

## **The Baring Crisis in a Mexican Mirror<sup>1</sup>**

**Barry Eichengreen**  
**University of California, Berkeley**  
**February 1997**

Conventional wisdom has it that the Mexican crisis of 1994-5 was "the first financial crisis of the 21st century." In this paper I argue that it may be better understood as the last financial crisis of the 19th. The crisis in Mexico exhibits striking similarities to the Baring Crisis of 1890, an event that did much to shape modern opinion about the causes and consequences of financial crises and the role for official management.

Parallels between the two episodes are extensive. Just as Mexico was the benchmark for investors in emerging markets in the 1990s (it was the single largest borrower, and the spreads it commanded set the floor for other borrowers), Argentina, the country whose financial difficulties ignited the Baring Crisis, was commended to investors as "The United States of South America." It was the single most important destination for British capital outside the United States and the British Empire. While lending in both periods was encouraged by policy reform and economic development in recipient countries, the wheels of international finance were greased by declining interest rates worldwide, associated with Goschen's debt conversion in the 1880s and recession-induced cuts in interest rates by the Federal Reserve in the 1990s. In both cases investors who had been slow to join the bandwagon climbed on board in the final stages of the boom.

While foreign borrowing was portrayed as financing investment in productive capacity, in both cases capital inflows fueled rising levels of consumption. Foreign capital flowed through

---

<sup>1</sup> Prepared for a festschrift for Albert Fishlow, edited by Nora Lustig and forthcoming from the University of Michigan Press. I thank Carlos Arteta for helpful comments.

the banking system, and bank lending financed purchases of luxury imports as well as capital goods. Governments failed to boost their savings to offset dissaving by the private sector. In both cases powerful opposition existed to the government in power, leaving officials reluctant to tighten monetary and fiscal policy for fear of alienating their core constituencies. Hence, they did little to damp down the impact on the economy of international capital flows.

But increased demand did not automatically elicit increased supply. Investment in capacity took time to translate into improved export performance. In both cases questions arose both about the capacity of the economy to sustain mounting levels of debt. Political shocks (strikes and an incipient coup in Buenos Aires in 1889-90, the Chiapas revolt and Colosio assassination in 1994) then raised doubts about the ability of the government to carry out adjustment. Better-informed investors grew wary significantly in advance of the crisis.

The crisis itself drove the Argentine government, like the Mexican government after it, to the brink of default. The fallout destabilized the banking system. It provoked a major recession. And it spilled over to other countries. In 1995 the Tequila Effect was felt in Argentina, Brazil, Thailand and Hong Kong. In the wake of the Baring Crisis, interest rates rose in Brazil, Uruguay, Venezuela and Turkey. Countries as far afield as Australia and New Zealand found it difficult to access external finance. Thus, the Baring Crisis provides an even more extreme example of the destabilizing dynamics that infected emerging markets a little more than a century later.

At the same time there are important differences between the two episodes. Monetary and fiscal excesses were more clearly evident in Argentina in the 1880s than in Mexico in the 1990s. In Argentina in the 1880s, monetary and fiscal excesses were a principal element in the

crisis; the Mexican Government may not be free of blame, but it in contrast took significant steps in the direction of monetary and fiscal reform. In 1995 the Clinton Administration and the IMF saw the need to help Mexico avert a suspension of debt-service payments. Default on government bonds, they feared, would prompt equity investors to flee, force Mexico to impose comprehensive exchange and capital controls, spread contagiously to other emerging markets, and set back economic reform and liberalization worldwide. But in 1994 there was no single financial institution as exposed as Baring Brothers. In 1890 the fear was for the stability of financial markets in the First World, not the Third. Where the U.S. government's first reaction in 1994 was to assemble financial aid for Mexico, in 1890 the Bank of England and the British Government arranged a rescue fund for Baring Brothers, not for Argentina. The assistance offered Argentina was hardly generous, and it was provided by markets, not governments.

