism is a political set of principles of action and institution whose purpose is precisely to accommodate unity with diversity without sacrificing one or the other, and it is not a surprise if, despite the fact that a non pluralist view on money also prevails in federalist polities, social scientists can find there a lot of empirical evidence about monetary plurality and complementarity. In mainstream economics and political science governed by the rational choice theory, federalism is conceived as a « market-preserving » device, and no attention is paid to other principles of human action than competition (see the works of Barry Weingast and collaborators). But this view has been disputed since the model does not fit with empirical evidence of many federations whose purpose is firstly « peace-keeping », and which are based on cooperation and complementarity more than economic competition (think of the principle of subsidiarity) between layers of government of different territorial scales. In these federations driven more by politics than economics, we can observe more easily than anywhere else¹ cases of what can be named « monetary federalism ». In relation with the European Union and the Eurozone crisis, it is of interest to study these cases since they design a way of preserving the euro as a common unit of account without depriving member States of issuing complementary fiscal money circulating within States' borders and maintained at par with the euro.

Recent East Asian monetary history has shown us that there is no natural linear evolution of money from metal toward a purely abstract and dematerialized media of exchange. Therefore an important part of the hypotheses founding the European-American mainstream monetary theory appears as nothing but a tale, and then we have to reconsider our reading of the history of money in Europe and America as an inexorable march towards a universal abstract and unique money. Moreover we have to look at federal monetary experiments which have been forgotten because they were not successful in producing stable and permanent institutions, but are part of these « buried knowledges » that, with Michel Foucault, we must

¹ Without doubt we have to except here the cases of Empires that could be tentatively defined as federations founded not on mutual consent but on domination backed by military force. In Empires, monetary plurality is prevalent, and unitary States, even when decentralized, were built partly on the idea of reducing to unicity such a plurality (see Helleiner, 2003).

consider as a crucial material of the scientific knowledge. For the failure of many of them was not the outcome of natural selection due to their economic inefficiency, but of political defeats of the social forces that were promoting them at some historical moments. Indeed we have to consider these experiments not only for the beauty of scientific work aiming at historical truth, but also as genuine and original elements of knowledge important for the design of new political and monetary institutional arrangements of federal type in a more globalized world. Let's remember that during a very long time, before becoming the standard form of money, purely fiat money has been in the West considered by economists and politicians as a purely emergency money, and then discredited as a counterfeited, not true money.

In this perspective, this paper addresses the issue of monetary federalism. It considers that it is a figure of complementarity among monies caused by locality. It is based on the idea of institutional complementarity which assumes that the principles of organization of a monetary system have to fit, in a way or another, with those of the political organization of the society within which the monetary system functions as a community of account (of debts) and a set of means of payments (of these debts). The first section starts by a developpement of the theoretical idea that with such a definition, money has intrinsically a federal structure combining unicity (of the unit of account) and plurality-diversity (of the means of payment). Then it comes to the fact that this intrinsic federal structure of modern money does not appear clearly in the monetary institutions of most of the existing federations, including Argentina where monetary plurality has always been outstanding. This paradox is explained in term of political repression of monetary federalism. The following sections are devoted to an examination of the practical monetary federalism existing in Argentina from 1984 to 2003. A second section tackles the question of why Argentina exhibits a noteworthy case of monetary federalism, even if it is a repressed one, and describes the different waves of issuances of provincial fiscal monies since the foundation of the federal Republic. A third section focuses on the complementary fiscal money issued by the Province of Tucuman between 1985 and 2003 ; it examines why it was issued, and how it fonctionned at its outset and evolved. Section 4 at last examines if the bocade was an efficient device, given the political and economic environment in which its life developped untill its terminal redeeming by the federal State.

1. Political federalism, monetary federalism

1.1. Some general principles

Federalism can be defined as a way to shape a political order on the basis of a hierarchy of values and not, as usual in a unitary State, on a hierarchy of powers (with concentration of all the power at the top). The federal layer of government is not greater in power than the federated governments, for it does not have the monopoly of political competencies : in the domains where they are sovereign, federated entities are superior in power to the federal government. But the latter is in charge of competencies which are greater in value because they found the federation as a whole, for instance by insuring internal peace between member States, and acting for them as their deputy in the external world. Therefore in a federal polity, there is an overlapping hierarchy of powers and no sovereign power in the strict meaning of the word². Sovereignty in this sense is the attribute of an authority separated from any executive power, and whose decisions are enforcable only if federal and federated powers recognize it as a sovereign authority to whom they submit themselves; if not, the federation is on the way toward dissolution. This authority, whose power is purely symbolical, is a third party placed in position of sovereignty above any political power either federal or federated. It usually takes the material and institutional forms of a special judicial power – the Supreme or Constitutional Court – which has the necessary authority to settle on the conflicts of powers between or within the two (or more) layers of governments making up a federative political order.

Now this general structure of federalism makes sense for the monetary order of the modern state-and-market societies where economy is differentiated from the political, the religious and the domestic orders. Decreeing the system and unit of account, maintaining its uniqueness, are competencies of the federal layer ; as stated notably by Hawtrey or Keynes they are of greater value than the powers to issue and circulate means of payments. These latter powers can be shared, decentralized and even decentered ; in order to allow basic transactions, they are usually distributed to different agents and organisations acting at different territorial scales and with different purposes. Monies of payment circulate in multiple spheres of transactions and users' networks (public or private, market or non market, small or large, local, regional or national) ; they take different material forms, are not a priori « all purpose money », and most often have to be « marked » to be accepted in transactions (see the works of Viviana Zelizer and Jérôme Blanc). For them to form a payment community despite the fact they cannot be unified, they must be federated, which allow them to circulate

² On the practical emergence and then theorization of this conception of divided sovereignty in the British American colonies and then the US at the end of the 18th century, see Lacroix, 2010.

in more extended and impersonal networks and across *a priori* heterogeneous transactions' spheres by the mediation of a common federal unit of account.

Therefore in a society symbolized by a common system and unit of account, the power to issue moneys of payment can be distributed functionally and territorially among different issuers (banks, private companies, States, Cities, LETS, Associations, etc.) without necessarily being a danger for the unity and cohesion of the society ; rather the competence of issuing instruments of settling debts appears structurally to pertain to the domain of decentralized or federated powers. But for unification to be effective without centralization, the various means of payment created have to be denominated in a common unit of account (or at least convertible at a stable value) and the parity between units of payment and the unit of account has to be maintained.

As for the third party that would represent the federative sovereign monetary authority, it can be neither the federal power to decree and maintain the unit and the system of account, nor the federated powers to issue means of payment. History shows that the true sovereign in monetary matters is the People of the users of money who decides the future of any money, imaginary or real, in accepting or refusing of using it in its internal multilateral transactions. Now this People can be thought of as deciding, through a monetary Constitution, to delegate its authority by recognizing to an institution independent from the monetary powers (public and private) the competence of interpreting the monetary Constitution in order to settle on conflicts between issuers of currencies, and to maintain the commonality of the system and unit of account.

In this perspective, such a monetary authority should not be confused with the Central Bank which is not independent from issuers of currencies, and is most often than otherwise only a hierarchical police and executive power, that is to say a part and parcel of the federal layer of government. Central Banks are powers that have to built their legitimacy, which means that they are deprived of the ethical authority residing in the values and social norms constituting a population of money users as a social whole. Central Banks need, in order to legitimize their monetary policies, an ethical backing in the values sustaining the political community, either unitary or federative. Surely, the Federal Reserve Board in the US, in its design at least, is the closest institution of such an ideal-typical monetary authority. Its presence could explain why in this country, despite the tremendous monetary power of its private financial industry, monetary repression of non commercial bank issuances of monies is presently one of the weakest in the world.

But why this intrinsic federal structure of modern money does not appear clearly in the monetary institutions of most of the existing federations ? Why complementarities between

monetary and political institutions are not actualized or, at least, taken into consideration by the social sciences ? Why monetary institutions in federal or quasi-federal polities are designed as if Federations were identical to unitary States ? Why the relationships between the political organization of a society and the organization of its monetary system are so little investigated and taken into account, even when the latter and then the former are falling into a deep crisis ? It is not the aim of this paper to answer such questions, answers which would involve to examine the strong links existing between standard monetary theories prevailing in an historical period, and monetary institutions and policies. Here we just focus on some monetary experiments which unveil the effective presence of federalist monetary arrangements in some federations, giving what is more some insights for possible improvements of institutional coherence between the monetary and the political in the EU.

Let's then start the journey to Argentina.

1.2. Emergency monies or repressed monetary federalism

In the monetary history of Argentina, the importance taken in several periods by provincial states' issuance of « quasi-monies » (Bordo and Veigh, 1998) under the form of tax anticipation scrips, bills or warrants (Fisher, 1933 ; Gatch, 2011) has been under-investigated. The situation is nearly similar for 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 present³.

The apparition in Argentina of provincial fiscal paper monies in the form of tax anticipation scrips (generally entitled *letras de cancelacion de obligaciones, titulo publico al portador* or *bonos de cancelacion de deudas*) is noticed by economists only in times of strong social stresses and political crises ; 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 than normativity, and implies that the national or federal State (or an independant central monetary power) has to be fully sovereign in public monetary matters, even if 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, and as soon as crises are overcome, they are outlawed or forgotten since they are not thought to pertain to a

³ 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 as it has been the case in Argentina. Indeed it is also an issue that is not much investigated.

« normal » modern monetary order; when they appear to be macroeconomically significant they are eliminated 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 promoting local economic development is not taken into account and integrated into mainstream monetary theory. Consequently, as stated by Loren Gatch on the subject 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).

It is worth quoting at length this author, since what he writes about 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)⁴.

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)⁵. In fact, economic arguments

⁴ « What are the responsibilities and proper scope of local governments? How are these to be ascertained and asserted against the powers and pretensions 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. » (ibid.)

⁵ « 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. (...) The currency shortage also magnified the burden of private debt. (...) Thus what was true of taxation was also true of the money supply: in perhaps the two most important areas of peacetime

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 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 Europe⁶ and in Argentina as well. An unofficial internal Report of the Dirección Nacional de Coordinación Fiscal con las Provincias (DNCFP) of the Argentinian ministry of economy and finance shows that perfectly. This report, probably prepared by academic economists⁷ 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 reducción 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 power, unicity that would address successfully the two problems of monetary plurality : externalities and uncertainty. This statement is a pure theological argument 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 centralized monetary power. 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).

governmental action, most of the newly independent states adopted harsher policies than the colonial governments they had replaced ». (Holton, 2005, pp. 445-446).

⁶ See the Treaties of Maastricht and Lisbon prohibiting European States but also the Union to issue money and giving a monopoly on money issuance to commercial banks.

⁷ See Licari, J. M., Calgagno J. C., Oviedo, J. M. y Pellegrini S. (w. d.).

In this cognitive context, the case of the Province of Tucuman which issued its money under the name of « Bocade » (*bonos de cancelacion 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 ;

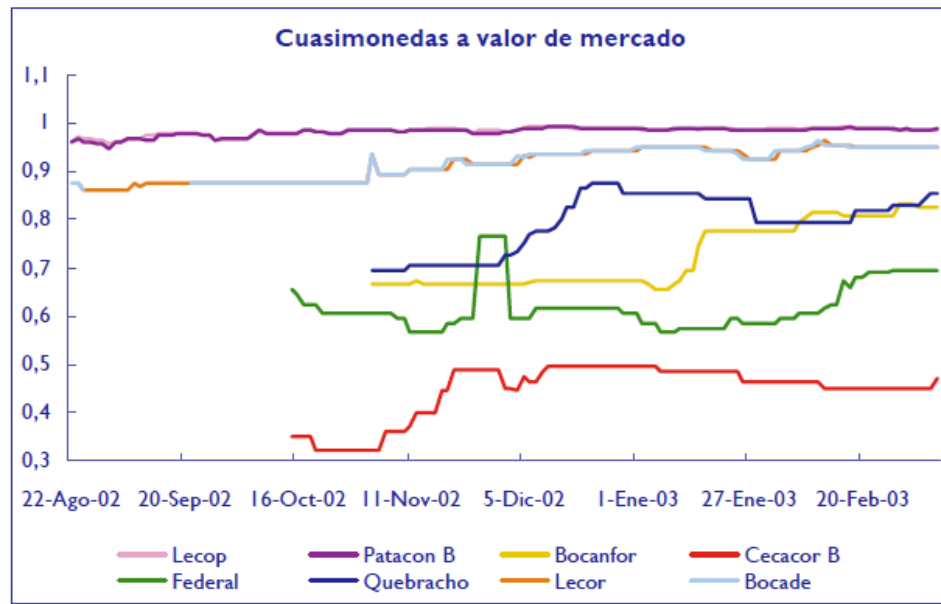
The lasting character of the Bocade first shows that emergency cannot fully explain why such a complementary money is issued. At least, if one wants to keep the notion of emergency and to carry on looking at provincial monies as ephemeral responses to crises of a « normal » state of affairs, it should be considered that the argentinian 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. Now 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.

