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FINANCIAL INTEGRATION AND PUBLIC FINANCIAL INSTITUTIONS

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ABSTRACT: This article highlights the problems associated with the existence of financial institutions owned by a State which is a member of a federation. We show that these financial institutions allow the States to transfer deficits to the federal government. This possibility creates incentives to higher deficits at State and federal levels, implying an inefficiently high inflation rate. The main policy implication is that stabilization policies are more difficult to be implemented in countries such as Brazil, and Argentina which allow the members of the federation to own financial institutions. A second policy implication is that Economic Blocks such as the European Community or Mercosur should not allow regional central banks if they create a monetary authority to help the members in financial difficulty.

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Financial Integration and Public Financial Institutions

1 - Introduction

In a politically decentralized country, the political units (from now on called "States", with capital s, as opposed to "state", also used in this paper with the meaning of "public sector") must enter on an agreement on the choice and financing of public goods. One of the reasons for the existence of a Congress is to assure efficiency on such decisions. Without some coordination, the federation might be trapped on an inefficient bargain leading to under investment or misallocation of the public good. This is the well known free rider problem.

Inflation and budget decisions are also public goods. To obtain an overall balanced budget, each State must contribute with taxes, and it must restrain its demand on public goods. Once more, a congress acts as a coordinator that assures that the demands and tax efforts are consistent with a balanced budget.

The main insight of this paper is that the coordination role of a Congress is weakened if the States are allowed to own financial institutions. We shall show that the outcome is a bias to higher deficits and a higher inflation rate.

Indeed, these official financial institutions have been subject to various criticisms on at least two countries with a record of high inflation rates: Brazil and Argentina. A recent World Bank Report (World Bank, 1990) recommends the privatization of these banks in Brazil, so as to make their administration independent from political interference. However, from their report it is not clear why such pressures are particularly important in the case of financial institutions as opposed to any other state owned enterprise, or even any private enterprise of relevant importance to the economy of the state.

Official banks do not have problems of the same category of other state enterprises, as Werlang and Fraga(1992) pointed out. A state enterprise causes limited efficiency loss: at worst the wage bill plus the real interest over its net debt. It turns out that an official bank is potentialy much more damaging. In fact, they may issue CD's and make use of the rediscount window (directly or indirectly), so that they are capable of generating unlimited liabilities.

The operation is simple. An official bank gives a bad credit, or, in

particularly important. In short, we have to argue why credit to an official financial institution is different from credit to any other government agency. The explanation lies on the way that a monetary authority acts. More specifically, the main point is that the depositors are bailed out, not the shareholders. It follows that a private financial institution does not have the incentives to pursue the bankruptcy strategy that transfers deficit to the central government. In the same way, supply credits to government agency are not as insured against bankruptcy as depositors. Therefore a bail out would very likely impose losses on the suppliers. In summary, an official financial institution is unique in the sense that the depositors are fully protected in a bail out, and the main shareholder does not fear bankruptcy.

Our paper is related to the literature on inefficiency due to fiscal federalism. See for example Buchanan(1950), Musgrave(1969), Oates(1972) and Gordon(1983). However, instead of focusing on the conflicting policies at federal and State levels, we provide insights on the mechanisms used by States to force federal deficits.

On the other hand, our paper is also related to the recent political economy literature that views government as formed by self interested agents, instead of a welfare maximizing institution. We follow Alesina(1987) in the view that the federal government may fail to pursue welfare maximizing strategies because of the chance of not being re-elected. However, contrary to most of the literature, we focus on the inefficient incentives at State levels as opposed to the mechanisms that lead federal governments to act inefficiently.

The paper proceeds as follows. In section 2 we describe the model. Section 3 shows the bias towards higher inflation under the presence of official financial institutions. In section 4 we discuss some evidence through the cases of Brazil, and Argentina, and we make use of the framework to discuss financial integration and the creation of economic blocks. Finally, in the last section we conclude and summarize our results.

2 - The Model

We consider a country politically organized under a federative principle. We call a political unit a State, and the central authority the federal government. The Central Government is responsible for the decision on the amount of public expenditures, while the States jointly decide the allocation of such expenditures among themselves. It should be clear that all arguments also follow for an economic block of countries such as the future european community.

