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## Calm Before a Storm: The Gold Standard During the Belle Époque, 1899–1914

After the Baring Crisis Argentina endured nine years of adjustments in the financial and real sectors and a pronounced deflation. These dislocations were painful but appeared necessary to get Argentina back in a position to restore external convertibility. Ultimately, convertibility was restored in 1899, and the whole experience has long been considered by scholars an archetypal success story of a peripheral country finding a way to adopt the reforms necessary to establish a credible convertibility commitment for its money.

This chapter examines the fruits of these efforts and studies Argentina's experience under convertibility from 1899 until the international gold standard was suspended by war in 1914. This Belle Époque was an era of rapid economic growth for the country, with large inflows of capital and labor from overseas, an expansion of the agricultural frontier, and a surge in trade that built on a comparative advantage in primary products. Under such auspicious circumstances, any study of the macroeconomic performance of the money and banking system is inevitably rather uneventful, even boring. There were no major crises, and the currency board arrangement functioned well in these undoubtedly good times. As we shall see, the adjustment mechanisms worked smoothly.

Unfortunately, the good times were not to last, and the first signs of a major downturn emerged in 1913, when adverse economic conditions in the London capital market spilled over to Argentina. The advent of war in 1914 severely constrained external markets for capital and goods, plunging Argentina into the biggest recession it had ever experienced. It was in these harder times that the rigidity of the currency-board system was to be seen as a distinct drawback, even though the system emerged from that recession without having been compromised. Argentina's reputation for having a firm gold standard commitment was further augmented, even at great cost to the domestic economy. Looking ahead, it would be the memories of this political-economy tradeoff in the 1910s, and of the older 1890s debate over the deflationary dangers of the gold standard regime, that would set the stage for the ultimate test of the monetary system in the early 1930s.

## The Adoption of Convertibility

As we have noted, a heated debate had raged in the late 1890s over what kind of monetary system would be best in light of the then-current international financial situation. All points of view could be heard. During the deflation, many had voiced their ardent disapproval of the negative effects of the paper peso's appreciation since 1895. Others, conversely, had been horrified at the prior depreciation and the continued deviation from the old parity. Gesell had argued against the damaging effects of deflation on investment and real activity. Pellegrini and his followers thought a convertibility plan necessary to eliminate "that element of anarchy and destruction—inconvertible fiduciary money."<sup>1</sup>

A large sector of the intelligentsia in money and banking circles, including highly respected ex-ministers of finance, held a relatively skeptical position as to the possibility of imposing convertibility and fixed exchange rates with adequate backing in specie. While it eventually became clear that convertibility would be the policy objective, this did not settle all of the questions. Doctrinal discussion centered on two principal issues.

First, there was no agreement regarding the legally fixed exchange rate parity that should be chosen in order to make convertibility operable. Various ideas surfaced, including the possibility of initially converting the paper peso at the market parity, and then converging to the old parity over an extended period of time during which a "sliding scale" of adjustments in the value of the gold premium would be applied.<sup>2</sup> In the end, the Pellegrini recommendation was accepted, with the country adopting convertibility at the prevailing market exchange rate of 2.27 paper pesos per gold peso.<sup>3</sup>

Second, reasonable doubts existed over the adequacy of fiscal reforms that would assure the credibility of the Conversion Office in its task of exchanging paper for specie. The level of specie reserves was likely to be very low, and it was feared that the mechanism, therefore, could not be maintained in the event of a speculative attack on the paper peso. Despite these concerns, at the inauguration of Congress in 1899, President Julio A. Roca (1898–1904) declared his intention to see convertibility restored as quickly as possible, announcing that

To achieve that result, we recommend the formation of a significant specie reserve. One of the causes that has most influenced the variation in the value of paper money is the lack of confidence in the direction the government is taking. Convertibility obliges us to reorganize and 'moralize' the mechanisms of the administration, to introduce all

1. Moyano Llerena (1935, pp. 48–49).
2. A minority on the Finance Committee in the lower chamber of Congress had proposed a scale of gradual reductions in the gold premium at a rate of 5 gold cents every six months until the old par was reached. It would have taken five and a half years to reach par under such a mechanism (Moyano Llerena 1935, pp. 62–63).
3. Moyano Llerena (1935) notes the important intellectual and political influence of Senator Carlos Pellegrini, the former President, in the adoption of convertibility in 1899. On the economic thought of Pellegrini, see Gallo (1997).

the economies possible in the budget, avoiding exaggerated expenditures, reducing or eliminating certain taxes, and re-establishing equilibrium in the public finances. Also the provincial governments have to play their part in this project. It is a fact that the number of administrative personnel in every province is more than superior to the needs. The bulk of those employees who delay the progress of the public administration only represent useless and harmful expenses and a burden that must be subtracted from the productive work force.<sup>4</sup>

The Law of Conversion (Law 3871) was passed on October 31, 1899, by Congress, establishing convertibility promised in 1891. The Finance Minister at the time was José María Rosa. From that moment, and for fifteen uninterrupted years, Argentina was to maintain gold standard convertibility at an exchange rate of 2.27 paper pesos per gold peso.<sup>5</sup>

The first article of the law established a clear and simple monetary regime. The Conversion Office would have the singular responsibility of exchanging paper for specie (and vice versa) at a rate of exchange fixed by law at 44 gold cents for each paper peso. Thus, any expansion or contraction in the amount of cash in circulation would exactly match the variations in the level of specie reserves on hand at the Conversion Office. With such a system of 100 percent marginal gold backing for the currency, there was a strict and inelastic relationship between variations in the stock of metallic reserves and variations in the monetary base. Consequently, all key autonomous monetary policy functions were proscribed, such as operating on the open market to buy or sell public bonds in order to influence the level of interest rates, or the use of rediscounts to provide liquidity. In addition, there could not be any other types of guarantees offered by the Conversion Office, such as the provision of Lender-of-Last-Resort assistance to the financial system. The money supply had been rendered completely endogenous by this choice of regime.