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 Corrientes (Cecacor), Buenos Aires (Patacon), and Entre Rios (Federal) (see below), 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 a national legal tender in short supply. 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 accross. Moreover 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 it appears to be a money as good as the lecor, *bono* of the Province of Cordoba, usually considered as a successful experiment⁸. 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.

Figure 1: Exchange rates in peso of seven provincial monies in 2002-2003



Source : Banco Central de la Republica Argentina, 2003, p. 3.

Untill there, the *tucuman bono* had proved « Difficult to kill », it had

« resisted to the hyperinflation of Alfonsín, 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's attack who changed a credit without interest from the people into a credit at high rates from the banks and the markets⁹. 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.).

⁸ Compared to levels of interest rates in the period (16,2% and 39,3% respectively in 2000 and 2001 on deposits), discount on exchange rates of 10-15% were still « reasonable ».

⁹ 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).

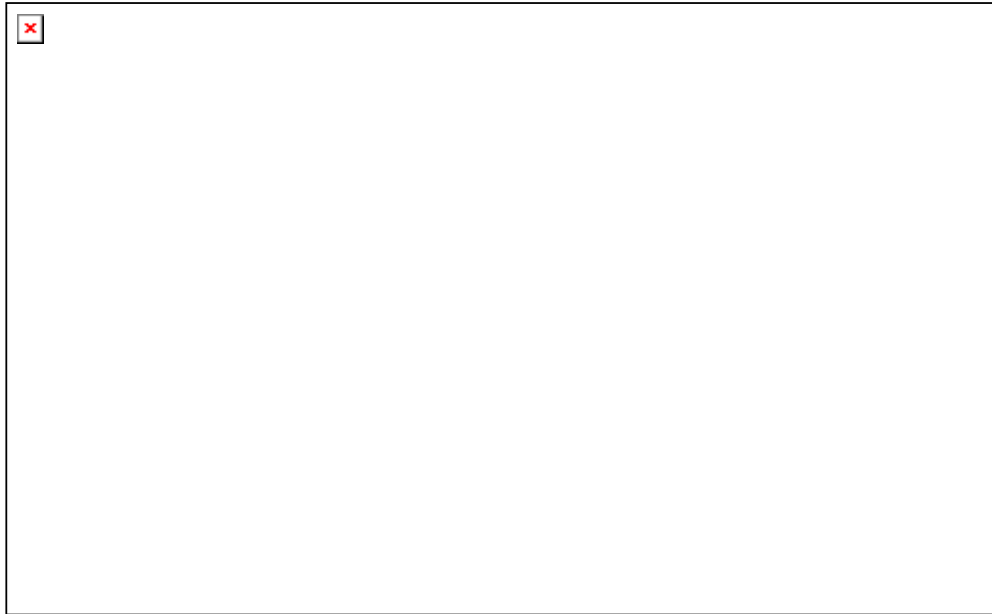
Finally, the tucuman case shows that the issue of Bocade in what is a small and poor peripheral province¹⁰, was caused by structural shortages of national currency and credit money, shortages themselves the outcomes of fiscal and monetary federal institutions and policies. Thus the provincial money was 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 have returned to the provincial treasury and be destroyed or stored in its coffers.

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), the Bocade muddled through this very volatile period with "success". It had been primarily issued just after the end of the « proceso » 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 independence within interdependence, a good definition perhaps for complementarity. And since independence within interdependence is also at the core of the concept of federalism, it justifies to tackle the issue of complementarity caused by locality in terms of monetary federalism.

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

¹⁰ In terms of population and GNP, Tucuman is very close to be to Argentina what Greece is to the Eurozone, i.e. around 3%.



Sources : Vitelli (1986), INDEC and Direccion de estadistica de Tucuman, Gobierno de Tucuman (consulted 26/01/2012) http://estadistica.tucuman.gov.ar/precios_consumidor.htm

Let's see that more precisely by recalling first the importance, recurrence, and causes of provincial fiscal monies' issuance in the history of Argentina, and then by focusing on the dynamic functioning of the tucuman monetary regime, with both its complementarity and relative autonomy vis-à-vis the national monetary regime. Finally we shall try to evaluate the efficiency of the device.

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 2003¹¹). If we limit us to times when the federative Argentinian Republic and the monetary regime of the « Peso moneda nacional »

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 fourty years, between 1827 and 1867. (...) During these fourty 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).

(m\$N) were stabilized, i.e. since the end of the 1880s, we can distinguish four waves of provincial issuance of money¹².

2.1. The four waves of emissions of argentinian 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 argentinian agro-export-led growth and its crisis, 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 (Table 1). 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 restaured 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 (m\$N) standard.

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

Unit of account:	Peso moneda nacional m\$N (1881-1969)
Provinces concerned	Years of issue of provincial monies
Corrientes	1891
Jujuy	1903-1905-1928-1932
Mendoza	1892-1908
Salta	1891-1916 – 1921 – 1927 – 1932 - 1933
San Juan	1894 - 1896 -1899 -1909 -1923 (4% interest)
Santa Fé	1890
Santiago del Estero	1891
Tucuman	1900 - 1915 - 1917 ¹³

As shown in table 1, the north-western provinces (Jujuy, Salta and Tucuman) were the more active. These provinces will be also at the forefront in the second and third waves. But between 1934 and 1984, 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 fiscal money¹⁴.

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).

¹³ On the bond of 1917, see Paez de la Torre, 1997.

¹⁴ The unique evidence is that of one issuance by the Tucuman Province of « *certificados de cancelacion de deudas* » in 1966, but they were not anonymous and looked more as endorsable checks.

Figure 3 : One example from Jujuy (1932)



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 Tucuman in 1985, and then Jujuy in 1986¹⁵.

This second wave that lasted until 1991 can be denominated the « Austral wave » since it coincides with the issue in 1985 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^{16 17}.

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). Cirnigliaro (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 \$a = 1 Austral). It had to be surcharged by a stamp to circulate on the basis of Austral standard.

Figure 4: The Salta's Bocade issued in 1984 in Peso Argentino



Figure 5: The first Bocade of Tucuman issued in 1985 in Austral

¹⁷ See Del Rey & Oribe (1986), Cerro (1988), Caceres Cano, Druck & Flaja (1993), Beckmann (1985, 2001, 2002, 2003), Hernandez Meson (2002), Greco (1994) (quoting José Reissig, « Bonds that brought a boom », *New Economics*, n° 20, winter 1990, London, England).



The money issued during these years, called « Bocade » in Salta, Tucuman and La Rioja, and « Publico » in Jujuy¹⁸, 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).

2.1.3. The dollarized Peso's (third) and its crisis' (fourth) waves (1992-2000 and 2001-2003)

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, and 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

¹⁸ The Province of Jujuy intitled 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.

entered the game : Catamarca in 1993¹⁹ ; Cordoba (Lecor), Formosa (Boncafor), Mendoza (Petrobono/Petrom), Rio Negro (petrobono), and San Juan (Huarpes) in 1995 ; Misiones (Cemis) in 1996 ; and then Corrientes (Cecacor) in 1999.

Thus 11 provinces had already started to issue bonds in convertible Peso before the great crisis of the currency board at the end of 2001. Therefore it is necessary to distinguish between a third and a fourth waves of provincial issuances, the third starting in 1992 and going until 2000. This third wave including 11 provinces and forgotten by the literature either scientific or journalistic, we name the « dollarized Peso » wave²⁰.

The fourth and last wave started in 2001 and included 5 more provinces that were newcomers in the movement : 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 (2001-2003), we name the « convertibility crisis and dedollarised Peso » wave. But as the provinces of the « dollarized Peso » wave continued to issue money until 2003, the period of the so-called convertibility crisis (2001-2003) comprises 16 provinces (over 23 for the whole Argentina) including the largest²¹. To these 16 provinces, we must still add municipal monies²² and the federal government itself which also issued in these years a large amount of « Lecop ». The 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.

Therefore this last wave has been the most impressive (nearly 40% of the monetary basis being made up of provincial fiscal monies in 2002), 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 Provinces mobilized currency boards (Cordoba, Entre Rios, Tucuman), other not ; some benefited of larger tax bases than other (especially when *bonos*

¹⁹ But as we have seen above, it is possible that Catamarca issued *bonos* during the second wave.

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 push the number of provinces belonging to the third and fourth waves respectively to 13 and 7 provinces, 18 Provinces being monetarily active in 2002-2003.

²¹ During the last wave, Jujuy did not issue its own money but used patacones from Buenos Aires that were usable to pay federal taxes.

²² 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.

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 and Rio Negro), other aimed at insuring the value of the *bono* issued on a basket of moneys (San Luis)²³. Strategies for building trust, confidence and credibility were also quite idiosyncratic. That being said, very few things are known in detail on most of these experiments²⁴, and until now historians have unfortunately failed to record provincial and local monetary histories.

Before examining more in depth the case of Tucuman, it is important to see why issuances of provincial *bonos* have been so recurrent in Argentina.

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

This historical recurrence of provincial fiscal monies in Argentina is to be explained by the specific federalist structure of the argentinian political and fiscal systems. Three elements of this structure must be outlined: 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.

Argentinian 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 north-western provinces of Jujuy, Salta, and Tucuman, and 10% in Catamarca and La

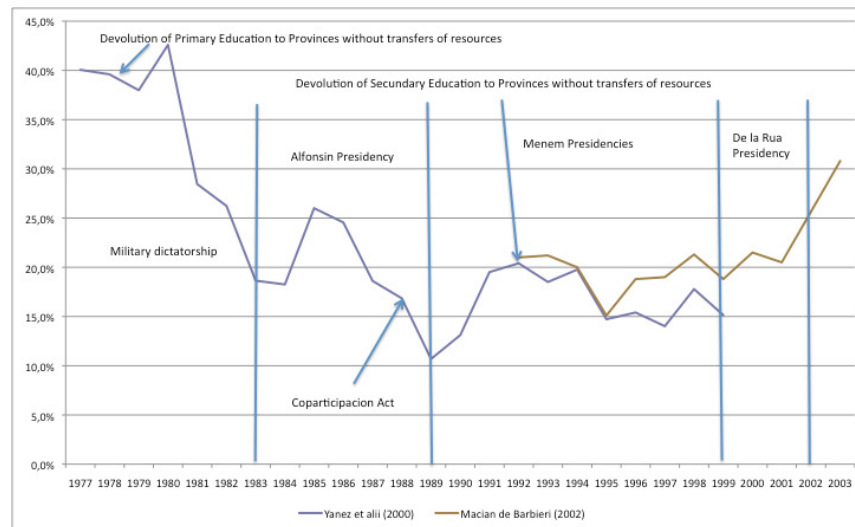
²³ Mendoza issued in 2002 a new *bono* called « Petrom » and guaranteed by oil royalties. San Luis' issue has been one of the most particular since the « San Luis » was not on the Peso standard, but a new standard in itself, its exchange value in Peso was indexed on a basket of five moneys (argentinian Peso, brazilian Real, chilian Peso, U.S. Dollar and Euro).

²⁴ Nevertheless see Théret and Zanabria (2007, 2009).

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 Republic, for Buenos Aires has always benefited of the monopoly on customs duties that were the main source of tax revenues and still are outside the basis of revenue-sharing²⁵. But it has been much reinforced in the eighties by unilateral devolution of social spendings without transfers of the corresponding revenues, initiated by the last military dictatorship and carried on untill 1989 by the following federal government (Falletti, 2010) as shown for Tucuman in Figure 6.

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 negotiations between the federal president and governors, or permanently renegotiated. 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 renegotiation of these rules (Bonvecchi, 2005).

Figure 6 : Share of provincial autonomous revenues in Tucuman total spendings



Sources : Yanez et alii (2000), Macian de Barbieri et alii (1990 and 2001), and

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.

²⁵ The successful issue of pure fiat paper money in Buenos Aires between 1828 and 1867 was backed on these duties (Irigoin, 2003).

This uncertainty is increased when the federal government is itself the prey of a fiscal crisis. 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 argentinian 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, but is extended to federal monetary policy. Because this 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 institutionnal 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.

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 rediscount of the Central Bank was more restrictive, as it has been for instance the case after 1987 when the Austral was confronted to a renewed very high inflation, this source of short term credit could be closed or/and become much more costly. Anyway, through this kind of financing, governments were transferring their structural

problem of liquidity to their banks, and the consolidated accounts of the provincial public sector were not improved. The device only allowed for a better short term smoothing of public debt payments.

In the dollarized Peso period, the argentinian Central Bank (BCRA) was transformed into 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. It is precisely what occurred in Tucuman between 1996 and 1999 under Bussi's management who wanted to get rid of the bocade (see below subsection 4.4).

A second impact on provincial finance of credit shortage and high cost is indirect. It concerns the possibility of funding local economic development and, consequently, the enlargement of provincial tax base. Julio Olivera (1981, 1989, 1992) relates this problem to the « absolute centralization » of the BCRA. For Olivera, an argentinian 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 absence 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 differentiation 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), given that:

« 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, Olivera states that the argentinian one « functions as a totally centralized organism » despite its federal juridical statute that should constrain it to take a decentralised form (ibid., p. 14)²⁶. Thus, 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, argentinian peripheral provinces are confronted to monetary policies and a geographical distribution of monetary institutions that do not fit with their economic needs and the stabilization of their public finance. And we can better understand why local business classes have been generally supporting the « currency finance »²⁷ 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 indebtment 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)²⁸ ? How is it possible to observe

²⁶ « 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 *santiagueño* 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).