We assume that there are *n* States, each one with a common utility function that depends on the inflation rate of the country at *t*, π_t, and the level of consumption in the State *i* at *t*, G_{it} (where *i* indexes the State). For simplicity, we assume that the utility function is of a separable form in time, consumption and inflation. The representative agent of each State likes consumption and dislikes inflation. The utility function in a two period horizon is given by:

$$U(G;\pi) = \sum_{t=0}^{1} (V(G_{i_t}) - T(\pi_t)) \quad (1)$$

being $G = (G_{i0}, G_{it})$, and where the following technical assumptions hold:

$$V' > 0, \quad T' > 0, \quad V'' < 0, \quad T'' > 0,$$

$$\lim_{G_i \to 0} V'(G_{i_t}) = +\infty, \quad \lim_{G_i \to \infty} V'(G_{i_t}) = 0, \quad \lim_{\pi_t \to \infty} T'(\pi_t) = \infty \quad \lim_{\pi_t \to 0} T'(\pi_t) = 0$$

The concavity assumptions are standard. The marginal utility of consumption is decreasing, achieving zero asymptotically. On the other hand, the marginal utilities at zero assure an interior solution.

We consider a two period economy, where two political parties maximize an average of the utilities of the States. As in Persson and Svensson(1989) we assume that the incumbent political party at time *0* knows that it will not be reelected with probability 1. This assumption is not so restrictive. As Alesina and Tabelini(1990) showed, we can generalize the model to a situation where the incumbent political party may stay in power with some probability[1]. A more restrictive assumption is that the incumbent political party at time *0* does not care to the utility of the States when it is out of power.

[1]We keep the simpler framework because we want to focus on the incentives for the states to transfer deficits, and not on the incentives of the central government to avoid the transfer.

This allows us to focus on the strategic behavior of the States with respect to the future government action, disconsidering any strategic behavior of the incumbent political party at time *0*[1]. Therefore the utility function of the federal government at time *t* is given by:

$$U(G_{1_t},....,G_{n_t},\pi_t) = \sum_{i=1}^{n} \lambda_i (V(G_{i_t}) - T(\pi_t)) \quad (2)$$

where $\lambda_i \geq 0$ for any i, with $\sum_{i=1}^{n} \lambda_i = 1$.

We assume that the central government in charge at time *t* can choose the bundle (π_t, G_t), being $G_t = \sum_{i=1}^{n} G_{i_t}$, subject to the following constraint:

$$\pi_t = G_t - W_t \quad (3)$$

Where W_t is the endowment of the central government at *t*.

Equation (3) says that federal deficit must be financed by inflationary tax. The linear specification is not important. Al results survive if we assume that inflation is a monotonically increasing function of the fiscal deficit.

The government decides only the amount of expenses. We assume that the allocation of *G* is jointly decided by the States through a cooperative game that determines the share of each State. Through this cooperative game, the States also decide on the total amount of taxes collected to the federal government, which we assumed to be *W* at any *t*.

We also preclude any government to issue debt, *D*, to increase current consumption. Otherwise, it would choose debt *D=W* to be paid in the next period, which he does not care about[2]. Nevertheless, we allow the initial

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[1]By allowing the government at time zero to choose (π,G) taking into account the second period utility would not change our main results: the states have incentives to transfer deficit to the central government, and the current government does not have the correct incentives to undo it. Therefore we keep the "myopic" assumption for simplicity.

[2]This is a restriction imposed for not considering consumption in the next period in the government's utility function. In a more realistic model, the first government would partially internalize the second period utility. Hence, under some conditions the government would choose a positive debt level below *W*. This insight is already known, therefore, we opted to simplify the model by imposing a restriction on federal debt.

government to save if it wants. Therefore, at time *0*, $W_0 = W$, and at time *1* W_1 is equal to *W* plus any superavit left by the political party in charge at time *0*.

The problem of each central government is to choose the pair (G,π) knowing that *G* will be allocated to the States according to $\{a_i\} \in (0, 1)$, i.e.,

$$G_j = a_j G \quad (4)$$

We assume that the shares $\{a_i\}$ have been already previously chosen by some cooperative arrangement. In summary, the federal government chooses the level of expenses *G* but not its allocation. By choosing the expenditure level, the central government is also making a choice of the inflationary level. As we shall show in the next section, this choice will be Pareto efficient in a world where the States cannot unilaterally transfer deficits to the federal government. This captures the cooperative role of a Congress that sets the allocation $\{a_i\}$ and leaves to the government the task of choosing the level of expenditures.