Another interesting aspect of the Law of 1899 was the degree of independence from political interference granted to the Conversion Office. The monetary authority was to be administered by a board of five directors chosen by the executive branch, each subject to approval by the Senate, and all appointed to a term in office of five years.<sup>6</sup> This was a clear and transparent attempt to enhance the credibility of the institution by keeping it at arm's length from the various branches of the government that might interfere with or apply pressure to the monetary authority as a way to seek fiscal or monetary policy relief in hard times. The plan was successful in this respect, and under these arrangements the Conversion Office maintained strict independence from the Executive, the

4. Quoted in Fernández López (1993).

5. For details of how Finance Minister Rosa coped with the consequences of the law see Rosa (1909), and on Rosa's participation in these debates see Gallo (1977).

6. According to Moyano Llerena (1935, p. 87) "the principal guarantee of the Caja is its separation from the Government and, in addition, that its administrators are personally responsible for any illegal application of the Caja's funds."

treasury, and the Banco de la Nación Argentina until the outbreak of the First World War in August 1914, when external convertibility was suspended.

Obviously, as the skeptics had noted, the most pressing problem facing the government was the creation of an initial reserve in specie that could guarantee, to some extent at least, the paper in circulation. This was vital in order to sustain a belief that parity could be defended in the event that the general public decided to test the convertibility of its paper pesos into gold. To say that the government's initial position was not very promising would be an understatement. The level of specie reserves at the Conversion Office throughout the period 1891–99 was zero. Originally it had been thought that the Conversion Office should have a reserve of approximately 30 million gold pesos, sufficient to back almost 25 percent of the monetary base. Article 4 of the Law of Conversion sought to generate fiscal revenue for this purpose, but this proved to be impossible in the time available, and it was not until 1910 that this goal was achieved.<sup>7</sup> In the end, under the constraints of no fiscal resources, no foreign gold loans, and no specie reserve whatsoever—and in a leap of great faith—the law went into effect anyway. This meant that in order to maintain convertibility in the early years of the law, it was going to be necessary to generate positive net inflows of specie. Otherwise the plan would surely fail.

### The Gold Standard Adjustment Mechanism

For the student of Argentine monetary history, the 1900–1913 gold standard period is relatively uneventful in that volatility arising from autonomous fluctuations in the stock of money and the paper-gold exchange rate were removed as independent sources of economic disturbances. The gold standard years were noteworthy for a sharp growth in the Argentine real output and the mild inflation of domestic prices, the latter a reflection of the swift increase in the world money supply during the so-called Golden Age of 1902–12. Key macroeconomic statistics for this period are shown in Table 6.1.

The monetary regime proved durable and credible in these years. From November 1899 and until the outbreak of the First World War, the Conversion Office stood ready to automatically exchange paper pesos for gold, and vice versa, on demand and at a fixed exchange rate of 2.27 paper pesos for each gold peso. The figures in Table 6.1 show that this rule was strictly obeyed by the monetary authorities. In all years, the increase in the monetary base was fully 100 percent backed by the inflow of gold reserves at the Conversion Office. By adopting and adhering to a very strict gold exchange rule, the Conversion Office surrendered its control over the quantity of money, which became endogenously determined in the money market.

7. Moyano Llerena (1935, pp. 85 and 88–90).

Table 6.1. *Monetary and Fiscal Indicators, 1900–1913*

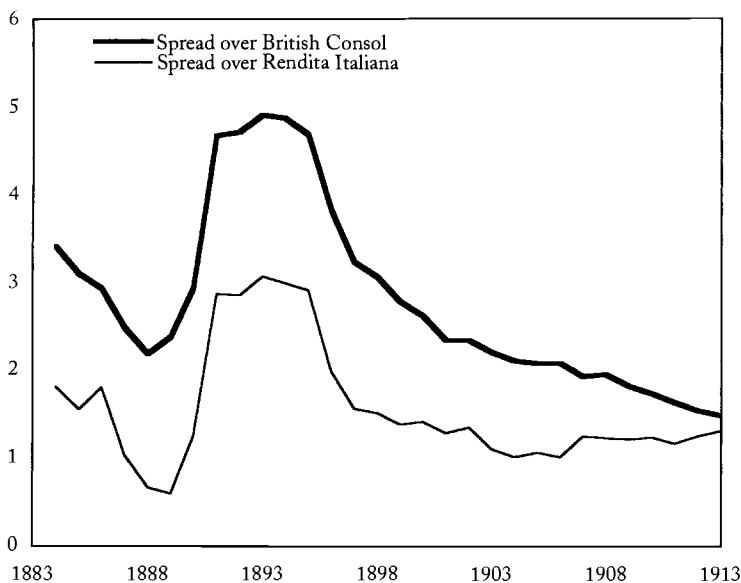
Year	Conversion Office		Money Supply	Multi-plier	Domestic Price Level	Real Output Index	Money Velocity	Fiscal Deficit as a Percentage of	
	Monetary Base	Gold						Receipts	GDP
1900	295	0	482	1.63	182	9,430	2.78	5.1	0.6
1901	296	0	472	1.60	159	10,220	2.68	5.6	0.7
1902	296	0	498	1.68	175	10,020	2.74	27.7	3.2
1903	380	87	640	1.69	165	11,450	2.30	3.8	0.4
1904	407	114	761	1.87	169	12,670	2.19	3.5	0.4
1905	498	205	944	1.89	184	14,350	2.18	0.0	0.0
1906	526	233	972	1.85	195	15,070	2.36	2.0	0.2
1907	531	239	981	1.85	201	15,390	2.46	1.0	0.1
1908	581	288	1,121	1.93	193	16,900	2.27	-0.8	-0.1
1909	685	392	1,390	2.03	210	17,730	2.09	26.5	2.5
1910	715	422	1,580	2.21	227	19,020	2.13	33.9	3.0
1911	722	429	1,635	2.26	226	19,370	2.09	33.9	3.1
1912	799	506	1,775	2.22	231	20,950	2.13	17.6	1.6
1913	823	529	1,673	2.03	232	21,160	2.29	16.2	1.5