Where the Bank of England could make arrangements with other financial institutions before news of Baring's difficulties became public, the 1995 crisis was a very public affair. Unable to induce commercial banks to contribute to the Mexican rescue, the Clinton Administration relied on a larger ratio of public to private funds than had the Bank of England a century before. The capital market being less cohesive and concentrated than in 1890, it found it more difficult to reach an agreement with other governments than had the Bank of England and the British Government.

In a sense, then, the Mexican crisis is both the last financial crisis of the 19th century and the first financial crisis of the 21st. Its implications resemble those of the Baring Crisis insofar as it marks a return to an international market increasingly dominated by bonded debt. But today's international financial today being even more nimble and decentralized than that of the 1880s, it

anticipates the kind of crises that will become increasingly prevalent in the 21st century.

In elaborating these points, I focus on the period leading up to the 1890 crisis. Information on the recent Mexican episode is abundant, and interpretations abound. Hence, I assume that the reader is familiar with the outlines of the Mexican crisis. I concentrate mainly on Argentina in the 1880s, providing just as much information on the Mexican crisis as is needed to place the comparison in relief.

### 1. The Context for Capital Flows

Structural changes significantly improving the prospects for economic growth and development served the backdrop for the surge in foreign investment in both periods. An important precondition for Mexico's return to the international capital market was put in place by its negotiation of a Brady deal, which reduced its debt and exchanged its floating-rate bank debt for bonds. Economic reform then provided the impetus for lending. Policy initiatives included liberalizing international trade, privatizing public enterprises, reducing the size of the government, reforming the tax system, and deregulating and liberalizing domestic markets. The country's application to the GATT and its negotiation of the North American Free Trade Agreement effectively locked in the new regime. The time-profile of the capital inflow that ensued is shown in Figure 1.

Late-19th century Argentina returned to the international market more gradually. None other than Baring Brothers had floated Buenos Aires' first public loans in 1824-5, but these soon lapsed into default and remained there until 1857, when a settlement was reached. Although Barings offered another Argentine loan in 1866, the country's commercial prospects were hardly

growing. Until the 1880s it remained a minor player in the European capital market.

At that point the Argentine government "laid the foundations of the [country's foreign-financed] investment boom..." It secured the Pampas for settlement by waging military campaigns against the Indian population and driving the survivors across the Rio Negro. This opened the way for wheat cultivation, allowing Argentina to become a net exporter of grain. An insurrection in the Province of Buenos Aires was put down in 1879, solidifying the rule of the national authorities. The government reformed the monetary system, replacing the diverse currencies of the provinces with a uniform national money. It put the country on a bimetallic standard in 1881.

In the 1990s trade liberalization in general and NAFTA in particular made it attractive for foreigners to invest in Mexico as a platform for exporting to the United States. Analogous effects were felt by Argentina in the 1880s as a result of sharp falls in ocean freight rates. These increased the attractions of building railroads to link the Pampas to the ports and integrate the country's productive capacity into the world market. The voyage of the Frigorifique in 1876 had just demonstrated the feasibility of carrying chilled meat across the tropics. As late as 1880 Argentina may have still been regarded as "a backward, frontier community, dependent upon the herds of wild and unimproved cattle of the pampas and the growing flocks of sheep," but the decline in ocean freight rates and development of refrigeration did much to transform this perception.

Foreign investment was as integral to the development strategy of the government of

---

<sup>2</sup> Ford (1962), p.87.

<sup>3</sup> Joslin (1963), p.114.

General Julio A. Roca as to that of President Carlos Salinas de Gortari a century later. Roca's government first solicited loans for two state railways, the Central Norte and Andino, in 1881. The provinces competed with one another to establish links to the coast. Buenos Aires borrowed to expand and modernize its port facilities. It invested in urban infrastructure in an effort to transform itself into the "Paris of South America."

Soon Argentina was a major destination for European funds. It attracted as much foreign capital in the course of the 1880s as Brazil, Mexico and Uruguay combined. Half or more of these funds were raised on the London market, although French and German investors also contributed significantly. In 1889 Argentina absorbed 40 to 50 per cent of all British funds invested outside the United Kingdom. Figure 2 shows the pattern of foreign lending that resulted. The comparison with Figure 1 suggests that the surge of capital inflows was larger in relation to trade — and hence in relation to debt servicing capacity — in Argentina in the 1880s than Mexico in the 1990s.