²⁷ On the concept of currency finance, see Ferguson, 1956.

²⁸ « 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 Nación. No pueden celebrar tratados parciales de carácter político, ni expedir leyes sobre comercio, o navegación interior o exterior : ni establecer aduanas provinciales : **ni acuñar moneda : ni establecer bancos con facultad de emitir billetes, sin autorizacion del Congreso 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 Congreso de la Nación. Y es precisamente esta autorizacion que falta en el caso de la moneda emitida por el Banco de la Provincia de Tucuman, al igual que con el resto de las monedas norteañas. Pero tambien es cierto que **el Congreso de la Nación tampoco alzo su voz para condenar la emision de monedas provinciales que estaban violando expresas disposiciones constitucionales, como tampoco**

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 Austral²⁹, and also in 1999 in Corrientes where the Cecacor was launched by the *interventor* Mestre who, previously as 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 Bank³⁰, does not fit with the fact that the federal State was actively participating through its « *interventores* » to the issuances³¹.

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).

²⁹ With the following argument : « Bonds of redemption of debts presently enjoy a good acceptance in the local market place ; this acceptance 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)).

³⁰ 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 "**bonds**" **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 seem to be generally accepted as substitutes for Australes within the boundaries of the provinces for purchases of smaller amounts (e.g., restaurants, taxis, etc.). **By restricting the circulation of Australes of smaller denominations, the Provincial Banks force acceptance of these bonds**. The province converts varying amounts of these bonds into Australes each day, depending on its own reserves and its estimates of Australes needed to 'import' goods and services from other provinces. **The total emission of these bonds is, however, relatively small**. In Salta, the total amount in circulation is about US\$ 10 millions, less than six percent of the Province's total need for financing in 1987. **In some ways, this means of finance seems more of a symbolic way of showing independence, than of financing the deficit.** » (World Bank, 1990, pp. 77-78). In another report issued in 1996, we find four occurrences of the word « script » used for « bono » and associated to the 1995 « Tequila effect » crisis (World Bank, 1996, pp. i, 2, 8, 11) ; the issue of « script » is also noticed in the tables but only for 4 provinces (Catamarca, Chaco, Jujuy and Rio Negro). There is no prescriptive indications about these scripts, and they are not considered as a problem: « **several provinces resorted to issuing their own script as a form of payment** » (ibid., p. i) ;

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 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.

« Because of the "Tequila effect", privatization of Provincial Banks and deteriorating fiscal condition of many provinces, private banks were more reluctant to lend to the provinces. The immediate result of this credit crunch was to expand floating debt; i.e. further delay of payments to vendors, contractors and other suppliers and **in some severe cases, payment of salaries with provincial *bonos* or script** » (ibid., p. 11).

³¹ 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 Lecop, the federal *bono*.

Some questions about the tucuman Bocado 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 monetary federalism ?

Let's come now to the specific case of the tucuman Bocado. 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 issued³² 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 an outstanding heuristical interest since Tucuman has always been historically on the forefront of provincial paper money issuance and, despite its small economic and demographic size, has had historically a specific and important political and symbolic position within the Argentine Republic.

Thirdly Tucuman is at the heart of the peripheral region of the North West where issuances of provincial money have been directly linked to regionalism and federalist stakes (see above the banner of the first Bocado note issued in 1985).

The Bocado was 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 7 and 8 give an overview of the amounts issued in nominal and deflated values.

**Figure 7: Evolution of the nominal value of the stock of Bocades
(1 peso post-1991 = 10 000 australes)**

³² 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 did not know during the dollarized Peso crisis a depreciation as strong as Federal (Entre Rios) and Cecaor (Corrientes).

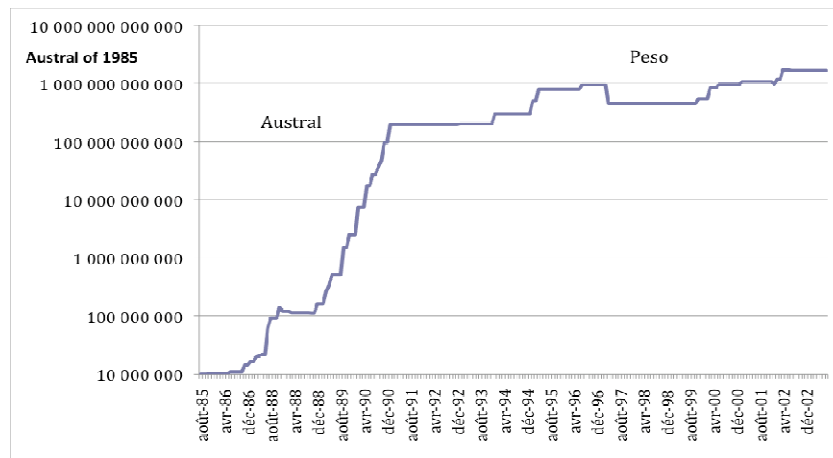
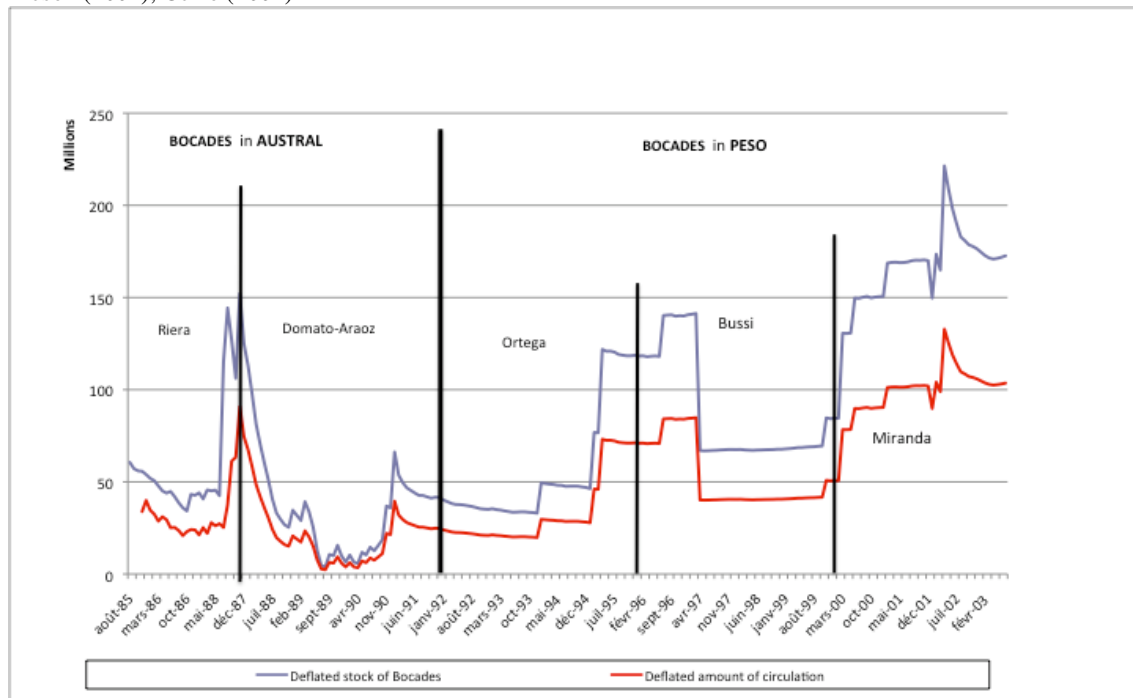


Figure 8: Stock and circulation³³ of Bocades from August 1985 till August 2003 deflated by the CPI index of the Gran Tucuman (in millions of 2003 pesos)

Sources : Beckman (1985, 2001, 2002, 2003); Cerro, (1988); Caceres Cano, Druck & Flaja (1993); Hernandez Meson (2002); Cerro (2002)



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.

³³ 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 », *Boletín monetario y financiero del BCRA*, edición anual 2002, p. 43. Nevertheless fragmented 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.

3.1. Why was it issued?

We have already given above an answer to this question, for the Bocado was not different from other provincial tax-based monies emitted to respond to local shortages of credit and currency. The Bocado is a typical example of currency finance. Nevertheless in its case, it is 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 Bocado seem quite important ; it has to be regarded also as an instrument of autonomisation of a province belonging to the North-West Region (NOA) of Argentina. This dimension, combined with the fact that it has been significantly supported by the tucuman business class, could explain partly its lasting character.

The first purpose of the Bocado 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 for paying 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 Cirnigliaro, the minister of finance in charge of the implementation of the Bocado and the main actor of its good reception among the population :

« 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 endebtmnt of the first semester being 17.8 millions. Between the factors of this new endebtmnt 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 indebttness 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 Bocado to reduce the cost of debt issuing and cumulative indebttness, 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 Bocado 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 23rd of November 1988)³⁴.

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 does not seem 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 ambivalent³⁵. 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 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 which required its permanence.

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:

³⁴ 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.

³⁵ 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 rescuing the convertibility of the Bocade in Austral in 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).

« 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 priority 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 Bocado 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 Cirnigliaro³⁶.

The Bocado, 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 federalism.* Cirnigliaro is thus not far from regarding the Bocado 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

³⁶ « En plena vigencia del Plan Primavera de Alfonsín, cualquier ciudadano con un bono de A 10 Austral, compraba 10 US\$ y recibía dos Australes de vuelta. Esta era la realidad, por mas que los academicos monetaristas se empeñen en demostrar que el valor del dinero se vincula al circulante, a la tasa de interés, a la inflación, etc. Se puso en evidencia que un papel firmado por Riera y su Ministro de Economía, podía cambiarse por uno firmado por el Presidente del Banco Central y por otro firmado por el Secretario del Tesoro norteamericano. Que es el dolar, sino un papel verde o un « bono » de los EEUU que, en virtud de la inflación del resto de los países localizados en su área de influencia, puede financiar un déficit anual equivalente al producto bruto argentino ? » (ibid., p. 123).

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.³⁷ Despite this project did not go further, it made sense since Salta was the first province to renew, as soon as 1984 (before the Austral plan), with the issue of provincial monies, and largely influenced the implementation of *bonos* of the same type in Tucuman and La Rioja in 1985, and in Jujuy in 1986³⁸.

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, they were also shared by the Governor of the province, the peronist Fernando Riera, who had hired him as a 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 9, this attitude is clearly asserted and appears 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 forefront.

This means that, while most of the political elites were operating their conversion to neoliberalism in the nineties, the Bocade was still in 2001 strongly supported by local economic interests who saw it not only as an economic instrument, but also as a representation of their mutual interdependances and of their belonging to a territorial community of local development³⁹.

We can therefore speak of a special north-western (NOA) sub-type of argentinian *bono* which has been particularly resilient, as we have seen in section 2. But what are the

³⁷ '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 Argentinian North-West (NOA). 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).

³⁸ On the Bocade of Salta, see Del Rey and Oribe (1986).

³⁹ 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 local currencies in Argentina, especially in its north-western region, that confort 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 argentinian Central Bank, should be that the main factor explaining political and monetary instability in Argentina is « repressed » monetary federalism. The often remarked contradiction between the juridical definition and practical political functioning of the Argentinian federation can perhaps find there partial factors of explanation.

peculiarities of these *Bocades* of the NOA type and especially of the tucuman *bono* that we better know?

Figure 9 : Tucuman entrepreneurs supporting the Bocade in 2001⁴⁰

Solicitada

DEFENDER EL BOCADE ES DEFENDER A TUCUMAN

Las entidades firmantes entendemos para los intereses provinciales el apoyo a los BOCADE (Bonos de Cancelación de Deuda) y la denominada Operatoria FET.

La moneda Tucumana por excelencia y la que permitió que durante 16 años de vigencia nuestros comercios, empresas, industrias y empresas de servicios tuvieran flujo de circulante para sus negocios es el BOCADE.

El Bono Tucumano posibilitó enfrentar sucesivas crisis nacionales, hiperinflación, recesión, ajustes en la Economía Nacional, etc.

Hoy nuevamente las circunstancias hacen del BOCADE una herramienta imprescindible para la marcha de la Economía de Tucumán.

Por eso instamos a la comunidad en general para que entre todos pongamos el hombro, brindando nuestro respaldo y el apoyo que recree la confianza en esta moneda Tucumana.

Esta confianza en los BOCADE está además sustentada por ser convertible en moneda de curso legal, condición de la que no goza ninguna de otras monedas o títulos provinciales y con un mecanismo de conversión cierto, como demostró ser la Operatoria FET.

Pero todo este apoyo debe realizarse como un esfuerzo compartido por todos y ello obliga a que no haya excepciones en la aceptación de bonos; por ello convocamos a que en una actitud solidaria todas las empresas de servicios comprometan su colaboración, recibiendo los BOCADE a su valor nominal, amén de un adecuado tratamiento de los bonos en su conversión por parte del sistema financiero.