*Notes and sources:* Monetary base, gold, and money supply in millions of paper pesos. Real output index in millions of 1950 pesos. Fiscal deficit as a percentage of GDP is estimated as the fiscal deficit deflated by wholesale price index divided by the real output index. See Appendix 1.

How did the market adjust? Starting from a situation of equilibrium in the money market the adjustment mechanism operated as follows. An increase in domestic real income led to an increased demand for money. This was satisfied by an inflow of specie and an increase in foreign reserves at the Conversion Office. This in turn led to an expansion of the monetary base and—via the money multiplier—a corresponding increase in the broad money supply. Thus, in this type of regime, the variable that quickly adjusts to restore equilibrium is the domestic money stock. In short, this theory states that gold flows restore equilibrium in the money market via an adjustment in the money supply, and they have no independent influence on other macroeconomic variables.

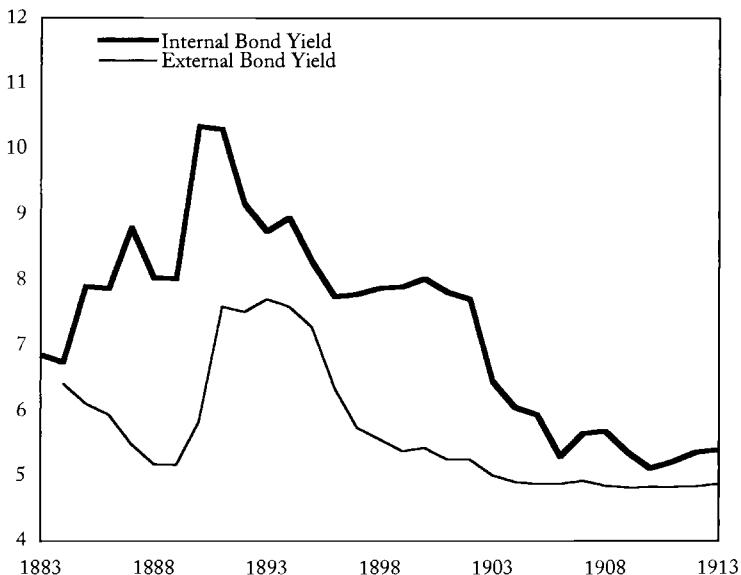
The key assumptions here are that prices and interest rates are internationally determined on world markets via purchasing power parity (PPP) and interest parity. Are such assumptions justified? We have already noted that PPP appeared to hold for Argentina in this period (see Appendix 4). This result is none too surprising given the very high share of foreign trade in output. What about international interest arbitrage? Recall that Argentina became a substantial long-term international borrower in the second half of the nineteenth century. Figure 6.1, which plots the Argentine-European external bond yield differential on an annual basis, shows that the required yield to hold an external Argentine bond was always higher than the yield of a comparable long-term European bond, the Rendita Italiana. For the entire 1884–13 period, the Ar-

Figure 6.1. Bond Spreads, External Bonds, 1883–1913



*Notes and sources:* See Appendix 1.

Figure 6.2. Bond Yields, External and Internal Bonds, 1883–1913



*Notes and sources:* See Appendix 1.

gentine long rate was, on average, 2.8 percentage points higher than that of the United Kingdom and 1.5 percentage points higher than that of Italy.

However, the chart also shows remarkable changes in the magnitude and evolution of the spread for the various subperiods of analysis. For example, whenever financial markets perceived that the Argentine government was not following prudent fiscal and monetary measures, Argentine debt instruments were rated as poor risks, and traded at a big discount, despite the explicit government guarantee. From 1889 to 1894, the abrupt rise in the risk spread was driven by the Baring Crisis, and the yield "surcharge" on Argentine external bonds (at least for those that were not in default) amounted to 4 or 5 percentage points in the London market.

After 1895, the fears that Argentina would repudiate its external debt started to subside. The external bond spread abruptly declined until 1900, reaching a steady low plateau during the gold standard years and continuing with a modest declining trend relative to the British consol. Figure 6.2 confirms the fact that the abrupt fall in the spread that occurred from 1895 to 1899 was entirely dominated by movements in the yields of the Argentine external bonds. After 1902 there is a clear convergence of the domestic bond yield to the external yield. When the exchange rate and default risk were minimized, capital markets were again closely linked, and the Argentine long-term interest rate was almost equal to the long-term rate of the international capital markets.