Now we consider the effects of state owned financial institutions. So far we assumed that the central government is not allowed to issue debt to be paid in the next period. However, suppose that each State is allowed to issue debt through its official financial institution. Assume also that the federal government rescues the depositors of a failed financial institution. In this case, a State can increase his current consumption by issuing local debt to be paid by the federal government in the future. One could argue that the State internalizes the reduction in utility at time *1* through higher inflation. However, a major insight of this paper is that the transfer of the debt allows the dilution of the cost among all States. As we shall show, this dilution leads to an inefficient increase of consumption at time *0* at the cost of more deficit and inflation at time *1* [1].

In summary, the utility of State *i* at time *0* will be given by:

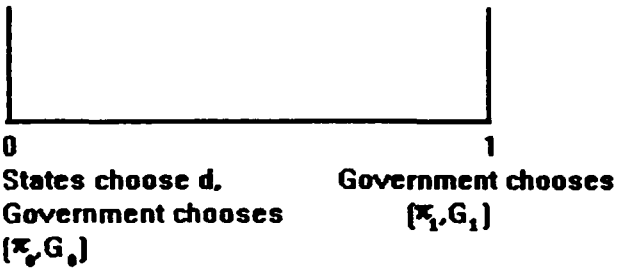
$$U(G, \pi, d_i, d_{-i}) = V(G_{i0} + d_i) - T(\pi_0) + V(G_{i1}) - T(\pi_1)$$

Where d_i is the amount of debt issued at time *0*, which is used to finance

[1]To the knowledge of the authors this insight appeared for the first time in the report of the Brazilian Fiscal Reform Comission of 1992 (CERF(1993)), and in Werlang and Fraga(1992). Werlang was a member of the Fiscal Reform Comission.

consumption in the same period, and d_{-i} is the amount of debt issued by the other States.

We summarize the timing and the action space of the model in the figure below:



In the next section we solve for the equilibrium in the cases that the States can issue debt and when they cannot. We show that the former case has an inefficiently high inflation level.

3 - Equilibrium

An equilibrium is a tuple $\{(\pi_0^*, G_0^*), (\pi_1^*, G_1^*), d_i^*\}$ such that:

(i) (π_0^*, G_0^*) maximizes the utility of the political party in charge at time *0*, given $\{(\pi_1^*, G_1^*), d_i^*\}$:

$$Max \sum_{i=1}^{n} \lambda_i [V(a_i G_0 + d_i^*) - T(\pi_o)]$$
$$\text{s.t } \pi_0 = G_0 - W.$$

(ii) (π_1^*, G_1^*) maximizes the utility of the political party in charge at time *1*, given $\{(\pi_0^*, G_0^*), d_i^*\}$:

$$Max \sum_{i=1}^{n} \lambda_i [V(a_i G_i) - T(\pi_1)]$$
$$\text{s.t } \pi_1 = G_1 - W_1.$$

Where $W_1 = W - \sum_{i=1}^{n} d_i^* + Max\{G_0^* - W_0^*, 0\}$.

(iii) d_i^* maximizes the utility of State *i* at time *0* given $\{(\pi_0^*, G_0^*), (\pi_1^*, G_1^*)\}$:

$$Max\ [V(a_i G_0^* + d_i) - T(\pi_0^*)] + [V(a_i G_1^*) - T(\pi_1^*)]$$

We will solve this problem backwards. First we determine (G_1^*, π_1^*) as a function of *W* and $\sum d_i$. Then we optimize the choice of d_i at time *0* given that the States anticipate the optimal governmental policies at times *1* and *0*. In other words we look for a subgame perfect equilibrium. But first we solve for a Pareto Efficient Allocation.

