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Appendix 2
The Law of National Guaranteed Banks

At the end of 1887, a new monetary experiment was underway, the Law of National Guaranteed Banks, commonly referred to as the "free banking law." This law allowed any banking organization to issue national paper notes when adequately backed with government gold bonds. The wide use of the term "free banking law" reflects the conventional historical view, one which sees the experiment as a monument to the laissez faire political ideology that was supposed to hold sway in Argentina at that moment.

To temper this view with some empirical evidence, we might observe that, from the time of its inception, the provisions of the new law were for the most part adopted only by government-related (national and provincial) banks. Private financial institutions rarely acquired government bonds as a means to issue notes. This raises the question of whether the technical provisions of the law discriminated among institutions, making the note issue business profitable only for government related banks.

The major provisions of the law are presented in Table A2.1. Under those provisions, the official transactions allowing a banking organization to become a bank of issue operated as follows.

Suppose that a potential bank sought authorization to emit paper peso notes. To receive, say, 100 paper pesos in bank notes, the bank had first to deposit 85 gold pesos at the Banco Nacional in exchange for a 100 gold peso bond. But the bank also had to maintain the equivalent of 10 percent of the received paper notes as specie reserves. The remaining paper notes, only 90 paper pesos, would be issued into circulation in exchange for other assets: to buy more gold to issue more paper, to lend out, to replenish the bank's reserves, and so on. It is important to emphasize here that gold had a 35 percent premium with respect to paper in the market at the time. At that rate of exchange, the potential banker had to surrender the equivalent of 115 paper pesos to put into circulation only 90 paper pesos, net of the required reserves. That is, 25 paper pesos were tied up by such an operation, and would earn no interest. The typical balance sheet of a guaranteed bank was as in Table A2.2.

With this background we can evaluate the profitability of being a bank of issue.[1] Define,

NPV	=	net present value to a guaranteed bank of the issue;
B	=	paper peso value of government bonds acquired at the Banco Nacional;
PAR	=	nominal value of the bonds;
R	=	yearly interest payments on the bonds;
N	=	size of issue in paper notes, net of specie requirements;
i	=	the rate of return on alternative assets.

1. We draw on the seminal work by Cagan (1965) and Rockoff (1972).

Table A2.1. *Provisions of the Law of National Guaranteed Banks*

Date law passed	November 1887
Eligible bonds to secure paper notes	Government bonds specially created for that purpose.
Nature of the financial operation	Each bank had to deposit 85 gold pesos for a 100 gold peso bond and would receive 100 pesos in paper notes.
Capital requirement	Realized capital > 250,000 pesos.
Specie reserve requirements	10% of the received paper notes notes had to be maintained as reserves.
Note volume limitation	For each Bank, notes < 90% of 250,000 pesos. For all banks, total issue < 40 million pesos.
Interest on bonds to the bank	4.5% annual interest and 1% annual amortization at par and payable in gold.
Exceptions to the above provisions	Banks that already had in circulation inconvertible notes at the date of the promulgation of the law could adhere to it by acquiring the public bonds at a specified rate each year.

Sources: Agote (1887, pp. 414–24); Lorini (1902, pp. 431–34).

Note that B is the effective value of the bond. The value of the bank charter is

$$NPV = -B + \sum_{t=1}^{T} \frac{iN + R}{(1+i)^t} + \frac{PAR}{(1+i)^T}.$$

If T is assumed to be large, one arrives at a measure of profitability

$$NPV = -B + (iN + R)/i = (N - B) + (R/i).$$

It follows that the project is profitable, $NPV > 0$, if and only if

$$R/(B - N) > i.$$

The final expression tells us that the rate of return from issuing notes is the ratio of the income from the bonds securing the notes R, to the bank capital tied up $(B - N)$. If this were greater than the average return on alternative assets i then one should expect to see many banks seeking rights to issue paper notes. Only a computation of the rate of return can tell us if this were a likely outcome.

By the provisions of the Argentine law, the capital tied up (defined as the difference between the value of bonds acquired in guarantee and the value of paper notes net of reserves) necessary to obtain 100 pesos in paper notes was 25 pesos. The state gold bonds provided an interest of 4.5 percent a year at par and payable in gold. Assuming, only for the purposes of this exercise, a steady exchange rate of 1.35 paper pesos for one gold peso, the yearly payments on the 100 gold peso bond would amount to 6.1 paper pesos. Thus, the rate of return on note issue may therefore be estimated at 24.4 percent

Table A2.2. *Balance Sheet of a Guaranteed Bank*

Assets		Liabilities and Capital	
Government Bonds	115	Paper Notes	100
Loans	90	Capital	115
Specie Requirements	10		

Notes: See text.