If we accept the preliminary evidence in favor of goods and capital market arbitrage, a simple test can be conducted to analyze the operation of the gold standard in Argentina for the years 1904–13. The test consists of comparing the actual contribution of the inflow of gold to changes in the domestic money stock with the residuals of the change in the demand for the money minus the changes produced by domestic sources (that is, changes in the money multiplier). Table 6.2 exhibits the results of the test.<sup>8</sup>

8. The methodology is as follows. The postulated money demand takes a standard form (see Appendix 4) where real money balances depend on real income  $Y$  and the interest rate  $i$ , with  $\ln(M_t/P_t) = a + b \ln Y_t + c \ln(1 + i_t) + u_t$ . The actual rate of change of money supply due to foreign sources equals to the rate of change of gold reserves times the backing ratio

$$\frac{G_{t-1}}{MB_{t-1}} \frac{\Delta G_t}{G_{t-1}},$$

where  $G$  is gold reserves at the Conversion Office,  $MB$  is monetary base, and we assume for this purpose a fixed money multiplier  $M/MB$ . The predicted rate of change of the money supply due to foreign sources is the rate of change in predicted nominal demand for money from the money demand equation minus the rate of change of money supply due to domestic sources. The latter term is calculated as the actual total rate of change of money supply minus the actual rate of change of money supply due to foreign sources, namely,

$$\frac{\Delta M_t}{M_{t-1}} - \frac{G_{t-1}}{MB_{t-1}} \frac{\Delta G_t}{G_{t-1}},$$

where  $M$  is the stock of money. See McCloskey and Zecher (1976, pp. 357–85).

Table 6.2. *Effects of Gold Reserves on Money Supply, 1904–13*

Year	Predicted Effect, Using Specification		Actual Change
	A	B	
1904	5.9	10.9	7.3
1905	22.6	23.9	22.3
1906	18.9	8.1	5.7
1907	0.3	1.0	1.0
1908	2.4	3.0	9.1
1909	12.8	13.7	17.8
1910	1.3	8.4	4.6
1911	-2.8	-3.4	0.8
1912	11.1	11.9	10.7
1913	8.6	9.3	3.0

*Notes and sources:* Annual rates of change. Column A uses long-term interest rates in the money demand equation; column B uses short-term rates. See text.

The correlation between predicted and actual reserve flows lends support to the monetary theory of the balance of payments as applied to Argentina for this period. That is, the demand for money in excess of supply provided by domestic sources is mainly satisfied by adjustments in gold reserves, a reflection of the balance of payments adjustment.

### Money, Prices, and Real Activity under the Gold Standard

We have seen how the Argentine economy achieved convertibility, and we also examined how the new regime operated. Yet this tells us little about the more important end result of any policy reform package: what it meant for broad long-term economic achievement. How well did the Argentine economy perform under the new gold standard regime? To answer that question, we now briefly review some of the key events of the 1900–1913 period.

### *International and Domestic Overview*

In the period 1899–1914 the international economy was characterized by extreme financial and monetary liquidity in international markets due to a sustained increase in the world stock of gold. This expansion reached 3.5 percent annually between 1890 and 1914, well above the 1.5 percent annual average growth between 1866 and 1890.<sup>9</sup> Under the international gold standard system these growth rates produced a generalized increase in the means of payment in the central countries and brought about an extraordinary increase in the level of activity and in prices. In Great Britain in the period 1899–13, the real economy grew at an accumulated rate of 16.8 percent, while the price index grew at 12.3

9. Data from Friedman and Schwartz (1963, p. 137).

percent. In the United States, the accumulated growth rates of the economy and of prices were 51.9 percent and 28.4 percent, respectively.

Argentina also underwent an important period of expansion in the real sector of the economy with the level of real output growing in 1899–1914 at an accumulated rate of 78.5 percent, equal to an average annual rate of 5.8 percent. In another reflection of the increase in the international stock of money, Argentina imported external inflationary pressures. The price level rose at an accumulated rate of 36.3 percent during this period, an average of 2.6 percent annually. Following a severe depression in prices at the beginning of the century (1899–1901), which brought a fall of 15 percent in price levels, the subsequent tendency for prices to rise reflected extraordinary improvements in the terms of trade for all countries that exported agricultural goods. The increase in exports plus the continued inflow of capital into Argentina had a strong correlation with the country's real, financial, and monetary performance.

From the point of view of monetary policy, the Conversion Office respected the rules of the game. The monetary authorities lost control of the quantity of the monetary base, which was left to be determined endogenously by the domestic money market. According to the monetary approach to the balance of payments, movements of specie became the vehicle by which equilibrium was restored to the market through adjustments in the specie stock, and from Table 2.4 we saw that the entire increase of the monetary base from 1900 to 1913 was exactly equal to the rise in the level of specie at the Conversion Office.

### *Bank Money and Financial Deepening*

The growth of the monetary base was surpassed by that of bank money, which grew at an accumulated rate of 161.5 percent, or an annual rate of 12.2 percent. Bank money, and the money multiplier, clearly showed procyclical tendencies. After an accentuated fall after the Baring Crisis, the multiplier rose from a low of 1.2 in 1893 to a high of 2.2 in 1912. Judged by this statistic alone, this recovery could not match the financial deepening achieved in the 1880s during the period of the Law of National Guaranteed Banks.

Nevertheless, we feel certain that the deepening of financial intermediation which occurred in the later period was more genuine than in the previous expansive experience since, in the later case, the country's economic agents made real use of bank deposits as an alternative monetary asset. In the boom of 1889, for each "guaranteed" peso held by the public, little more than two pesos of commercial deposits existed. By 1912, for each peso in the hands of the public, there were more than three pesos in private commercial deposits. For some comparative perspective here, in the United States the ratio of deposits to cash was 3.4 in 1890 and 6.8 in 1910. This process of expansion of money

or bank credit can be explained by the behavior of the level of reserves in the financial system and the ratio of cash to deposits held by the public.