3.1 - Pareto Efficient Allocation

We start looking at the case where $d_i=0$, i.e., the States are not allowed to issue debt, and $W_t = W$ for any *t*. In this case (π_t^e, G_t^e) solves:

$$Max \sum_{i=1}^{n} \lambda_i [V(a_i G_t) - T(\pi_t)]$$
$$\text{s.t } \pi_t = G_t - W$$

This is clearly a Pareto efficient allocation, since it maximizes an average of utilities at each period, and there is no inter temporal preference.

The first order condition of the above program, which is also sufficient due to the assumptions on V and T are

$$\sum_{i=1}^{n} \lambda_i \{V'(a_i G_i) a_i - T'(G_i - W)\} = 0.$$

This equation determines implicitly the inflation and the government expenditure as a function of wealth W. Proposition (1) below proves that, as expected, G_i^e and welfare are increasing on the governmental endowment, and inflation is decreasing.

Proposition 1: In equilibrium, $\frac{d}{dW} G_i^e(W) > 0$, $\frac{d}{dW} \pi_i^e(W) < 0$. Let us define $U_i(W) = Max \sum \lambda_i (U(a_i G_i) - T(\pi_i))$. Then $\frac{dU_i(W)}{dW} > 0$.

Proof: By the implicit function theorem applied to the first order condition:

$$\frac{dG^e}{dW} = -\frac{\sum \lambda_i (V''(a_i G) a_i^2 - T''(G - W))}{\sum_i \lambda_i T''(G - W)}$$

Since $V''<0$ and $T''>0$ the numerator is negative, and the denominator is positive. Therefore, $\frac{dG^e}{dW} > 0$.

Now $\frac{d\pi^e}{dW} = \frac{dG^e}{dW} - 1 < 0$ if $\frac{dG^e}{dW} < 1 \Leftrightarrow -[\sum_i \lambda_i \{(V''(a_i G) a_i^2 - T''(G - W')\}]$

$< \sum_i \lambda_i T''(G - W') \Leftrightarrow \sum_i \lambda_i V''(a_i G) a_i^2 > 0$. But this is satisfied since $V''>0$.

Finally, by the envelope theorem: $\frac{dU}{dW} = \sum_{i=1}^{n} \lambda_i T''(G - W) > 0$.

QED.

This allocation captures the idea that the Congress has a coordination value in a federation. The political units bargain on the allocation of the government expenditure, leaving a Central authority to set the total

amount. In this way, the States avoid inefficient non-cooperative equilibria.

In the next subsection we show that the cooperative equilibrium breaks down once we allow for the States to issue debt.

3.2 - Non-Cooperative Equilibrium

In this subsection we allow the States to issue debt at time *0* to finance consumption in the same period. The debt will be due at time *1*, when the federal government (though the monetary authority) will honor it. This is known ex-ante by the debt holders. However, since they do not care about the source of payment, they are willing to pay the face value of the debt to the State.

We solve the game backwards. First we assume that the federal government does not save at time *0*. In proposition 3 we show that this is an equilibrium.

At time *1*, the government in charge solves

$$Max \ \sum \lambda_i [V(a_i G) - T(\pi)]$$
$$s.t. \ \ \pi = G + \sum d_i - W.$$

Note the difference from the previous program. Now the budget constraint takes into account that the government will have to pay the debt issued by each State. Therefore everything happens as if the government endowment were reduced by $\sum_{i=1}^{n} d_i$.

The F.O.C. which are also sufficient are

$$\sum \lambda_i \{V'(a_i G)a_i - T'(G + \sum d_i - W)\} = 0 \qquad (5)$$

The only difference with respect to the Pareto efficient allocation is the addition $\sum d_i$ in the second term.

The F.O.C. implies

$$G^* = G(W - \sum d_i)$$
$$\pi^* = G(W - \sum d_i) - [W - \sum d_i]$$

Proposition 2: Let $W' = W - \sum d_i$. Then $\frac{dG^*}{dW'} > 0$, $\frac{d\pi^*}{dW'} < 0$ and $U(W') = Max \sum \lambda_i (V(a_i G) - T(\pi))$ with $\frac{dU(W')}{dW'} > 0$.

Proof: Same proof as in Proposition (1) with W replaced by $W' = W - \sum d_i$.

QED.