De esta manera y con esta solidaridad se asegurará la vigencia y credibilidad de esta moneda provincial que en estas circunstancias nos es necesaria en las limitaciones de disponibilidades como medios de pago.

**Respaldando al BOCADE estaremos respaldando
los intereses de la comunidad toda**

FEDERACION ECONOMICA DE TUCUMAN (FET)
ASOCIACION DE PRODUCTORES DE PALTA (APROPAL)
HIPERMERCADO LIBERTAD S.A.
CAMARA DE SUPERMERCADOS Y AUTOSERVICIOS DE TUCUMAN
UNION DE TABACALEROS DE TUCUMAN (UTT)
CAMARA DE PRODUCTORES DE TABACO DE LA PROVINCIA DE TUCUMAN
ASOCIACION DE PRODUCTORES TABACALEROS DE TUCUMAN-LA COCHA
ASOCIACION DE PRODUCTORES DE PAPA-SEMILLA (APASE)
CAMARA ARGENTINA DE LA CONSTRUCCION-DELEGACION TUCUMAN
CONFEDERACION DE ASOCIACIONES RURALES DE TUCUMAN (CARTUC)
ASOCIACION DE PRODUCTORES DE PAPA PUCARA (APROPAP)
CENTRO DE AGRICULTORES CAÑEROS DE TUCUMAN (CACTU)
UNION CAÑEROS INDEPENDIENTES DE TUCUMAN (UCIT)
CENTRO AZUCARERO REGIONAL TUCUMAN (CART)
COOPERATIVAS DE TAMBEROS DE TUCUMAN Y TRANCAS
ASOCIACION TUCUMANA DE CITRUS (ATC)
COLEGIO DE BIOQUIMICOS DE TUCUMAN
CORP. DEL MERCADO FRUTIHORTICOLA DE TUCUMAN (MERCOPFRUT)

⁴⁰ « STANDING UP FOR THE BOCADE IS STANDING UP FOR TUCUMAN. The signing entities, concerned with provincial interests, support the Bocade and the so called *Operatoria FET*. The Tucuman money above all, which during the 16 years of its existence allowed our companies, trades and industries to have at their disposal for their business a currency flow, is the Bocade. The Tucuman *Bono* has allowed us to face successive national crises, hyperinflation, recession, adjustments in the National Economy, etc. Today newly the circumstances make the Bocade an essential device for the working of the economy of Tucuman. It is why we ask insistently the community in general to lend a hand all together, giving backing and a support which re-creates confidence in this Tucuman money. This trust in the BOCADE is also sustained by its convertibility in the legal tender currency, condition guaranteed by the sure device that has proved to be the *Operatoria FET*, and whose no other provincial currencies or bonds have. But all this backing must result from an effort shared by everybody, and there must be no exception in the acceptance of the bonds ; consequently we call all the utility companies to commit themselves, in an attitude of solidarity, to accept the Bocades at their nominal value, besides an adequate treatment of the conversion of the *bonos* by the financial system. This way of acting and this solidarity will ensure the effectiveness and credibility of this provincial money which, in the present circumstances of currency shortage, are necessary for us ».

A first striking difference, purely empirical, is that Bocades⁴¹ 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. have been 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 money⁴².

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.

At last, another possible important specificity of NOA *bonos* is not so much the institutional fact that they mobilise currency boards to insure their convertibility⁴³, for it has been also the case of the Cordoba's Cecor and Entre Rios' Federal, but the political fact that its 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 10 displays 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.

⁴¹ And « Publicos » in Jujuy and perhaps Catamarca, but, to date, we know really quasi nothing about these experiments.

⁴² In the NOA, the interest bearing means of payment were called certificates (like *cecaedes* issued in La Rioja and Salta in 1988) and not bonds.

⁴³ On the institutional similarities between the Bocades of Salta and Tucuman, see Del Rey & Orive (1986) and Cerro (1988).

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 acceptance and not on legal tender, and 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 a 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).

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.

Figure 10 : 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 CANCELACION 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 <u>5.866</u> - <u>6.232</u> - <u>6.299</u> - <u>6.678</u> - <u>6.969</u> - Caducada por Ley <u>8.153</u>
* 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 corresponden 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.

The first channel was the most comfortable 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.

The second channel was therefore the most important to ensure the *bono*'s credibility whose permanent holding by the population and 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* (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 even 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, such as it has been primarily instituted, was the following. The *Banco de la Provincia de Tucuman*, 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 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 as 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 for the business community in some measure, that the *bono* remained in market circulation for a large part, 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 was 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 acceptance, 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 occurred 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 acceptance was increasing » (Cirnigliaro, 2004, p. 122-123).

E. Cerro, an economist author of one of the rare academic papers on the Bocade⁴⁴, 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 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

⁴⁴ Till now we have found only two academic papers concerning the tucuman bocade.

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 managed⁴⁵. 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 administration⁴⁶.

But both Cirnigliaro and Cerro clearly are not objective and disinterested observants. It is *a priori* possible that Cirnigliaro embellishes the situation in the years of his management, but it is also possible that Cerro, reasoning and writing in 1988, i.e. in a critical year where the Bocado was suffering its first « small crisis » (according to Fernando Cortes, the minister of finance in charge that year⁴⁷), 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 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 Bocado of Tucuman evolve in order to face the national volatility of monetary policy and instability and/or scarcity of the legal tender currency ?

In order to have such a more objective view, let's come now to the history and evolution of the Bocado. Starting from a general description of the different periods of its life, we shall examine then the successive national crises it muddled through (1987-1988, 1990-1991; 1995-1996; 2001-2003), and the institutional changes they initiated. Our aim here is to understand how complementarity caused by locality can function in the frame of national

⁴⁵ We find the same idea in Caceres Can, Druck & Flaja (1993) (see footnote 29 above).

⁴⁶ « 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 an inexhaustible resource to financing their unbalances » (Cirnigliaro, 2004, p. 124).

⁴⁷ See « 'No habra canje de bonos ni pago de sueldos a estatales'. 'Por hora', dijo el ministro Cortés. Cheques sin clearing », *La Gaceta*, San Miguel de Tucuman, 6/02/1988.

monetary regimes as much contrasted as those of the Austral, the dollarized and the nationalized Pesos.

In order to follow the evolution of the monetization regime of the Bocade that the figures 7 and 8 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 into 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 « 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 June 1985 by the « Austral plan » which intended to master high inflation inherited from the military dictatorship (see figure 12).

From August 1985 till June 1987, the Bocade successfully implemented and managed by the minister R. Cirnigliaro who, with a moderate issuance and benefiting of relatively not too bad national economic circumstances⁴⁸, obtained its good acceptance and habituation by the population as well as the support of the local business class. Then, as the national macroeconomy was again deteriorating, and the national monetary policy was aiming to reduce the money supply of effective Austral in order to limit inflation⁴⁹, 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

⁴⁸ Due to favorable primary effects of the Austral Plan, see figure 12 and table 2.

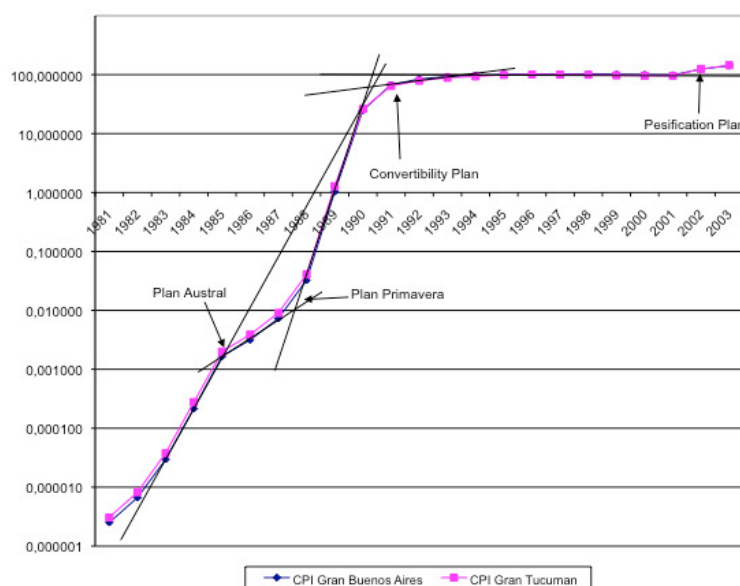
⁴⁹ The federal government, through the *Plan Primavera*, was trying to tackle a renewed climbing inflation that would end in an hyperinflation in 1989.

Provincial Bank was simultaneously excluded by the Central Bank from clearing (*La Gaceta*, 6/02/1988).

More precisely, this crisis of credibility of the Bocade linked 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 13) and restrictions in the federal monetary policy⁵⁰.

Figure 12: Consumer Price Index (yearly average of monthly indexes, base 100 in 1999) in the Aglomerado Gran San Miguel de Tucuman and in Gran Buenos Aires (1981-2003)

Sources: INDEC and [Serie Histórica del Índice de Precios al Consumidor del Aglomerado Gran Tucumán](#),



Dirección de estadística de Tucumán, Gobierno de Tucumán (consulted 26/01/2012) http://estadistica.tucuman.gov.ar/precios_consumidor.htm

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 *bono* were at stake. The rate of discount for changing Bocade into Austral (*efectivo*) increased strongly⁵¹. Nevertheless this crisis did not drive to

⁵⁰ 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 adjustments to inflation and replacement of *bonos* to be put out of circulation.

⁵¹ « El título de la Cámara de Artefactos del Hogar, Eduardo El Eter, advirtió que el gobierno debe respetar los plazos pactados originalmente para el canje de bonos, ya que en caso contrario se deteriora la credibilidad de

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 Australes⁵², and on the other side, a new structural device for the management of the convertibility was implemented at the initiative of the *Federacion Economica Tucuman* (FET), the main business organisation of the 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 minister of finance at the time.

Table 2: Issuances and redemptions of Bocades under Austral standard

Year and Governor	Month	Issuance	Decree	Amount issued or redeemed	Nominal stock of bonds
Fernando Riera 1983					
	december			Austral	
	1985 August	1 st issue	1.2827/3	10 000 000	10 000 000
	november	2 nd issue	2.3885/3	188 000	10 188 000
	1986 June	3 rd issue	1126/3	721 000	10 909 000
	november	4 th issue	2808/3	3 500 000	14 409 000
	1987 January	5 th issue	98/3	1 975 000	16 384 000
	March			3 500 000	19 884 000
	April	6 th issue	766/3	800 000	20 684 000
	May			1 100 000	21 784 000
	July	7, 8 and 9 th issue	1148-1733-1885/3	43 000 000	64 784 000
	August	10 and 11 th issue	2404/3 et 2944/3	27 000 000	91 784 000
	November	12 th issue	475/3	50 000 000	141 784 000
José Domato					
	December		Destruction	-21 784 000	120 000 000
	1988 March	Destruction		-5 400 000	114 600 000
	October	Destruction		-1 200 000	113 400 000
	December	13 th issue	307/3 ou 2779/3	50 000 000	163 400 000
	1989 March	14 th issue	504/3	100 000 000	263 400 000
	April	15 th issue	850/3	76 100 000	339 500 000
	May	16 & 17 th issue	1111/3 1349/3	170 000 000	509 500 000
	September	18 th issue	1989/3	1 000 000 000	1 509 500 000
	October	Destruction		-7 700 000	1 501 800 000
	November	19 th issue	2704/3	1 000 000 000	2 501 800 000
	1990 February	20 th issue	505/3	5 000 000 000	7 501 800 000
	May	21 th issue	1135/3	10 000 000 000	17 501 800 000
	July	22 th issue	1562/3	10 000 000 000	27 501 800 000
	September	23 rd issue	1951/3	10 000 000 000	37 501 800 000
	October	24 th issue	2101/3	10 000 000 000	47 501 800 000
	November	25 th issue	2781/3	50 000 000 000	97 501 800 000
Julio Araoz interventor					
	December				97 501 800 000
	1991 January	26 ème émission	24/3	100 000 000 000	197 501 800 000
Ramon Ortega					
	December				197 501 800 000

This reform 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)⁵³. It consisted of the following. Bocades' 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

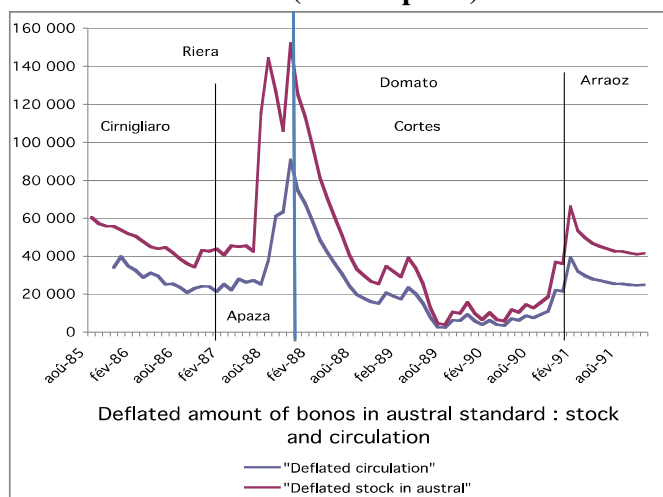
estos medios de pago. Reconocio que el 80% de las operaciones en ese rubro se mueven con bonos y que la momentanea suspension de su rescate obliga al comercio a recurrir a la plaza financiera con un costo mensual del orden de 20% », in « Por la saturacion con bonos. 'Shock' financiero en Tucuman », *La Tarde*, 30/10/1987.