### *Bank Reserves and the Risk of Runs*

While the reserve ratio, the ratio of bank reserves to deposits, remained quite high in Argentina, it fell from an average of 50 percent for the decade of the 1890s to about 30 percent in 1910. This fall in aggregate reserves explained 8 percent of the change in the broad money supply during this period of considerable economic and monetary expansion. It is interesting to note that even when the Banco de la Nación Argentina began to play an important role in financial markets, the bank remained very conservative in terms of loans, maintaining reserve ratios as high as 62 percent in 1903 and no lower than the 31 percent level seen in 1912. The private banks in Argentina had lower reserve levels with a maximum of 31 percent in 1901 and a minimum of 24 percent in 1911.

Given the monetary regime, such a cautious attitude toward bank reserves is, as we have suggested, not surprising, and we will explore this question more deeply in the next chapter. For now, we again stress that the system of fractional-reserve banks functioned in the absence of a Lender of Last Resort, since neither the Conversion Office nor the Banco de la Nación Argentina had the authority to advance rediscounted funds in the event of a massive run on the deposits of private banks.<sup>10</sup> This seeming structural weakness was offset by a high level of reserves relative to countries whose central banks had discretionary rediscountr policies. In fact, the reserve ratios in the Argentine financial system under the gold standard were *three times higher* than those in the United States—even though the United States, prior to the creation of the Federal Reserve Bank in 1913, was, like Argentina, without a formal Lender of Last Resort.

However, Argentina had virtually no mechanisms, public or private, to prevent liquidity crises, even absent a Lender of Last Resort. In contrast, the United States had the clearing houses and other institutions formed to forestall financial panic, a system that was buttressed by the Aldrich-Vreeland Act of 1908 under which a group of highly capitalized banks formed the National Currency Association.<sup>11</sup> No such institutions existed in the Argentine financial system, a structural weakness that would become evident in the crisis of 1914.

10. See our subsequent chapter on internal and external convertibility. In fact, the Banco de la Nación Argentina did make some small rediscounts after a change to its rules circa 1904. But major rediscountr powers were not available until 1914, when a new emergency law was passed. We discuss this legal change at the end of this chapter.

11. These banks were authorized to rediscountr the portfolio of banks suffering a run on deposits by the public. Within limits, banks with problems could convert their assets into cash to halt any generalized run by depositors and forestall a credit crunch. Several authors maintain that the Aldrich-Vreeland Act provided the mechanism by which the United States avoided a serious financial crisis in August 1914. See Friedman and Schwartz (1963, pp. 170–71) and Timberlake (1978).

### *Cash, Deposits, and Public Behavior*

How did the general public behave in the new regime? Confidence in the banking system clearly recovered from the pessimistic scenario of the 1890s following the Baring Crisis. This is well illustrated by the evolution of cash and money. We noted earlier that financial deepening, measured by the increase in private deposits, can serve as a force to expand the monetary holdings of the public. The ratio of cash to money was 36 percent when the Conversion Law was approved in 1899. In 1901 the ratio peaked at 38 percent, and then fell monotonically, reaching a plateau at about 24 percent in 1911. This secular trend fed into the expansion of money until 1912, the first year in which the economy began to feel symptoms of financial fragility. If we recall that the stock of money can be split into base money and banking money, the growth of the latter explains the 55 percent of the growth in the stock of broad money in the economy during this period.

### *Prices and the Real Exchange Rate*

Strengthened by credibility, the real exchange rate appreciated relative to the pound sterling by 15 percent in the period 1899 to 1914. The dynamics of the real exchange rate in this case resemble the recent experiences with stabilization in developing countries based on a fixed exchange rate as a nominal anchor. Put another way, the inflow of capital to the Argentine economy implied an increase in the quantity of base money and, as a result, in the quantity of broad money—where the increase in the level of bank money was 60 percent over and above the change in the monetary base. This monetary expansion produced an increase in aggregate demand and domestic prices started to rise more rapidly than the level of international inflation.

The sustained price boom was reflected in many indicators. One example is a crude index of real estate prices based on the price per square meter of residential properties in the city of Buenos Aires.<sup>12</sup> The index shows a clear cyclical evolution: first, a real estate boom in 1887–90 with an increase of 210 percent in prices; a major depression in 1890–94 with a fall of 50 percent; a stagnation in 1895–1903; and finally a large increase of more than 350 percent under the gold standard from 1904 to 1913. The sensitivity of these asset prices to international movements of capital can be seen clearly during the financial crisis of 1914, with a fall of 33 percent in a single year.<sup>13</sup>

12. While clearly imperfect, the index is a useful proxy for the evolution of nontradable goods prices. Given the significant international mobility of labor during this period, an index of real estate prices is perhaps a better proxy for aggregate demand than, say, nominal salaries.

13. On this unpublished price index, see della Paolera (1999b). The primary source was the *Anuario Estadístico de la Ciudad de Buenos Aires* (Annual Report of Statistics for the City of Buenos Aires), which provides detailed information in 14 parishes on the number, size, and prices of properties sold. The index weights each parish according to sales.

### *Summary: The Pros and Cons of the Gold Standard*

On the eve of the First World War, few observers would have grumbled at the economic performance achieved by Argentina over the preceding decade. By 1912 most macroeconomic indicators were at their best-ever levels. Monetary circulation had backing in specie of 63 percent. Country risk measured by the bond spread between domestic and international fixed income assets was as low as 1.5 percent. A steady increase in the real quantity of money continued at a rate of 7 percent per annum. The federal budget deficit was no higher than 20 percent of fiscal revenues. The ratio of public debt to national output was as low as 35 percent, having been more than 100 percent in 1891.