Proposition (2) delievers our main intuition. Suppose that d_i is positive for some i. Then $W - \sum d_i > W$. The proposition says that inflation will be higher than the Pareto Efficient Allocation and the government expenditure will be lower. Welfare at time *1* decreases. However to prove that this change is inefficient we must look at what happens at time *0*.

To do this we move to the first stage. A time *0*, the central government and the States jointly determine $\{G_0^*, \pi_0^*, \{d_i^*\}\}$ taking into account the optimal strategies in the second period.

We will look for a symmetric subgame perfect Nash equilibrium, in pure strategies, i.e., when all states are identical ($a_i = 1/n$) and:

(i) $\{G_0^*, \pi_0^*\}$ maximizes $\sum \lambda_i \{V(\frac{1}{n} G_0 + d_i^*) - T(\pi_0)\}$,

(ii) For any i, d_i^* maximizes

$$[V(\frac{1}{n} G_0^* + d_i) - T_0(\pi_0^*)] + [V(\frac{1}{n} G_1(W - d_i - \sum_{j \neq i} d_j^*) - T(G_1(W - d_i - \sum_{j \neq i} d_j^*) - (W - d_i - \sum_{j \neq i} d_j^*))]$$

In a symmetric equilibrium $d_i^* = d^*$, and subgame perfection implies $G_0^*(W) = G_1^*(W)$ for any W.

Since we are taking into account optimal strategies in the continuation game, $\{(G_0^*, \pi_0^*), (G_1^*, \pi_1^*), d_i^*\}$ form a symmetric subgame perfect equilibrium in pure strategies. First we prove that $W_1 = W$ is indeed an equilibrium.

Proposition 3: The Central Government does not save at time *0*, i.e. $G_0^* \geq W$. Moreover, $\frac{dG_0^*(W)}{dW} \geq 0$ in any equilibrium in pure strategies.

Proof: Consider the optimization problem of the central government at time 0.

$$\underset{G_0}{Max} \sum_i \lambda_i [V(a_i G_0 + d_i^*) - T(G_0 - W)]$$

the F.O.C., which is also sufficient for this program, is:

$$\sum \lambda_i \{V'(a_i G_0 + d_i^*) a_i - T'(G_0 - W)\} = 0.$$

By the assumptions $T'(0) = 0$, and $V'(G_i) \geq 0$, if we evaluate the FOC at $G_0 = W$ we have

$$\sum \lambda_i \{V'(a_i W + d_i^*) a_i - T'(0)\} = \sum \lambda_i V'(a_i W + d_i^*) a_i > 0.$$

By concavity of V and convexity of T, we have that the FOC is also positive for any $G_0 < W$. Therefore, $G_0^* > W$. To prove that $\frac{dG_0^*(W)}{dW} > 0$, use the implicit function theorem on the FOC as in Proposition 1.

QED.

Proposition 3 establishes that the government does not have the incentives to undo any over consumption of the States at time zero though a fiscal superavit. The point is that savings would decrease his utility at time zero without any increase at time *1*. This is the insight of the recent political economy literature. The risk of being replaced in the next election leads to inefficient acts.

In the next proposition we show that each State will issue a positive amount of debt in a symmetric equilibrium. This establishes the incentives for transferring deficits to the federal government.

Proposition 4: In a symmetric equilibrium in pure strategies $d_i^* = d^* > 0, \forall i$.

Proof: We can write a State *i* problem at time *0* as:

$$\underset{d_i}{Max} [V(a_i G_0^* + d_i) - T(G_0^* - W)] + [V(a_i G_I^*(W - d_i - \sum_{j \neq i} d_j^*) -$$

$$-T(G_I^*(W - d_i - \sum_{j \neq i} d_j^*) - (W - d_i - \sum_{j \neq i} d_j^*))]$$

The FOC which is also sufficient is:

$$V'(a_i G_0^* + d_i^*) - a_i V'(a_i G_I^*(W - \sum_i d_i^*)) G_I^{*'}(W - \sum_i d_i^*) +$$

$$+T'(G_I^*(W - \sum_j d_j^*) - (W - \sum d_j^*))(G_I^{*'} - 1) = 0$$

In a symmetric Nash equilibrium $d_i^* = d$, and $a_i = \frac{1}{n}$ for any i. Therefore:

$$V'(\frac{1}{n}G_0^* + d) - \frac{1}{n}V'(\frac{1}{n}G_1^*(W - nd))G_1^{*'}(W - nd) + T'(G_1^*(W - nd) - W + nd)(G_1^{*'}(W - nd) - 1) = 0$$