⁵² « (...) 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 *Absorberan los de A 50. Canje diario de bonos*, *La Tarde*, 5/10/1987.

⁵³ See « La convertibilidad de bonos de ahora en mas. Explicaran hoy el gobernador y la FET. El cronograma de pago », *La Gaceta*, 17/02/1988. See also concerning the emergence of the « Operatoria-FET » : « Propuesta de la FET a Cortés. Prevé un sistema de acreditacion diaria de bonos de cancelacion de deuda », *La Gaceta*, 9/02/1988 ; « 'Operatoria Unica'. Desde mañana, nuevo sistema de convertibilidad », *La Tarde*, 17/02/1988 ; « Empresarios aceptan un plan de convertibilidad de bonos. Se realizo anoche una asamblea en la Federacion Economica », *La Gaceta*, 17/02/1988 ; « Podran depositar mas bonos hasta un 20% de lo acumulado. Los empresarios adheridos a la operatoria FET.Un decreto », *La Gaceta*, 3/03/1988.

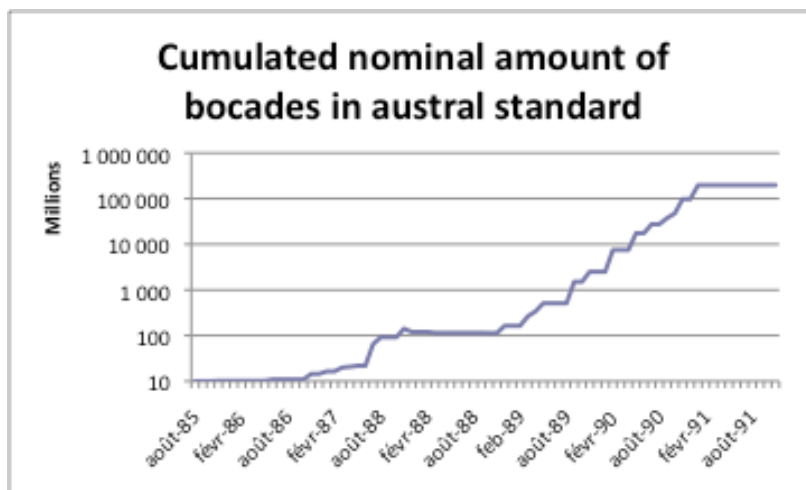
to wait five working days before the treasury begins to daily redeem them in effective Austral in the limit of 5% per working day until 100% of the amount initially deposited. These Australes were credited on checking or deposit accounts either at the Provincial Bank, or at the Popular Savings Bank.

Figure 13: Deflated stock and amount in circulation of Bocades issued between 1985 and 1991 (in 2003 pesos)



Source : author's database

Figure 14: Nominal stock of Bocades issued between 1985 and 1991



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 13), 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).

Therefore, thanks to the support of the local business class and the negotiated adjustment of the local convertibility regime (*operatoria FET*), the convertibility crisis of 1987-1988 did not degenerate in a terminal crisis of the bond itself. To the contrary the Bocade appeared henceforth as a successful monetary institution with a capacity to reduce the consequences of national monetary turbulences at the local level. It was a local innovation which was able to transform a large national crisis into a small provincial crisis. This capacity was confirmed in the following years when the Province was hit by new great crises or big changes at the national level such as the replacement of the austral by the dollarized Peso in 1991-1992, the Tequila effect crisis in 1995-1996, the currency board crisis started in 1999, and the « pesification » of the national money in 2002. For example when the national plan of convertibility of July 1991 ended the hyperinflation, the Bocade went on its way as a tax backed money convertible in the new Peso standard, a proof that it was supported, protected, and finally guaranteed as an effective and efficient economic instrument by the provincial business class (sometimes in opposition with the provincial government itself).

Indeed with the institution of the new regime of convertibility of the *Operatoria-FET*, a new period of the Austral Bocade opened up which lasted until the end of 1991. This second subperiod was one of quick and massive devaluation of the stock of Bocades in circulation (figure 13), for what can be called the second Austral Plan, the Primavera Plan, was not able to stop the dynamics of hyper-stagflation (hyperinflation combined with a strong recession which reinforced it) that developed 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, were made (see figure 14 and table 2). But until inflation lowered at the end of 1990 (figure 12 and table 3), these emissions only reduced the speed of depreciation of the stock. In 1991, inflation was contained, and a strong recovery occurred (table 3) with an appreciation of the stock of *bonos* (in the first term of 1991 the purchasing power of this stock comes back to the value of its first issuance 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 dollarized Peso.

Table 3: Growth and inflation between 1981 and 2006 in Argentina and Tucuman

Money	Governor	Growth rate PIB		Growth rate PBG		Growth rate CPI % (dec/dec(t-1))		Growth rate CPI % (yearly mean/yearly m	
		Argentina	Tucuman	Argentina	Tucuman	Argentina	Tucuman	Argentina	Tucuman
									IES Tuc, p. 28
	1973				43,8	33,7	60,3		57,7
	1974				40,1	40,6	24,2		25,8
	1975	-0,4%			335,1	397,8	182,8		215,4
	1976	-0,5%			347,5	310,3	444,0		415,5
	1977	7,8%			160,4	171,0	176,0		165,3
	1978	-2,8%			169,8	169,6	175,5		171,6
	1979	6,7%			139,7	140,8	159,5		161,5
	1980	0,9%			87,6	81,0	100,8		96,8
peso moneda nacional (m\$n)	1981	-7,0%	-5,7%	131,3	130,9	104,5	100,6		
	1982	-5,8%	1,8%	209,7	211,6	164,8	167,6		
	1983	2,6%	4,9%	433,7	443,2	343,8	362,1		
	1984 Riera	2,2%	1,6%	688,0	718,5	626,7	629,9		
Plan Austral (June 1985); Bocade (August 1985)	1985	-4,6%	-7,1%	385,0	345,8	672,2	620,1		
(1 Austral = 1000 peso Ley Sa)	1986	5,8%	2,1%	81,9	78,6	90,1	100,6		
	1987	1,8%	3,4%	174,8	184,7	131,3	133,2		
Plan Primavera (August 1988)	1988 Domato	-3,0%	0,9%	387,7	391,6	343,0	350,3		
Menem President (July 1989)	1989	-7,2%	-15,2%	4923,6	5325,2	3079,5	3037,1		
Bonex Plan	1990	-2,5%	0,3%	1343,9	960,0	2314,0	1939,2		
Convertibility Plan (Cavallo)	1991 Arraaz	9,1%	10,5%	84,0	75,2	171,7	146,2		
Dollarized peso \$	1992 Ortega	7,9%	2,5%	17,5	18,4	24,9	22,8		
(1 peso = 1 dolar = 10000 australes)	1993	8,2%	6,1%	7,4	8,9	10,6	12,1		
	1994	5,8%	4,4%	3,9	5,1	4,2	5,5		
Tequila Effect crisis	1995	-2,8%	2,5%	1,6	5,0	3,4	5,9		
	1996 Bussi	5,5%	1,0%	0,1	0,6	0,2	1,9		
	1997	8,1%	7,7%	0,3	-1,5	0,5	-0,8		
	1998	3,9%	5,5%	0,7	-0,2	0,9	-0,4		
De la Rúa President, Asian-Russian-Braslian crises	1999	-3,4%	-3,8%	-1,8	-2,3	-1,2	-2,1		
	2000 Miranda	-0,8%	1,5%	-0,7	-1,3	-0,9	-1,4		
	2001	-4,4%	-0,2%	-1,5	-0,5	-1,1	-0,8		
Dedollarized peso	2002	-10,9%	-8,0%	41,0	49,4	25,9	31,4		
	2003	8,8%	6,1%	3,7	1,0	13,4	15,3		
	2004 Alperovitch	9,00%	8,9%	6,1	6,5	4,4	2,8		
	2005	9,2%	10,8%	12,3	12,0	9,6	9,6		
	2006	8,7%	10,4%		11,3	8,8	12,1		

3.3.2. The dollarized Peso Bocade (1992-2001) (still under construction)

As already mentionned, Bocade did not disappear with the change from Austral to a new dollarized Peso at the federal level. 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 immediatly convertible at par with one US Dollar. Thus a new stage in the life of Bocades, that we call the « dollarized Peso period », was opened and lasted from January 1992 to January 2002.

When the Austral was destroyed by the hyperinflationist process, the Bocade tightly linked to it could have also disappeared, all the more so since the circulating Bocades were to lost their legal value at the end of November 1991. But Governor Domato, contested inside its political Party - the peronist Justicialist Party, was replaced in January 1991 for the last year of his mandate by a federal « interventor » who declared that the Bocade should carry on⁵⁴. Therefore, the convertibility plan and the dollarization of the peso did not kill the Tucuman

⁵⁴ It can be explained by the fact that Julio Araoz, this interventor was a peronist from the Province of Cordoba who was a quite close political friend of Carlos Menem, the new peronist president elected in 1989 (*La Gaceta*, 24 de Junio de 2012, Tucumán). 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).

Bocade as it seems to have been the case for the Bocade of Salta. A rebirth's Act⁵⁵, 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 :

« the *Bonos de Cancelacion de Deudas* are presently well accepted on the market place. (...) this acceptance is based on the system of convertibility set up by the Government of the Province by means of the operations of deposit and change, through the Provincial Bank. (...). (...) inasmuch it results admissible to allow the Executive Power to take the necessary measures for adapting the circulation of the *Bonos de Cancelacion de Deudas*, to the new conditions established at the national level, when the change in the monetary unit will be implemented »⁵⁶.

Figure 15: The ultimate date of change of the Austral Bocade in Peso Bocade



As displayed by figures 16 and 17, the monetary regime of this new Bocade must be divided into four sub-periods that do not fit exactly with the timing of the three successive administrations of Governors Ortega, Bussi and Miranda⁵⁷.

1. The first sub-period was one of transition and conversion from the Austral to the Peso Bocade, with few new issuances. It lasted till the Tequila Effect financial crisis at the end of 1994 under Ortega government.

2. This crisis (recession and banking crisis in 1995⁵⁸) was the first challenge to the dollarized Peso regime. The Tucuman government reacted to the monetary shortage by

⁵⁵ 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.

⁵⁶ Honorable legislatura de Tucuman, Ley N° : 6.299 promulgada el 23-10-1991, publicada el 08-11-1991, http://www.hlt.gov.ar/digest_textoley.php?selley=6299.

⁵⁷ 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 one 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).

increasing strongly the amount of Bocades in circulation (to be redeemed in 1999), thus avoiding recession (provincial GDP grew by 2.5% in 1995, meanwhile national GDP knew a decrease of -2.8%, and for the 1995 and 1996, total growth rates are 2.7% and 3.5% for Argentina and Tucuman respectively, see table 3).

Figure 16: Net stock of Bocades issued between 1992 and 2003

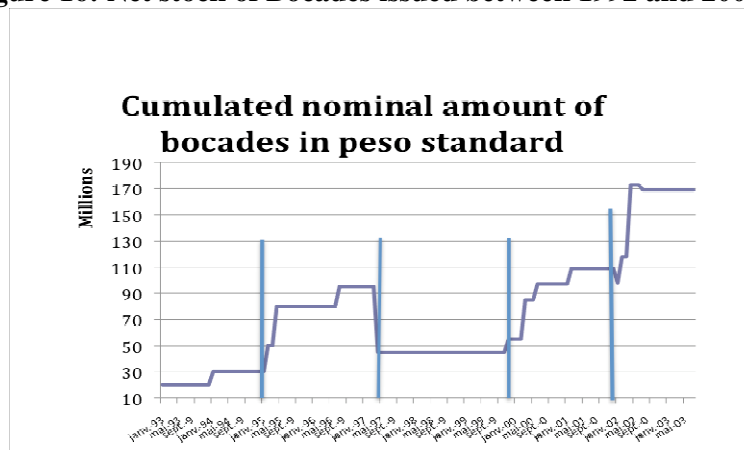
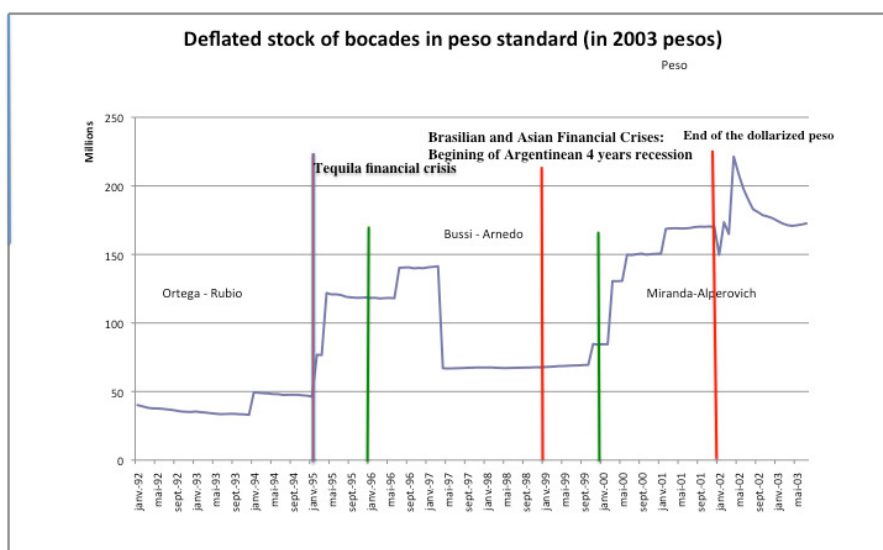


Figure 17: Deflated net stock of Bocades issued between 1992 and 2003



Interestingly in this Tequila 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 threatened the credibility of the *bonos* and their convertibility at par into effective Pesos. 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

⁵⁸ 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 *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.

was observing on the spot and modelizing the economy of the Province at the moment, testified in December 1996:

« Perhaps the specific question which may be made concerning Tucuman is about the existence of a provincial money supply under the form of *bonos*, that circulate as if they are real money and are generally accepted at par within the province (though they are sold with discount outside). I think that if they are not plentiful, they don't have any special effect. A quick test of their affluence would be their sale with a significant discount in Tucuman itself. Surely it should occur if the provincial Government would flood the market with such *bonos*, issuing them in a greater amount than the total of cash in Peso that Tucuman wants to maintain in normal circumstances. (...) **But we do not observe any significant discount on the local market place. (...) They are effectively accepted at par**, mainly because they can be used to settle on liabilities such as provincial taxes. That is when the supply of *bono* becomes very large relatively to the extent of its underlying « guaranteed use » (payment of taxes, etc.), that local discount is likely to appear » (Harberger, 1996, p. 154).