Argentina's potential for such a dynamic upswing was recognized by Alec Ford. He emphasized the importance of the international economic cycle on the economy of a peripheral country that had credibly adopted the gold standard. In his view, the gold standard maximized an economy's ability to attract international investors in periods of international bonanza. However, by symmetry, simultaneously Argentina had to face the key weakness of this kind of regime. For Great Britain, perhaps, the adoption of the gold standard mitigated the consequences of unfavorable external shocks; but for emerging market countries like Argentina, the convertibility system left the economy very sensitive to sudden shocks in the country's terms of trade or in international interest rates. Ford's vision was thus of a gold standard that amplified economic cycles:

It is easy to understand the dislike of some Argentines for a system which dictated that a slump must be aggravated by monetary reactions, although, doubtless, they had forgotten that the same system served to enhance booms.<sup>14</sup>

In truth, many Argentines were aware of both the upside and the downside. In 1909, not long after the United States recovered from a menacing financial crisis in 1907, Silvio Gesell again put his finger on a key issue. In his work *La pléthora monetaria de 1909 y la anemia monetaria de 1898* (Monetary Plethora in 1909 and Monetary Anemia in 1898) he sounded a note of caution that might have seemed out of place as capital inflows surged during Argentina's great boom:

Our money is so intimately and solidly linked to gold, as the pound sterling is and even more so than the franc and the mark.... If, in some faroff country with a gold standard, a crisis develops, this crisis will have immediate repercussions for the Argentine paper currency.... And it should be that way, as that is what the Law of Conversion is all about. He that enjoys the advantages of an international money must also accept its inconveniences, the pros and the cons of monetary solidarity.<sup>15</sup>

Still, one might imagine that few were listening to Gesell's warning at a time of unprecedented growth and prosperity. In the Argentine economy, exuberance,

14. Ford (1962, p. 188).

15. Gesell (1909, p. 56).

rational and otherwise, was at all time high. Taking all these factors into consideration, it is likely that the inhabitants of Argentina were not at all prepared for the severe foreign-exchange and financial crisis—a “twin crisis”—that was about to hit the country in 1914.

### **The Foreign Exchange and Financial Crisis of 1914**

The First World War was a tremendous negative external shock to an economy as open as Argentina’s. It maintained fluid international economic relationships with both sides of the conflict, but it was financially tied to the pound sterling. Eventually the conflict would end, but by then it would have destroyed the harmony of the international monetary system based on the gold standard, the very regime that Argentina had fought so hard to credibly join. With the exception of the United States, core countries had decided by mid-1914 to let the value of their monies depreciate relative to gold, and Argentina had little choice but to join them by abandoning convertibility in August 1914.<sup>16</sup>

#### *Warning Signs*

Even as early as the beginning of 1913, contractionary financial and monetary policies adopted in London started to have a strong effect on the Argentine domestic economy. The Bank of England raised its discount rate from 3.4 percent in 1912 to 5 percent by late 1913.

By dint of the close arbitrage linkages of purchasing power parity and interest parity, such shocks were rapidly transmitted to domestic markets, and the figures in Table 6.3 allow us to see some of the impacts. The seemingly unstoppable increase in the domestic monetary base that had been witnessed for over a decade was swiftly halted. Then, for the first time since the implementation of the convertibility law, a reverse in specie flows caused a reduction in the money supply of 4.8 percent. A 6.4 percent decline in bank deposits at the same moment reflected the spillover of these effects into the broad money market.

These were early, yet clear indications that Argentina was about to import deflationary pressures from Europe. In 1913, the annual rate of price inflation slowed from 2.6 percent to 0.2 percent, and the growth rate of the economy slowed to a discouraging 1.0 percent. Bankruptcies increased by 20 percent relative to 1912, and, as we have already mentioned, there was a 33 percent drop in residential real estate values in the city of Buenos Aires in one year.

The sudden cyclical deterioration in a very broad group of economic and financial indicators—including the values of real estate and farm land, the scale

16. The United States imposed restrictions on the export of specie during 1917–19, but maintained the convertibility of dollars to gold within its borders. In June 1919, the free movement of capital was reestablished (Bordo and Kydland 1992, pp. 22–24).

Table 6.3. *Financial Crisis Indicators, 1913–14*

Year	1912	1913	1914	1915
Monetary Base, Percentage Change	10.7	2.9	-2.4	23.0
Gold Backing of Monetary Base, Percent	71.8	72.6	66.3	72.5
Money Supply, Percentage Change	9.3	-5.3	-9.5	16.0
Banking Money, Percentage Change	8.2	-11.7	-16.3	8.0
Bank Reserves, All Banks, Percent	28.6	32.4	33.8	42.2
Bank Reserves, Bank of London, Percent	30.6	34.0	Feb. 46.0	Jan. 68.5
			Apr. 53.0	
Bank Deposits, Percentage Change	8.1	-6.9	-14.2	23.4
Wholesale Prices, Percentage Change	2.0	0.2	1.2	6.0
Commercial Bankruptcies, Percentage Change	—	20	Annual 175	—
			Jul.–Dec. 232	
Real Output, Percentage Change	8.0	1.0	-11.0	1.0
Exchange Rate, Paper Pesos per Gold Peso	2.27	2.27	2.27	2.31

*Notes and sources:* See Appendix 1.

of bankruptcies, and the volume of deposits—gave only a hint of the difficulties that the financial system was to face as the deflation threat developed. In a deflationary scenario, leveraged financial entities are in grave danger. There is a marked change in the relative values of banks' assets and liabilities. In a deflation, economic agents look for liquidity. This entails an increase in the use of cash versus deposits (bank liabilities) and a decrease in the propensity to hold illiquid assets (assets that normally form a part of banks' portfolios). This portfolio shift implied a general deterioration in the indicators of liquidity and solvency of the financial system.