To show that $d>0$ in any symmetric equilibrium, we show that the FOC is strictly positive for $d=0$, i.e.,

$$V'(\frac{1}{n}G_0^*) - \frac{1}{n}V'(\frac{1}{n}G_1(W))G_1^{*'}(W) +$$
$$+T'(G_1^*(W) - W)(G_1^{*'}(W) - 1) > 0 \Rightarrow$$

$$\Rightarrow V'(\frac{1}{n}G_0^*(W)) - G_1^{*'}(W)[\frac{1}{n}V'(\frac{1}{n}G_1^*(W)) -$$
$$-T'(G_1^*(W) - W)] - T'(G_1^*(W) - W) > 0 \quad (6)$$

To see this recall that the FOC for G_1^* (equation (5)) when $\sum d_i = 0$ and $a_i = \frac{1}{n}$ yields

$$\sum \lambda_i \{V'(\frac{1}{n}G_1)\frac{1}{n} - T'(G_1 - W)\} = 0 \Rightarrow$$
$$\{V'(\frac{1}{n}G)\frac{1}{n} - T'(G - W)\}(\sum \lambda_i) = 0 \Rightarrow$$
$$V'(\frac{1}{n}G)\frac{1}{n} - T'(G - W) = 0 \quad (7)$$

Thus equation (6) reduces to $V'(\frac{1}{n}G_0^*(W)) - T'(G_1^*(W) - W)$. (8)

Since $G_0^*(W) = G_1^*(W)$ by the symmetry of the equilibrium, and using equation (7) once more, equation (8) reduces to

$$(\frac{n-1}{n})V'(\frac{1}{n}G_0^*) > 0. \quad (9)$$

QED.

Proposition 4 says that in a symmetric equilibrium each State will have incentives to issue debt at time 0. The intuition is straightforward. By issuing debt, a State transfers its deficit to the central government. In turn, the latter transfer the deficit to the other States by reducing government spending and increasing inflation. Nevertheless, each State does not issue an infinitely large debt because it partially internalizes the inflationary cost. In the end, each State is trapped in an equilibrium with a positive debt level at time *0*, and higher deficit and inflation at time *1*. This is summarized in Proposition 5 below.

Proposition 5: If the States are allowed to issue debt at time *0*, then in a symmetric subgame perfect Nash equilibrium each State will issue debt at time *0*, and the economy will be trapped in an inefficient equilibrium.

Proof: Proposition 4 proved that $d^*>0$. Hence at time *1* the federal government will have an endowment $W-nd$ to allocate between consumption and inflation. Since $U'(W)<0$, this decreases welfare at time 1. To prove that the decrease is inefficient, recall that, by proposition 1, any increase in wealth should be split between a decrease in inflation and an increase in consumption, in particular $\frac{d\Pi_0^*}{dW}(W) < 0$, and $\frac{dG_0}{dW}(W) > 0$. But in the subgame perfect equilibrium, d^* was fully used to increase consumption. Finally the optimal d is bounded by the concavity assumptions. The marginal utility of consumption is decreasing (being equal to zero asymptotically), and the marginal disutility of inflation is increasing (asymptotically to infinity).

QED.

4 - Evidence and Implications to Financial Integration

The driving force of our model is that the States can transfer deficits to the federal level through their financial institutions. There is an implicit assumption that the monetary authorities cannot impose discipline on the official banks. In this section we argue that recent record of Brazil and Argentina give support to our implicit assumption, and to our predictions.

4.1 - Brazil

Brazil is a federation formed by 27 political units called States. As of February 1993, 25 out of 27 States owned at least one financial institution. Moreover, the only two States that do not owe one have been recently granted the status of an independent State (Tocantins and Mato Grosso do Sul).

Our model predicts that these official financial institutions should run large deficits, which would be eventually transferred to the federal government through the central Bank.