## 2. The Role of Global Financial Conditions

However far-reaching these structural changes in Mexico and Argentina, neither surge of foreign lending can be understood without reference to developments elsewhere in the world. In the early 1990s interest rates were allowed to decline by the Federal Reserve Board in response to a recession in the United States. Lower rates encouraged investors who had previously placed their funds in American markets to seek higher yields abroad and enhanced the credit worthiness of borrowers still servicing significant amounts of floating-rate debt (Eichengreen and Fishlow,

---

<sup>4</sup> Ferns (1960), p.397.

1995). This last effect encouraged borrowers previously unable to access foreign capital to return to international markets. The influence of global monetary conditions is evident in the fact that countries like Peru and Brazil received substantial inflows before stabilizing their inflations or completing Brady-Plan operations.

The 1880s was also a decade of low interest rates, in this case initiated by weak demand (attributed by historians to rising tariffs and falling gold production) and sustained by the slow reaction of central banks. The Bank of England never raised its discount rate above 3 per cent between 1884 and 1888. Low interest rates encouraged investors to look abroad for higher yielding investments. London and Edinburgh were soon "honeycombed with agencies" for collecting money for banks in South America and elsewhere. Just as Calvo, Leiderman and Reinhart (1993) noted that the flow of funds to emerging markets around the world in the early 1990s is only explicable in terms of push factors, John H. Williams (1920) argued that the flow of funds to Australia, South Africa and South America in the 1880s had to be understood in terms of the low rates of interest prevailing in London.

The decline in interest rates was not limited to the British market, conditions in the principal financial centers being yoked together by the operation of the international gold standard. The conversion of the British debt in 1888 by George Joachim Goschen, who sought to

---

<sup>5</sup> Econometric evidence to this effect is presented by Eichengreen, Mody and Patro (1997).

<sup>6</sup> This was especially true in Scotland, where the failure of the City Bank of Glasgow still discouraged residents from holding their deposits in local banks.

<sup>7</sup> Baily (1959), p.272.

<sup>8</sup> Contemporaries saw things the same way: in January 1888 H.G. Anderson of the London and River Plate Bank emphasized the role played "the extremely low rates of interest in London" in the continued flow of funds into Argentina. Joslin (1966), p.121.

reap for the British government the benefits of lower money-market rates, ignited a rise in the prices of French 3 per cent Rentes. This allowed the Prussian government to emit 3 per cent Consols. And it encouraged French and German investors to redouble their search for yield abroad. As a disillusioned Max Wirth put it in 1893, "German investors, at this time, preferred to purchase foreign securities with high rates of interest; and were so imprudent as to be caught by the radiant descriptions of rising wealth in Argentina, and to buy stocks and bonds from this ill-governed republic."

In this way the low interest rates and accommodating monetary policies of the 1880s set in motion a global boom. Low central bank discount rates encouraged joint-stock banks to lend. Bank reserves declined to 10 per cent of liabilities, and commercial banks replenished their reserves by borrowing from the Bank of England and its Continental counterparts.

By 1889 the central banks had had enough. The Bank of England ratcheted up its discount rate from 2 1/2 to 6 per cent over the second half of the year. As was the case when the Federal Reserve Board tightened in 1994, higher interest rates in the financial centers diminished the attractions of foreign securities. Ferns (1960) points to the rise in Bank rate as one factor that made it difficult for Barings to place the \$25 million Buenos Aires Water Supply and Drainage Loan of 1888, the failed issue that precipitated its downfall.

New issues in London on behalf of Argentina fell from L23 million in 1888 to L12 in 1889 and L5 million in 1890. Where new foreign borrowing had exceeded debt service for several years running, the balance was now reversed. For the nation as a whole, service changes

---

<sup>9</sup> Wirth (1893), p.227.

<sup>10</sup> 248, 154 and 45 million gold pesos, respectively.

exceeded foreign borrowing for the first time in 1890. The national government felt the effects even more quickly; its foreign borrowing fell short of its service payments in 1889.