Another microeconomic ratio we must keep in mind when considering a deleterious external shock to an open economy is the relationship between the monetary liabilities and the reserves in specie, that is, the ratio between inside money and outside money. At the start of 1912 the ratio of specie reserves to broad money was 29 percent; that is, the quantity of domestic money was roughly three times the specie at the Conversion Office. This ratio is, of course, a function of two other ratios in the monetary system: the ratio of monetary base to reserves in specie, an indicator of the solvency of the Conversion Office in terms of being able to maintain the external convertibility of the peso; and the ratio of broad money supply to the monetary base, the money multiplier, which reflects the existence of a financial system with fractional reserves.

The banks create secondary money, or bank money, by means of the deposits they hold. The inherent instability of fractional reserves arises because the general public may believe that a peso in the pocket is better than one on deposit. A contraction in the money multiplier follows, which reduces the quantity of money in the economy. The economy moves from deflation to financial crisis when the public begins to panic, or run, by trying to convert all its deposits into



Cartoon 6.1. *En Europa, la tierra de Perogrullo, a la mano cerrada se llama puño, y en la Argentina, a lo mano cerrada se llama ruina.* (In Europe, the land of platitudes, the closed hand is called fist, and in Argentina the closed hand is called ruin.)

*Notes:* This cartoon conveys a flavor of the international transmission of the 1913 economic crisis. In emerging markets it is the financial market that delivers the blow, then as now. The fist carries the label *crédito* (credit). Abandoned factories rot in the background as unpaid bills lie on the ground.

*Source:* PBT, no. 455, August 16, 1913.

pesos. With bank reserves only a fraction of total deposits, the intervention of a monetary authority is needed to provide the liquidity necessary to preserve the stability of the financial system.

Unfortunately, given the institutional context, Lender-of-Last-Resort actions were explicitly *not* a responsibility of the Conversion Office, or anybody else. Thus, in the 1913 scenario it is easy for us to see, once again, the trade-off between internal convertibility (stabilizing the domestic financial system) and external convertibility (maintaining the monetary standard which guarantees the value of the money).

### *The Banking Crisis*

Argentina's battle with these tensions reached a critical point in August 1914. We can take an insider's look at the anatomy of this financial crisis by looking at the minutes of the Bank of London and the River Plate, at that time perhaps the most important private commercial bank in the financial system.<sup>17</sup> We should note that this bank always maintained a more conservative policy than others. Toward the end of 1913, its level of aggregate reserves was 32 percent as shown in Table 6.3.

In April 1914, the Bank of London and the River Plate increased the level of its reserves considerably to 53 percent, a response to an increase in the rediscount rate from 3 percent to 4 percent by the Bank of England. The bank also continually monitored an index of commercial bankruptcies in Buenos Aires. In 1913, the annual bankruptcy rate exceeded that of 1912 by more than 20 percent; by the third quarter of 1914 bankruptcies were increasing at an annual rate of 175 percent, and by 232 percent in the final quarter, as shown in Table 6.3. A severe downturn in real activity was underway.

Such statistics were "leading indicators" of real activity, and clear signals of the financial situation of firms seeking credit. This information was public, since it was regularly published by the Buenos Aires Stock Exchange (Bolsa de Comercio). So it was possible, therefore, for economic agents to infer the change in the quality of the portfolio of the consolidated banking system. In a deflation, the fall in the quality of bank assets could trigger a run by creating negative expectations as to the future solidity of the financial system.

From Table 6.3 we see that in 1914 Argentina's financial system had a level of fractional reserves equivalent to 34 percent. For comparison, the United States had a reserve ratio of 12 percent, and none of the European countries had a ratio in excess of 5 percent. Argentina also had a more accentuated preference for liquidity. The ratio of cash to money in the public's hands was almost 23 percent. By contrast, in the United States the proportion was 13 percent.

17. The primary source is the BOLSA (Bank of London and South America) archive, University College Library, London. See especially folios 192–95, 199–205, and 286 from 1914.

On the face of it, the Argentine financial system seemed, according to these indicators, to be better prepared to face a situation of illiquidity. In the early days of August 1914, however, a run on deposits of unexpected dimensions occurred.

### *Policy Response*

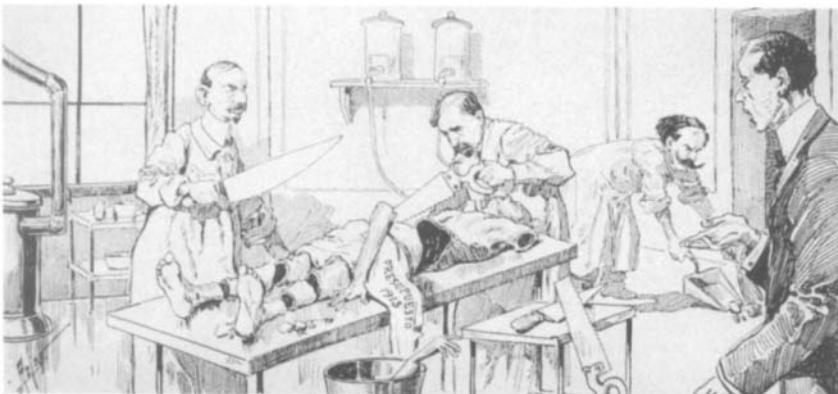
The major institutions in the banking system, under the leadership of the President of the Banco de la Nación Argentina, pressured the government to call a bank and foreign exchange holiday for one week. The banks hoped that a cooling-off period would put a stop to the panic and avoid a suspension of payments by several commercial banks.<sup>18</sup> The government acceded to the request, and, during the week of August 3, a variety of proposals were presented for resolving the crisis.