Indeed, the revival of democratic elections at State level in 1982 was followed by a steady deterioration of the official financial institutions owned by the States. Since then, the Brazilian Central Bank supplied U$ 2.3 billion to the State banks in financial assistance (BACEN, 1993). As of march 1993, there were 87 financial institutions owned by Brazilian States, from which 60 (69%) have been under some kind of intervention from the Brazilian Central Bank due to financial problems. Not surprinsingly, the problems of the financial institutions are due to the financing of the deficits of their main shareholders, i.e., the State governments. In June 1992, the consolidation of the financial statements of State owned commercial banks showed that 67% of their assets happened to be loans to the State governments. Consistent with our model, the Brazilian inflation has been among the highest in the world in the last 10 years.

In the Brazilian case, there are several ways in which the Central Bank can bail out banks. The simplest is the use of the rediscount window, or through a loan to assist liquidity problems. This type of loan is a hidden rediscount window in Brazil, and can be of two types: normal or extraordinary. But the Central Bank also may lend indirectly. It is done through three basic routes. The first is a loan to Banco do Brasil (large official bank, federally owned) which then lends to the official bank. The second, more contorted, and less transparent, is a loan to Banco do Brasil, which lends to private banks, which, finally, lend to the official bank in need of money. The third, is a loan to a

private bank, through its rediscount window, which lends to the official bank.

Any bank creates liquidity, and may be considered as a money issuer, provided that we are dealing with a large enough monetary aggregate. But the power of a private bank to issue money is limited by the assessment that the private market has of its credit exposure. The Brazilian Central Bank has the right to liquidate banks which are overexposed. This right has been utilized in private banks in several occasions, but in official banks only in rare occasions, and when these banks are controlled by small and less powerful States.

Therefore, money creation by private banks is limited and predictable. However, a large official bank may issue money in a pratictically unlimited way. In Brazil these large banks are: Caixa Econômica Federal, Banco do Brasil, Banco do Nordeste do Brasil, Banco da Amazônia and Banco Meridional, on the federal level (there is also BNDES, the Brazilian Development Bank, that operates in a slightly different manner), and BANESPA, Nossa Caixa, BEMGE, CREDIREAL, BANRISUL, Caixa Econômica do Rio Grande do Sul e BANERJ, the comercial banks from the more powerful States.

4.2 - Argentina

Argentina is a second example of a country where a State (provincia) owns financial institutions. As in Brazil, the Central Bank of Argentina did not have the authority (or the political will) to intervene on the bankrupted public financial institutions. As a result, these official banks showed the same pattern of economic losses following the financing of their own shareholders (the States)[1]. Consistent with our model, Argentina had also experimented huge inflation rates at the time.

Nevertheless, in March 1990 Argentina implemented a stabilization plan were the Monetary Authority was forbidden to issue money without an increase in the country's reserve of foreign currency. This plan gave the central bank the authority (or the political will) to break the financial support to the State banks.

This case shows that indeed the monetary authority can break the transfer of deficits to the federal government. This is not inconsistent with our model. If the central government knows that it will be in the next period with probability 1, it has the incentives to undo the overspending by saving at time *0*.

The main conclusion is that allowing the States to own financial

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[1]See Viglioni in BACEN(1992).

institutions implies a risk on the country's monetary stability. Avoiding the transfer of State deficits requires tough measures, which a political party may not be willing to take if its opponent may be the major beneficiary.

Our model also delivers a policy implication for economic blocks such as Mercosul or the European Community. Suppose that the block decides to establish a Monetary Authority to provide financial help to the members whenever is necessary. In this case, the block should not allow Regional Central Banks. Otherwise, the Regional Banks might end up acting as a State owned financial institution, financing consumption at the cost of inefficiently high inflation rates.

5 - Conclusion

In a federation the States democratically pressure the central authority for a share on the federal budget. This share is bargained in the congress, where the political parties will eventually find an agreement.

In this paper we showed that financial institutions belonging to the States may inefficiently overcome the political bargaining. The main point is that an official financial institution allows a State to transfer deficits to the federal government without the intervention of the Congress. In this case, the allocation of resources move from a coordinated game, that should lead to a Pareto efficient allocation, to a non cooperative game with the well known risk of an inefficient equilibrium.

The main message of this paper is that by eliminating State owned financial institutions we decrease the risk of getting stuck in perverse equilibria with high deficits at all States, and high inflation.

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