External borrowing by Mexico also fell off in advance of the country's 1994-5 crisis, although the time profile was different. Net external borrowing by the private sector fell off in 1993, net external borrowing by the public sector only in 1994. Overall, the combined capital account of the public and private sectors fell from \$30.5 billion to \$11.6 billion between 1993 and 1994.

This difference in timing suggests that problems of external credit worthiness were more heavily concentrated in the public sector in 1889-90. There is evidence to this effect, as we will see below. But at the same time there existed doubts about the ability of private-sector borrowers to service their external debts. Before considering problems with the public finances, it is worth pausing over the problem of private investments.

### 3. Private Investment and Public Guarantees

Historians have noted the long gestation of the Argentine investments. "...[W]hereas interest payments had to be met at once, it took time to build railways -- and exports grew only after the railways were built." Some two thirds of all British capital invested in Argentina in 1886-9 was devoted to railway construction. In itself this was not unusual; British investors regularly favored railway securities. The economic prospects of a railway line were more easily

---

<sup>11</sup> Williams (1920) p.94. The internal debt of the national government (in gold pesos) was relatively low and falling throughout the period.

<sup>12</sup> International Monetary Fund (1995), p.92.

<sup>13</sup> Joslin (1963), p.120.

assessed than the reputational and organizational assets of a commercial or manufacturing enterprise; hence, railway bonds were particularly attractive to risk-averse investors in an environment of asymmetric information.

Nor was there anything unusual about a concentrated burst in railway construction like that in Argentina in the second half of the 1880s. The United States had experienced similar booms in the mid-1850s, the early 'seventies, and the early 'eighties, each of which was associated with the constellation of factors identified by Simon Kuznets in his studies of long swings. Periods of liberal lending to regions of recent European settlement, Kuznets noted, were also periods of high emigration from the Old World. Immigration created a demand for population-sensitive capital (transportation capital in particular). The 1880s being a decade of high immigration into Argentina, all the preconditions for a Kuznets Cycle upswing and a railway building boom were in place.

Foreigners were encouraged to invest in Argentine railways by the government's interest guarantee. If the revenues generated by the railway were insufficient to service its debts, the government made up the difference. Such guarantees were viewed as essential for attracting

---

<sup>14</sup> Not only in Argentina were railway companies the first major enterprises to access to foreign capital. The same was true in the United States. See inter alia Baskin (1988).

<sup>15</sup> See, inter alia, Kuznets (1930, 1966).

<sup>16</sup> In addition, railroadization may have been stimulated a breakdown of oligopolistic collusion of the sort analyzed by Harley (1982) for the United States. A monopolist who controls the market for transportation services would construct his network at the moment that maximized his total profits. But a company with rivals might commence construction earlier in order to prevent the best routes from being preempted by others. Since the need to "build ahead of demand" reduces profits relative to those of the monopolist, competitors have an incentive to collude in an effort to restrain the temptation to build too early. Sooner or later, however, the temptation will be overwhelming and, the oligopoly break down, resulting in a scramble of construction activity. There is some evidence that just such a scramble broke out in Argentina in the second half of the 1880s, as provincial governments and private parties competed by constructing alternative lines from the interior to the coast. See Ferns (1960), p.410.

foreign capital in an environment of asymmetric information. They were common in the United States (where railway securities were guaranteed by the states and municipalities), in Canada, and throughout the British Empire. Indian railway bonds received a five per cent interest guarantee from the Indian Government and hence "were regarded as perfectly safe; investors included widows, barristers, clergymen, bankers and retired army officers." Accepting the guarantee placed the railway under an obligation to the government; typically it ceded the right to set freight rates. Hence, Argentine railways that achieved profitability sought to regain rate-setting freedom by buying out their guarantees. But some three-quarters of all British investments in Argentine railways circa 1890 were nonetheless in companies covered by the guarantee system.

One can readily see how such a system could give rise to moral hazard. Investors in bonds guaranteed by the government had no need to concern themselves with the profitability of the enterprise; their only worry was the credit worthiness of the government. This freed companies of monitoring by investors, subjecting them to moral hazard. The only agent with an incentive to oversee the railroad's activities was the government itself. To prevent contractors from inflating construction costs, the government specified that the cost per kilometer of constructing the line could not exceed a prescribed amount. But railway companies still had the incentive to raise capital for lines of questionable economic viability so long as they could obtain a guarantee.