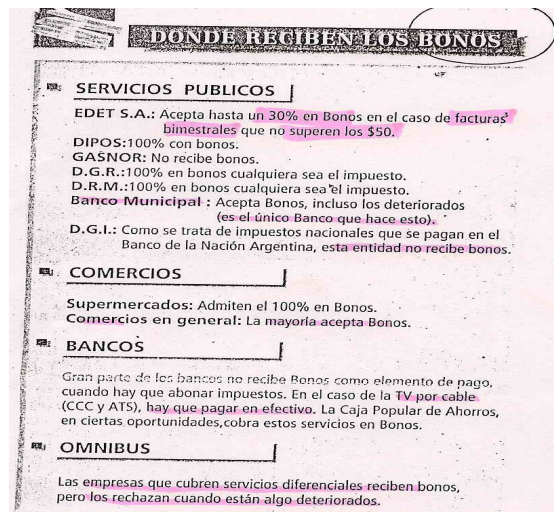
Table 4: Issuances and redemptions of Bocades under the dollarized Peso standard

Year and Governor	Month	Issuance	Decree	Amounts issued or redeemed	Nominal stock of bonds
1991	january	26 th issuance	24/3	Australes : 100 millions	197 501 800 000
Ramon Ortega	december				197 501 800 000
1992				1 Peso = 10 000 Australes	19 750 180
1993		27 th issuance	1274/3	20 256 000	20 256 000
1994		28 th issuance	3522/3	10 000 000	30 256 000
1995	february	29 th issuance	1176/3	20 000 000	50 256 000
	april	30 th issuance	2295/3	30 000 000	80 256 000
Antonio Bussi	december				80 256 000
1996	july	31 th issuance	948/3	15 000 000	95 256 000
1997	april	Destruction		-50 000 000	45 256 000
1998					45 256 000
1999	sept. Oct.	32 th issuance	20/3	30 000 000	45 256 000
		33 th issue	266/3	15 000 000	
		Destruction	212/3	-45 000 000	45 256 000
	november	34 th issuance	1918/3	10 000 000	55 000 000
Julio Miranda	december				55 000 000
2000	february	35 th issue	2767/3	30 000 000	85 000 000
	may	36 th issue	750/3	12 000 000	97 000 000
2001	january	37 th issue	7/3	12 000 000	109 000 000
	april	38 th issue	1091/3	400 000	109 400 000
	november	Destruction		- 400 000	109 000 000
	december	Destruction		-11 000 000	98 000 000

Figure18 displays also that Bocades were well accepted on the local markets during these years⁵⁹.

Figure 18: The general acceptance of the Bocade in the Public in July 1995.

⁵⁹ See also « Los bonos 'viejos' caducan en 1999 », *La Gaceta*, November 24th, 1995: « Segun informo a la Gaceta, el encargado de la seccion cambio de bonos del Banco de Tucuman, (...), "No hay ningun problema con la circulacion de esos billetes, porque el banco realiza su rescate normalmente, de acuerdo a la ley", indico el bancario ».



Source : Ricardo Heredia. *La Gaceta*, July 27th, 1995

A newspaper's article published in November 1995 nonetheless draws attention to the discount rates when changing Bocades against Pesos, suggesting that they were quite high due to a monetary anarchy⁶⁰. But in fact, as shown in the following quotation from this article, it is a description of the various possible ways and costs to do such a conversion, showing that this « anarchy » was indeed quite organized and not so much costly:

« « Arbolitos » in the « City ». In the change of assets, the **holders can lose between 1 and 10 per cent.** (...) The situation became complicated in the last months as a result of doubts about the acceptance of the *bono* for determinated payments. Then like a magical alternative, a new banking business appears, and the « arbolitos » (street moneychangers) reappear in the « City » as in times of hyperinflation (...). (...) *Banco Nacion* and branches of national private banks do not use our outlandish means of payment. The *Banco Empresario de Tucuman* implemented the immediate exchange in peso with a **commission of 3%**. Moreover there is an exchange window opened to the public as well as in the *Velox Bank*, the *Municipal Bank* than in the ex *Banco de la Provincia de Tucuman* (BPT). In the *Velox* and the *Empresario* Banks, have been created custodian accounts for deposits in *bonos*, as other paid services. **Entrepreneurs who own a current account in the Bank of Tucuman use both operative processes of this entity. One is known as 'Mix'. For this deposit, on 50% in bonos is accepted. In 72 hours, the amount is credited in effective (peso), with a rebate of 1% for interest. The other device is called « FET » (demanded by this business association) and the same interest is due. In this case deposits are 100% in bonos and are credited in peso at the rate of 20% daily from the fifth day. The Bank of Tucuman redeems also the bonos of other banks, but with a commission of 2% on the total amount.** Despite all that, it happened that the official Bank was not able to fulfil its commitment facing a shortage of legal tender notes at the Treasury. 'Nor the clients were allowed to take back the *bonos* they have deposited », said a bank employee ascribing this situation to the necessity for the State to pay for belated wages ».

This quotation nevertheless shows also that the convertibility of the Bocade was a permanent constraint on the credibility of the Provincial Government, even if the bono was well received on the local market place. Generalized lack of Pesos was propitious to the apparition of local financial speculators taking advantage of the change in the relative disposable amounts of Pesos and Bocades. But as the shortage of Pesos in the provincial Treasury's coffer in 1995 could be attributed to the deep financial crisis that the national

⁶⁰ « Hay 80 millones de bonos en danza. La plaza tucumana se complica por la proliferacion de esta moneda al que cuesta cambiar », *La Gaceta*, november 12 th, 1995, p. 18.

currency board regime was suffering this year, it seems that the Tucuman Government was able to avoid the blame, when not able to assure bocades' conversion in time, and to muddle through once more.

Figure 19 : Endebtment of the Tucuman Province by Governor Bussi from 1997 to 1999

Títulos Emitidos por la Provincia de Tucumán al 31/12/97

Cuadro 11:

Fecha de Emisión	Título	Plazo (años)	Tasa
Ago-91	Bonos Independencia	10	3 % trimestral
Nov-99	Bonos Independencia Argentina	10	3% anual
Ago-97	Eurobono Serie 2	10	9,45% Nominal anual
Ago-97	Eurobono Serie 3	10	Tasa flotante Libor
Jun-96	Boso	10	4% anual sobre saldos
Jul-97	Certif. de Aporte Solidario	4	1,2% mensual sobre saldos

Fuente: Anexo N°1 del Informe Económico Regional del Ministerio de Economía y Obras y Servicios Públicos de la Rep.Argentina.Nov.1998.

De acuerdo a la fecha de emisión, excepto los Bonos Independencia, todos los demás fueron emitidos por el gobierno de A.D. Bussi, siendo además a largo plazo. El **stock de deuda de Tucumán en Títulos Públicos** a diciembre de cada año, en miles de pesos corrientes es:

Deuda en Títulos Públicos de Tucumán al 31 de Diciembre de 1998 y 1999
En miles de pesos Valores Corrientes.

Cuadro 12:

Nombre de los Títulos	1998	1999
Eurobonos Serie 2 y 3	364286	329464
BOSO	49748	45089
Bonos Independencia	46646	33074
Cheques Diferidos	30825	67661
Bote 10	25226	8550
Independencia Arg.Escriturales	18862	33911
Independencia Argentina	16963	14043
Certificados Aportes aolidarios	6966	3291
Letras de Cambio	6895	990
Bocon	4796	4360
Bocep	1810	3060
TOTAL	573023	543493

Fuente: Elaboración propia en base a información suministrada por la Contaduría General de la Provincia de Tucumán.

Source : Yanez et alii (2000)

3. 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 this third sub-period is that of the first political crisis of the Bocado, a questioning of its existence aiming at its replacement by a massive appeal to much more costly public debt (see Figure 19 above)⁶¹. 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 in 1999.

In 1999, the Asian, Russian and Brazilian financial crises occurred, and a fly to quality affected the international movements of capital, depriving Latin American countries of external financing. Due to the full dependence of its monetary base on foreign entries of capital under the currency board regime, Argentina fell into a deep and four years long recession. Bussi, who had developed indebtedness on the international financial markets, was no more able to find new credit, and had to return to issuances of Bocades : he issued 45 millions of new *bonos* to redeem those whose redemption was falling due, and added a net emission of 10 millions before leaving the power to his successor.

4. 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 Bocado. As recession deepened, provoking the defeat of the Justicialist 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 Bocado on the market was starting to climb above 4% in October, reaching 7% in December (figure 20), 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 -13.5% for Tucuman ; if we take

⁶¹ 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 aumentó el endeudamiento anual (promedio) en 120% y 520% con respecto al gobierno de J.C. Araoz. Si comparamos los dos últimos periodos de gobierno, el endeudamiento anual (promedio) prácticamente se triplicó » (p. 18).

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)⁶².

Here we still have to describe measures taken during the crisis to maintain the convertibility : Plazo fijo y cheques differidos, 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) (under construction)

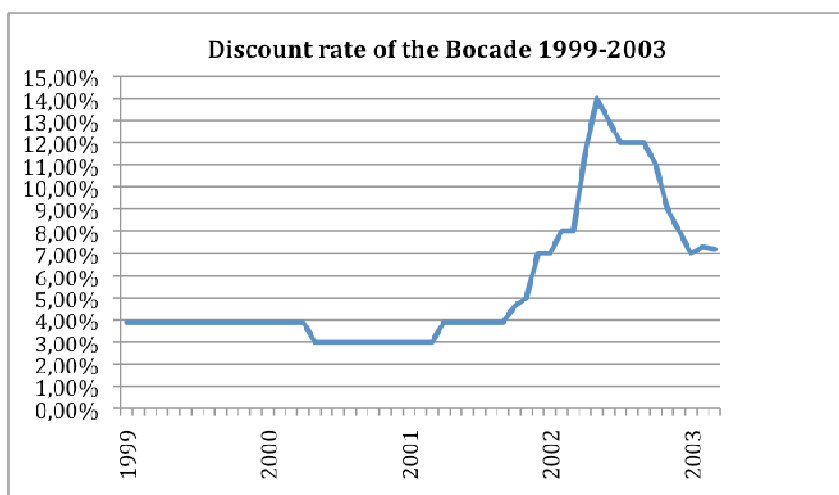
2002 was a year of very deep crisis for Argentina with a fall of the national GNP of about minus 11% and an inflation of the CPI of 41% (dec/dec) (table 3), with large social unrests, political instability, and a great redistribution of wealth due to the monetary crisis and the asymmetric modalities of the « pesification » of debts. In Tucuman, the crisis was also strong and multidimensional (minus 8% for the GGP and 49.4% (dec/dec) for inflation). And, in contrast with the hyperinflation crisis in 1989-1991, it went with 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 20, reached nearly 14%, surely a rate never observed before.