Table A2.3. *Average Bank Profits, 1885–87*

Bank	Dividend as a Percentage of Par Value Capital	Dividend as a Percentage of Percentage of Par Value Capital and Note Issue
Bank of Italy and the River Plate	12.9	12.9
Bank of London and the River Plate	11.0	11.0
Banco Nacional	12.0	4.0
Banco Provincial de Santa Fé	9.4	7.6
English Bank of the River Plate	7.5	7.5
Banco Provincial de Córdoba	7.0	5.3
Banco Provincial de Salta	6.9	5.6
Banco Provincial de Entre Ríos	1.5	1.1
Banco Provincial de Mendoza	1.0	1.0

Source: Agote (1887, pp. 115–340).

(6.1 divided by 25). This would be expected to compare favorably with the average rate of return on capital from all assets of the banks (see Table A2.3).[2]

On the surface, then, the scheme looked extremely profitable for any potential bank of issue because the income provided by the interest earned on the bonds exceeded the opportunity cost of the tied up capital. But, if this were the case, what explains the apparent indifference of the private banks to the project?

One plausible explanation is the private investor's concern with the permanence of law's provisions. Since on this matter there is a lack of historical evidence, the speculations advanced here should be taken as tentative. From the derivation above it is clear that the project's profitability depended both on the government's commitment to honor its bond service obligation and on the legal rights to issue paper notes to endure to a time T that is far in the future. However, there were no guarantees that the scheme would endure over the long run and, simply put, the investor's fear might have been that, once the gold was deposited in the vaults of the Banco Nacional, the government might deviate from its original banking policy. What if, after a while, the government revoked the law and, with it, the property rights to the gold?

Once private investors surrendered their own equity in exchange for bonds, the government could be tempted to tax this capital, repudiation of the law being an extreme taxation scheme. Fears of repudiation were not specious. The Bank of London and the River Plate had suffered a bitter experience with the rights to issue notes in the Province of Santa Fé in the mid-seventies when the provincial government repudiated unilaterally the terms of a concession to issue banking notes.[3]

Expectations about how the law would be enforced were crucial to establish the

2. If return to parity was the expected near future, the rate of return given by the formula $R/(B-N)$ would have been a lower estimate of 18 percent, but still a profitable rate.
3. Joslin (1963) stresses that the Bank of London appealed and lost its case when the federal courts ruled that the provincial government could properly withdraw note-issuing rights.

Table A2.4. *Balance Sheet of a Government-related Wildcat Bank*

Assets		Liabilities and Capital	
Government Bonds	115	Paper Notes	230
Other Assets	230	Capital	115

Notes: See text.

perceived life span of the project. If an abrupt change in the banking regime, or an outright repudiation, were expected in the near future, the negative consequences for expected profits would have been very profound. How profound? That would depend, of course, on the hypothetical timing of the change. To give an extreme example: assume that two years after the law was passed the government revoked the property rights and also repudiated the bond income interest; with an average discount rate of 5 percent it follows (from the first expression above) that the project would have lost 83 percent of capital invested.

A somewhat different explanation is that investors had a less sanguine view about the project, decided to bid for the rights to issue the paper notes, but were denied when the monetary authorities preferentially allotted the rights to government-related banks. There is some evidence that the provincial governments had demanded a banking reform that would allow them to establish banks of issue.[4]

The newly created provincial banks did not invest already-accumulated domestic capital, but rather bought the "theoretical" shares with public debt contracted in the London money market. Thus, the scheme here became an arbitrage operation and to issue paper notes was profitable as long as

$$i^*B < iN + R,$$

where, i^* is interest rate at which the provinces could borrow in the London Market.[5]

In a subsequent, distinctly decadent, stage of the banking experiment, an explosion of "wildcat banking" occurred when the bond requirement of the law was lifted. This change made the expression (N – B) positive, so that the price paid for the rights to issue notes was below the value of the notes. There is evidence that only half of the bonds backing the paper notes issued by the government related banks were ever paid with gold.[6] The official banks overissued well above the law's prescriptions and then the true leverage provided by the notes was severely affected as can be appreciated from the example in Table A2.4.

4. The finance minister reported to Congress that "eight provincial governments are now attempting credit operations for the purpose of founding banks, and thus satisfying necessities which are acutely felt; this pointedly illustrates our present situation and pushes the government to hasten the presentation of the accompanying bill" (Agote 1887, 407).
5. The eight official banks that engaged in arbitrage operation had almost reached the quantitative ceiling prescribed in law by 1888. In addition, newly created private banks were allotted less than 8 percent of the stipulated sum of 40 million (Pillado 1901, 60–61).
6. Williams (1969, 59)