The presidents of the most important banks met daily, and on August 4 they presented a proposal which suggested that the government make a transitory emergency issue of currency to enable the Banco de la Nación Argentina to rediscount or make guaranteed advances to the banks. This proposal was put into effect. So too was a proposal to suspend withdrawals of specie from the Conversion Office and the banks.

Still, political agreement on these plans was not complete. In the minutes the Bank of London and the River Plate commented that the Executive opposed the idea of an emergency issue, and instead favored using the Conversion Fund (*fondo de conversión*) of 30 million gold pesos as a way to rediscount the commercial paper of banks with problems. At first, Congress approved a Presidential decree declaring a moratorium of 30 days on all financial obligations falling due during that period and established that banks must respond with up to 20 percent of the deposits that were to fall due. The Banco de la Nación was authorized to convert the Conversion Fund to paper and to use these funds to rediscount commercial obligations.

In the end, the use of emergency issues of currency was approved, despite the opposition of the Executive Branch. However, as a safeguard it was required that money in circulation could never have a backing in specie of less than 40 percent (at the moment the law passed, 72 percent of the money base was backed in specie). The new laws therefore offered the possibility of an expansion of the money supply that was more elastic in response to external shocks.<sup>19</sup>

18. The run on the banks also put pressure on the Bank of London and the River Plate, which had one of the highest reserve levels in the entire system. They reported that "in the face of such unusual circumstances we could not insist that our financial position was such as to withstand all the demands that could be made upon us and we accordingly joined our colleagues in the suggestion above [the request for a bank holiday]" (BOLSA, folio 193).
19. The emergency issue was also to be used for rediscounting commercial paper, but only with the consent of the Executive Branch.



Cartoon 6.2. *Los cirujanos socialistas.* — ¿Qué están ustedes haciendo? — La disección. — Pues cualquiera diría que estaban picando carne para hacer embutidos. (The socialist surgeons. [Person] — What are you doing? [The socialists] — The dissection. [Person] — Because anyone would say that you are grinding meat to make cold cuts.)

*Notes:* The 1913 economic crisis has hit. The socialist leaders attempting to impose fiscal conservatism on the national budget are (left to right) Nicolás Repetto, Juan B. Justo, and Alfredo Palacios. These were the first three members of the socialist party to become *diputados* (deputies, members of the lower house in Congress). The cartoon shows that in their desire to cut the budget they are dismantling it to see what is inside.

*Source:* PBT, año 10, no. 444, May 31, 1913.

The emergency laws gave Argentina powerful Lender-of-Last-Resort capabilities, but to a large extent they went unused. The tools were there, but, at least at the Conversion Office, the authorities were reluctant to use them. The currency board felt it would risk its credibility if it broke the gold standard “rules of the game” and issued unbacked money. This was true even as many central banks in the core countries were breaking the same “rules” left and right. If the Conversion Office was unwilling to use its emergency powers to make transitory issues—and if, as seems to have been the case, it had sufficient independence to refrain from doing so given the political pressures—then everything depended on the actions of the largest of the banks, the Banco de la Nación Argentina.

It is interesting to note that the government confronted the financial crisis by authorizing the Banco de la Nación Argentina to use two thirds of the 30 million gold pesos in the Conversion Fund to resolve transitory illiquidity at banks. In this way, the Banco de la Nación Argentina acted in a limited way as a Lender of Last Resort. In 1914 the money supply declined 9.5 percent, deposits 14.2 percent, and bank money 16.3 percent. Yet, despite substantial exchange controls prohibiting the exportation of specie, the exchange rate depreciated less than 2 percent in 1915. This minor adjustment suggests that the country’s economic agents felt that any suspension in convertibility was clearly contingent on international events. After this crisis, the recuperation of the financial system was a rapid one, though real output did not recover until 1916.

### The End of the Golden Age

For almost fifteen years, the convertibility law of 1899 had provided a sound basis for the macroeconomic policies of the Argentine Republic in the first era of economic globalization. Policymakers realized that, while they were constrained by open economy forces, they could still benefit from “network externalities” in a world enamored of gold standard rules and could use a credible commitment mechanism to overcome a doubtful reputation for fiscal and monetary responsibility.

Unfortunately for the country, most of the features that made the currency board regime so suitable for the Golden Age from 1900 until 1914, also made the system very risky for use in the turbulent interwar period that followed. This was not, of course, Argentina’s fault; the outbreak of war was surely exogenous to the country. But the change of scene amply illustrated that large external shocks can quite radically alter the calculation as to what constitutes an optimal monetary, banking, and exchange-rate regime.

The immediate shock of the 1914 crisis was undoubtedly large, and a deep recession followed that cost Argentina a massive cumulative loss of output. However, even after a recovery from this downturn, the problems of macroeconomic and financial instability in the economy were far from solved. The next part of the book traces the subsequent gradual breakdown of the gold standard in Argentina in the interwar period. We argue that one must view this unfolding drama at several levels to fully understand the tensions unleashed by the radical external regime change in 1914.

At a microeconomic level, the banking system had to cope with new shocks, a lack of insurance, and no real Lender-of-Last-Resort capabilities. Yet, at the same time, it faced a marked increase in the demand for capital and intermediation after the retreat of foreign banks and investors. At a regulatory level, the Banco de la Nación asserted itself more forcefully as a “quasi” Lender of Last Resort, and, by venturing beyond what its own rules permitted, it helped keep a troubled banking system alive. At a macroeconomic level, larger external shocks rattled the economy, and the Conversion Office could do little but follow its prescribed mechanical functions, since it chose to play by its own rules. Finally, the inconsistencies in the whole framework were exposed by the world depression of the 1930s, and the threat of failure in both internal and external convertibility would eventually destroy the entire system.