Table 5: Issuances and redemptions of Bocades under the nationalized Peso standard

Year	Month	Issuance	Decree	Amounts issued or redeemed	Nominal stock of bonds
2001	december	Destruction		-11 000 000	98 000 000
2002	january	39 th issuance	10/3	20 000 000	118 000 000
	march	40 th issuance	350/3	55 000 000	173 000 000
	june	Destruction		-4 000 000	169 000 000
2003	june	Final	Rescate federal	-102 000 000	67 000 000
	july	redemption	155 000 000	-53 000 000	14 000 000
	august	destruction		12 000 000	2 000 000

Figure 20: Discount rate of Bocades between 1999 and 2003

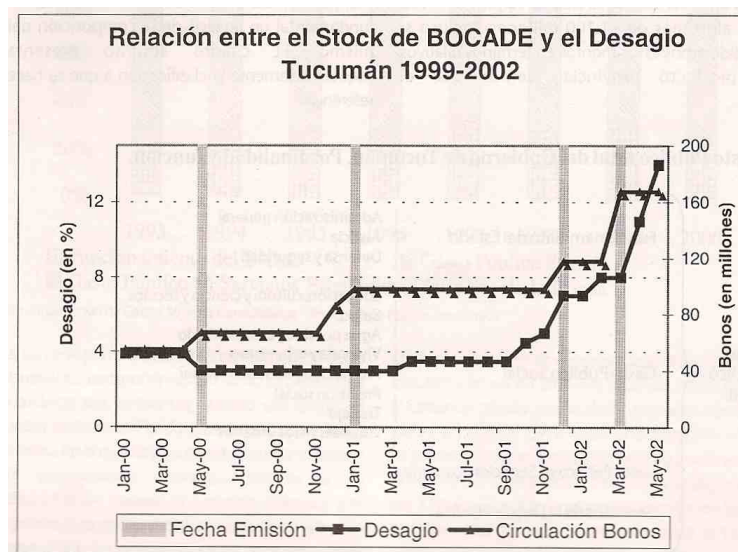
⁶² As shown also in table 3, price deflation was stronger in Tucuman than in the whole Argentina in the years 1999-2001 (-4.1% or -4.3% compared to -4.0% or 2.0%), and in 2002, after the « pesification » (nationalization), inflation was stronger (49.4% versus 41% or 31.4% versus 25.9%). On the four years 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%.



Sources: Cerro (2002), BCRA (2003)

But with recession, monetary uncertainty concerning the federal system and unit of account, and the shortage of national legal tender money becoming deeper, the only way for the Province not to collapse and going into bankruptcy was to issue more *bonos*, while implementing measures to maintain cuasi-convertibility and limit an unavoidable crisis of credibility.

Figure 21: Amount and discount rate of Bocades (January 2000 and May 2003)⁶³



Source : Cerro, 2002, p. 19.

⁶³ 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).

Develop on measures taken to improve the confidence in the Bocado in 2002: After the extension of the waiting time of conversion of Bocades in Peso at Operatoria FET (60 days since 2001, 56 days in January 2002), this delay has been lowered to 35 days in June 2002. (Beckmann, 2002 in Boletín Numismatico de Tucumán n° 3, julio 2002).

Scandal about bills of 20 pesos made by Cicone instead of Casa de la moneda. Double issuing of the same bills.

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%.

4. Was the Bocado successful?

Usually economists use two indicators (both « prices » of money) to evaluate the quality of a monetary policy in developing countries suffering from the original sin of not to be able to have a strong currency. These indicators are: 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. In the case of regional moneys, that is also what has been used for instance by Farley Grubb in his studies of the monetary experiments in currency finance in the British colonies who became the United States of America. But this view is partial as soon as one does not consider that money is neutral, and that different monetary regimes have different impacts on growth regime and indebtedness regime. As we have seen in section 2, complementary local fiscal monies are issued especially with the purpose to stimulate the local economy and to reduce the public debt. Therefore concerning the complementary tucumani money and the evaluation of its viability and efficiency, we must confront four questions. First, was the local monetary regime of convertibility viable in the long run, that is was convertibility at par of the Bocado in Austral and Peso maintained? Second, was the Bocado inflationist, that is had it an impact on the local price level which added a local inflation to the national one? Three, had it a positive impact on the provincial economy, that is do we observe that the growth of the Tucumán GPP (Gross Provincial Product) has been improved during the years of emission of the Bocado? Four, did it reduce the provincial public debt with private banks, financial markets, and the federal government?

Unfortunately it is very difficult, not saying impossible, to answer such questions in a truly scientific way for three principal reasons. Firstly provincial data are scarce, and when disposable most often they are not completely reliable. Secondly it is impossible to use a

counterfactual methodology to evaluate what would be the specific impact of the Bocade either on inflation or growth. Thirdly many variables, exogenous and endogenous, other than the presence or not of a complementary fiscal money, are playing a role in the evolution of the quantitative indicators and indexes that we need in order to answer the four questions above in a reliable and trustworthy way. Thus several other studies on different provincial economies having implemented or not a local fiscal money that would allow to develop a comparative approach should be necessary for this. Historians are well aware of these difficulties.

Therefore the following evaluation must only be seen as a first attempt to muddle through with the existing data by relying also on more qualitative observations and « parameters ».⁶⁴ In the preceeding section of this paper, we have already noted that the Bocade had been a successful device since it had been viable in the long run and had been supported by the provincial market place. We have noticed also that at the time of monetary crises affecting the federal unit of account and legal tender, it had been mobilized efficiently as a shock absorber, allowing the province to grow at a rate higher than the national rate. Also the provincial monetary regime was able to change through institutional innovations maintaining the convertibility of the Bocade and therefore its character of complementary money to the federal legal tender and unit of account. We now try to go a little further in the answers to our four questions above from the disposable macroeconomic data concerning the Province.

⁶⁴ Gatch (2011) in his study of the tax anticipation scrips issued by a significant number of US Cities in the nineteen thirties enlightens qualitative and institutional conditions and parameters of their success as the followings: « 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 indispensable, 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 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).

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

The rate of exchange (or discount) of the Bocade vis-à-vis the legal tender surely is a good indicator of its level of acceptance by the public, and theoretically it is a directly observable variable. But in fact, in the case of complementary provincial fiscal monies, we lack, to date, of systematic data concerning this exchange rate, especially for the Austral Bocade. Nevertheless 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 effectively maintained in the long run, and it is likely what explains its durability.

It is only shortly in 1988 and 2002 at the core of the convertibility crisis, that the discount rate of the Bocade deteriorated and overtook the usual transaction cost, as shown in figures 1, 20 and 21 above. To sum up 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. On the other hand, as we have seen, the Bocade endured the national hyperinflation and was not threatened by the « Tequila Effect » crisis in 1995-1996, despite important issuances in these years, and some practical problems of conversion in time.

Also the Bocade has 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 and 1995⁶⁵, 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, 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 money⁶⁶. 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 than the official regulated rate of rediscount at the Central Bank (figure 22).

Figure 22: Interest rates (1985-1991) : Rediscount at BCRA and Call of official banks

⁶⁵ *La Tarde* 30/10/1987, *La Gaceta* 6/02/1988 and footnote 53 above.

⁶⁶ Present shopkeepers everywhere know also these differences of transaction costs when they receive payments with different credit or payment cards such as Visa or American Express.



Source : Cerro (1988) and BCRA

In fact we have find many quotations confirming that the Bocache was largely accepted and trusted by the public, despite the discount rate it could have to support occasionally to change it immediatly in Austral or Peso. As long as the Bocache was backed by provincial taxes and effective convertibility at par insured without discount and in a reasonable delay by the « Operatoria FET », which has been the case in the long run, Bocache was trusted. Even political opponents of the device recognized this fact:

« De las sensaciones recogidas en la City Tucumana, la lecture es clara : existe confianza en el bono como herramienta financiera, pero tambien preocupacion porque el gobierno no mantega el esquema vigente, que sostiene su circulacion » (Salvador, 1997).

Thus, given the capacity of the Tucuman governments, sustained by the local business community, to restore the bond's credibility by adapting its process of conversion at par, and also to act in order to reduce its rate of discount on the market, it is possible to assume that even the crisis of 2002 was as the crisis of 1988 a small crisis, that is a crisis which was not implying the end of the Bocache. The Bocache has not been the victim of this crisis but of negotiations with the IMF which stressed the necessity to end with provincial monies.⁶⁷

4.2. What about the purchasing power of the Bocache? Did it add a local inflation?

⁶⁷ « El acuerdo que el ex presidente Eduardo Duhalde (in 2002) firmo con el FMI establecio la obligacion de que la Argentina vuelva a tener una sola moneda », *Una Historia de Descontroles, Rechazos y Esperanzas*, anonymous *Note of information* received during an interview in September 2009 in San Miguel de Tucuman with José Alberto Cuneo Vergès, ex minister of Economy of the governor Miranda in 2002, and three of his collaborators.

An exchange rate index is certainly not totally discriminant for judging the internal viability and quality of a money, for 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 thus it is difficult to isolate imported change in the price level from change possibly linked to local emissions.

For Tucuman, we have long range historical monthly series for the local CPI concerning the *Gran Tucuman* (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. Therefore, assuming that both indexes are build on the same methodological bases, we can observe differences between the two indexes that would eventually display that the Bocade added systematically local over-inflation to the national level of prices, as assumed by some 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)⁶⁸.

In order to look at the empirical evidence we display in Figure 23 the ratio of the two consumer price indexes (CPI), base 100 fixed in 1985, the first year of existence of the Bocade. And in Figure 24 we show the difference between these two annual growth rates (computed in two ways from monthly data). In Figure 23 we observe that inflation rates in Tucuman and Buenos Aires are related but differ permanently with long term variations of about 15-20% around the 1985 point of reference, and medium range fluctuations of about 5%. We can also observe that the convertibility Plan had a huge impact on the relative value of the two indexes (minus 20%), but it is not possible to consider that the introduction of Bocade impacted the local dynamic of the price level either in the long or medium run. During the period of existence of the Bocade, we had years when prices in Tucuman were climbing faster than prices in BA, but also years when it was the opposite. And we observe the same type of fluctuations in periods where there is no complementary provincial money. In fact on Figure 24 we can see that the number of years in which the growth rate of prices is higher in Tucuman is very similar to the number of years where the opposite is true.

Therefore, it is not possible to conclude to a specific inflationist effect of the bocade and it seems reasonable to assume that imported inflation (or deflation) has been overwhelming during Bocade's life as well as in other periods, thanks to the violence of the national

⁶⁸ See for instance *La Gaceta*, october 13th, 2001, « Advierten que Tucuman podria afrontar una hiperinflacion en bonos ».

monetary regimes of either high inflation, or deflation through quasi-dollarization. Adaptation to local situations of the national monetary policy has been probably the essential task of the provincial monetary policy when aiming at the resilience of the local monetary regime. But it is necessary to consider short term factors as well in Buenos Aires as in Tucuman that could explain the fluctuations that are different here and there, considering the Bocade as such a factor. But a possible short term impact on inflation should not be considered alone but in relation to another possible impact on production growth.

**Figure 23: Relative level of Tucuman CPI compared to Buenos Aires CPI
(both indexes = 100 in 1985) (1968-2008)**

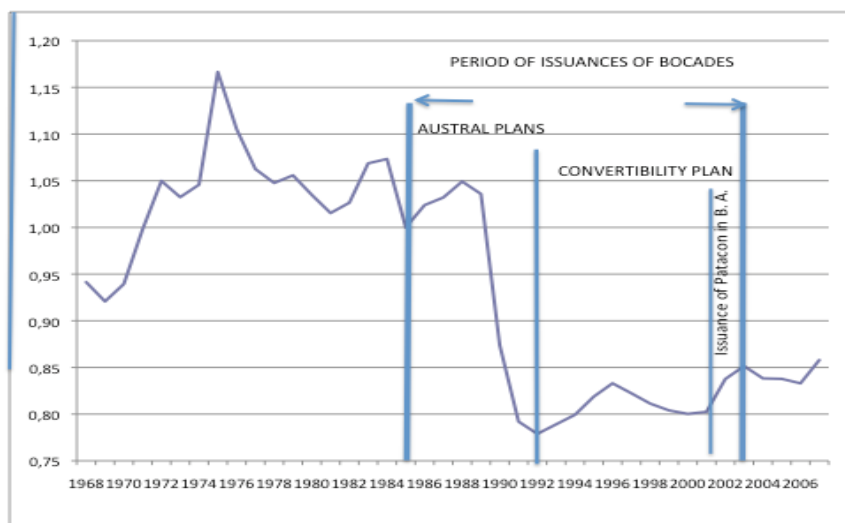
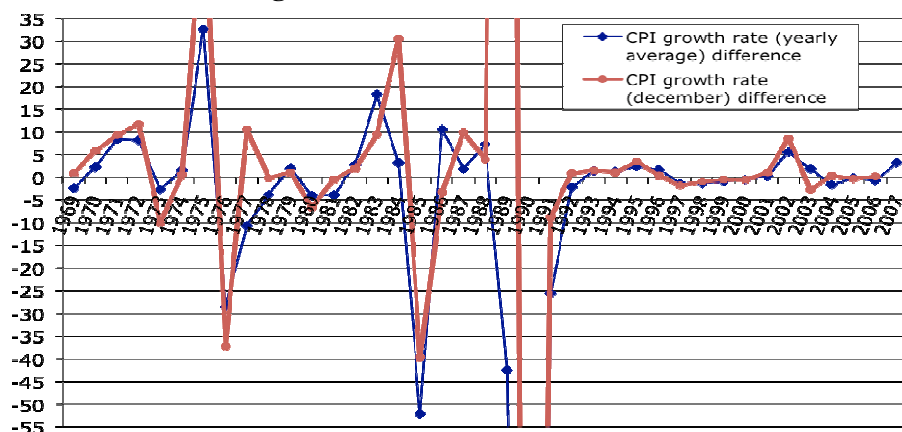


Figure 24: Differences between the annual rates of variation of Consumer Price Indexes in Gran San Miguel de Tucuman and in Gran Buenos Aires (INDEC)



Sources : same as figure 12

In Figure 23 the evidence is not only that deflation introduced by the national convertibility Plan has been stronger in Tucuman than in Buenos Aires, but also that the relative price level in Tucuman has increased in the three periods of national crisis -1987-88,

1995-96, and 2002-03 – periods in which the stock of Bocades has much increased, too much likely for the first and last of them where, as seen above, this increase has gone with a crisis of their convertibility. Figure 25 shows that in these three crises, the stock of Bocades reached around half the value of the own resources of the provincial State, and about 10% of its total spendings.

Figure 25: Stock of Bocades related to provincial own resources and total expenses

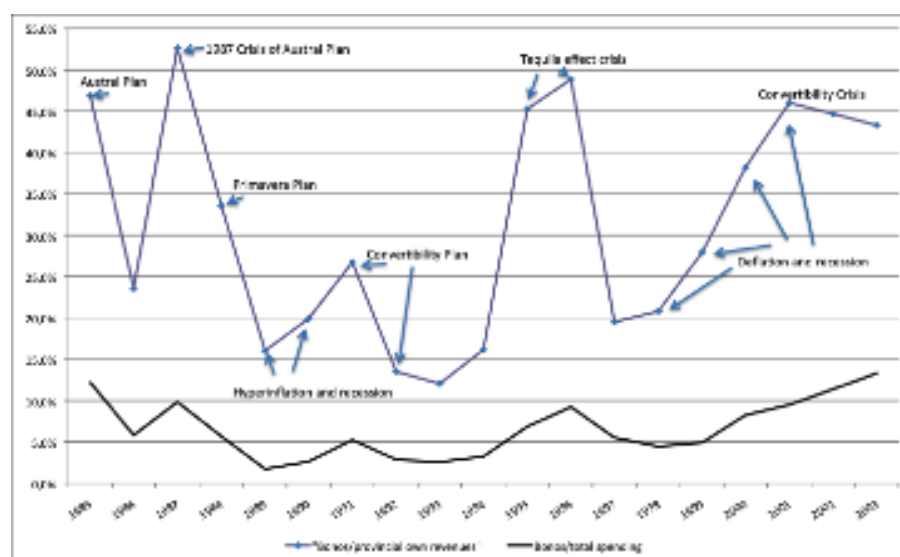


Table 6: Average Yearly growth rates of GNP and CPI by periods: Argentina and Tucuman compared (means of yearly growth rates)

	GNP growth rate	GPP growth rate	CPI	Dec(T)/Dec(t-1)	CPI	Year. M.(t)/Year. M.(t-1)
	Argentina	Tucuman	Buenos Aires	Tucuman	Buenos Aires	Tucuman
Peso moneda nacional						
1981-1984	-2,00%	0,62%	365,7	376,0	310,0	315,1
Austral						
1985-1991	-0,09%	-0,71%	1054,4	1051,6	971,7	903,8
1985-1987	1,00%	-0,53%	213,9	203,0	297,9	284,6
1988	-3,0%	0,9%	387,7	391,6	343,0	350,3
1988-1990	-4,85%	-7,42%	3133,8	3142,6	2696,8	2488,1
1991	9,1%	10,5%	84,0	75,2	171,7	146,2
Dollarized Peso						
1992-2001	2,80%	2,72%	2,8	3,2	4,2	1,0
1992-2003	2,16%	2,11%	6,0	6,9	6,7	4,3
1992-1994	7,30%	4,33%	9,6	10,8	13,2	7,5
1995-1996	1,35%	1,75%	0,9	2,8	1,8	13,5
1997-1998	6,00%	6,60%	0,5	-0,9	0,7	3,9
1999-2001	-2,87%	-0,83%	-1,3	-1,4	-1,1	-0,6
1995-2001	0,9%	2,0%	-0,2	0,0	0,3	-1,4
Dedollarized Peso						
2002-2006	4,96%	5,64%	12,6	16,0	12,4	0,3
2002-2003	-1,05%	-0,95%	22,4	25,2	19,7	4,3
2004-2006	8,97%	10,03%	6,1	9,9	7,6	7,5
More inflation and more growth			Less inflation and less growth			
Less inflation and more growth			More inflation and less growth			

Source : Table 3

But the evidence is also that these short term periods of local overinflation are followed by periods of decrease of the relative price index, which means that the existence of Bocades was not by nature and structurally inflationist. Moreover the fact that the local answer to the Tequila effect crisis was more inflationist than the Buenos Aires reaction to this crisis, but did

not threatened the confidence, credibility and trust in the local money, points out that inflation per se, all the more in periods of deep crisis, is not necessarily a criteria of inefficiency of a monetary policy. As Table 6 shows, either with a complementary provincial money (1985-2003) or not (1980-1984 and 2004-2006), under a threshold, more inflation is also more growth not only through time, but also through space.

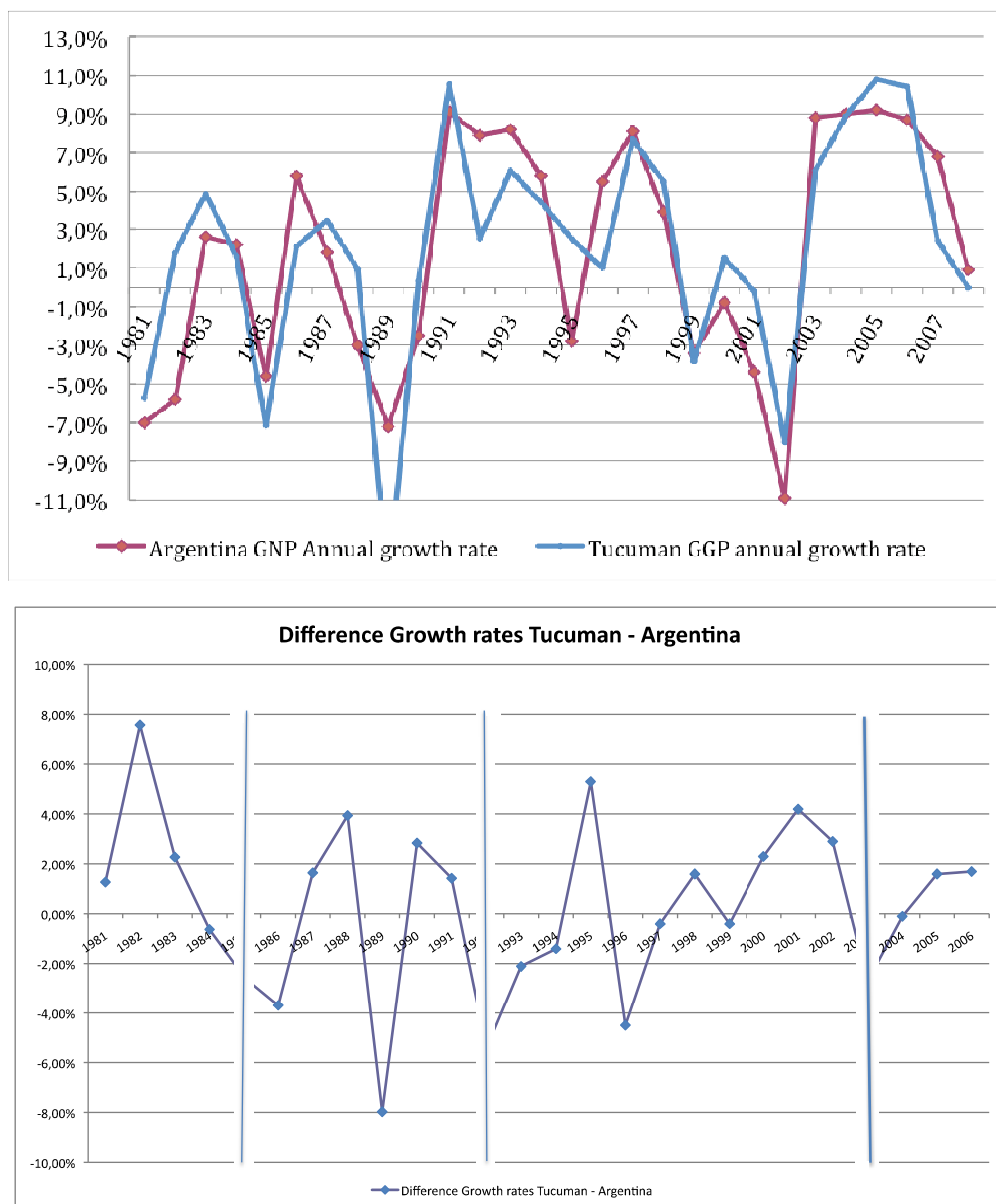
4.3. Did it improve the provincial economic growth?

Let's come then to our third question about the productive efficiency of the institution of the Bocade. Did it make a difference on GPP? It is in fact quasi impossible to answer this question in a scientific way since on one hand, data relative to Tucuman GPP are very questionable, and on the other hand, even if they were reliable, it would be difficult to prove, other things being equal, that the level of production in Tucuman during the Bocade period was higher than it would have been without Bocade. Here a counterfactual or comparative method would be required but is out of reach. It supposes that we can have reliable data for the whole Bocade period and beyond, which is not the case. Homogenous data relative to the GPP simply do not exist because of the lack of provincial statistical institutions in the eighties. There are some academic statistical studies displaying data on periods not covered by the more recent official statistics provided by the statistical Department of the Provincial Government, but they do not necessarily adopt the same definition of GPP ; for some of them, an evaluation of the informal economy of the province is included. Thus, in the nonetheless proposed figures below and in table 3 above, there is a dissimulated break in the series around 1993 ; that is why we choose to work exclusively with growth rates.

In spite of all these limitations, it seems possible to say a few things in relation with what we have said about inflation. Figures 26 exhibit not only the volatility of the argentinian macroeconomy, but also important annual differences between the GPP growth rate of Tucuman and the national GNP. As these differences are either positive or negative, differences of growth rates in the medium and the long run are smaller, as shown in Table 6. Moreover, between 1981 and 2006 we count 14 positive differences (Tucuman growing faster than the national average), 8 negative differences and 4 insignificant. Now during periods with Bocade we count 9 positive, 8 negative and 2 insignificant, that is more equilibrated oscillations (Table 7). This could mean that Bocade was a factor of a stronger integration of the economy of Tucuman into the national economy, something that Table 6 suggests also since it shows that average growth rates in Tucuman and the whole Argentina are very close during the Bocade period (all the more in the dollarized peso period) than in other periods

where, on average, Tucuman grows faster. Obviously it can be a result not of the presence of the Bocade but of differences of economic and political national environment between these periods. This observation suggests also that, on average, Bocades were not an incentive to growth.

Figures 26: A comparison between Argentinian and Tucumani real growth rates



Source : Direccion de estadistica de Tucuman (2006, 2007, 2008, 2009) ; CFI.

Table 7 : Number of years Tucuman grows faster or less than Argentina as a whole

Periods	Positive difference	No difference	Negative difference
1981-2006	14	4	8
Periods without Bocade :	5	2	0
1981-1984	3	1	0
2004-2006	2	1	0

Period with Bocades : 1985-2003	9	2	8
Austral Bocade 1985-1991	4	0	3
Peso Bocade 1992-2003	5	2	5

But qualitative data related in section 2 and the strong support that the tucumani business class gave to the Bocade imply to push further the reasoning. A new look to Figure 26 suggests that growth rates in Tucuman were higher when the issuance of Bocades was also higher, because stimulated by a context of deep crisis at the national level, and reached significant levels as a fraction of public spending and fiscal resources (as shows in Figure 25). In these periods the provincial Government was maximizing its capacity to issue a complementary money in saturating its constraint of convertibility at par. To the contrary in more « normal » years, the constraint of convertibility was working as a straightjacket tight all the more so since anticipations of provincial resources backing the money were structurally very limited.

All that suggests that besides the maximum threshold for the volume of *bonos* in circulation beyond which convertibility and trust are threatened, there is also a minimum threshold of issuance under which a positive impact of *bonos* on growth cannot be obtained. In the general context of extreme volatility which was characteristic of Argentine macroeconomy in all these years, we can thus assume that the Bocade could be sometimes an incentive to growth, sometimes the reverse or neutral. This oscillation was the outcome of the weak fiscal autonomy of the Province that gave a disproportionate weight to the constraint of convertibility at par of the Bocade in the backing of its credibility. The tucumani treasury circuit was too small to allow a permanent impact of the *bono* on growth.

4.4. Did it reduce the provincial debt? (to follow, under construction)

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