Ultimately, then, access to external capital rested on the credit worthiness of the

---

<sup>17</sup> For details on this practice, see Eichengreen (1996).

<sup>18</sup> MacPherson (1955), p.180. Argentina not being under British control, a government guarantee did not confer the same security; hence, Argentina railway bonds still commanded a six or seven per cent interest rate.

<sup>19</sup> Ferns (1960), p.398; Lewis (1977), pp.407-408.

government, to which we now turn.

#### 4. The Public Finances

The state of the Mexican public finances in 1994 is a matter of some dispute. Between 1989-IV and 1993-III, surpluses ran around five per cent of GDP. Although the surplus declined to some three per cent of GDP by late 1993 (and two per cent by late 1994), the published budget was still reassuring. But there existed hidden deficits in the accounts of the development banks, which borrowed on the open market, often abroad, and lent to domestic commercial banks for activities that would have otherwise been undertaken by the government. Leiderman and Thorne (1995) show that the Mexican budget moved into substantial deficit after 1993-IV when the net lending of the development banks is included. Sachs, Tornell and Velasco (1995) object that only the contingent liabilities to the government in the event of losses by the state banks should be included in the fiscal balance, since the development banks borrowed and repaid on commercial terms.

Whatever one's view, there is no question that Mexico's fiscal difficulties in 1993-4 pale in comparison with Argentina's in 1890-1. The Argentine National Government's deficit was more 68 per cent of its expenditure. The provincial governments were in deficit; the deficit of the Province of Buenos Aires was more than two thirds provincial spending. Municipal

---

<sup>20</sup> It is important to observe that, to some extent, this deficit was an endogenous response to the country's ongoing inflation and current depreciation, reflecting delays in collected taxes and the relatively rapid response of expenditure obligations to inflation (the Tanzi-Olivieri effect). Vicente Lopez, finance minister in the second half of 1890, estimated that government revenues had been reduced by 50 per cent in real terms due to inflation (Ferns, 1960, p.456).

<sup>21</sup> Williams (1920), pp.118-119.

governments also financed deficits by borrowing abroad.

When the sorry state of the Argentine public finances became apparent in 1889 and lending to the government fell off, Roca's successor, his brother-in-law Miguel Juarez Celman, sought to boost revenues and cut spending. In October the Congress agreed to cuts in expenditure and began discussing increased taxes on luxury products. But powerful opposition existed to such measures. Support for the government of Juarez Celman derived from wealthy interests who would have suffered from its tax increases. When a new finance minister, Jose Uriburu, proposed raising customs duties by 15 per cent in April 1890, he met a barrage of criticism. Forced to choose between Uriburu and his own supporters -- between "deflation with increased taxes [and] the status quo" -- Juarez Celman opted for inflation, forcing Uriburu to resign.

Austerity threatened to provoke unrest among workers as well. Inflation and currency

---

<sup>22</sup> The growth of state and municipal debts was a consequence of the strategies of none other than Argentina's own foreign bankers. The national government had borrowed heavily in the first half of the decade and experienced financial difficulties when revenues were slow to pick up. In 1885 it sent Carlos Pellegrini, a British-educated former minister of finance (and future president), to negotiate with the bankers. Dr. Pellegrini secured a loan of some L8 million in return for a promise that the National Government would not borrow further without the bankers' approval. In addition, the subset of bankers underwriting the new loan were given a first mortgage on the revenues of the customs houses. But this agreement did not bind the provinces and municipalities, who could and did borrow at will. This response can be understood as a reflection of the still relatively decentralized nature of Argentine political arrangements, compared to other Latin American countries in which the central government virtually monopolized the borrowing function. Marichal notes that 35 of the 39 loans taken out by municipal and provincial governments in the 1880s were Argentine. Ironically, it was often the same foreign financial houses -- Baring Brothers prominent among them -- that had been so insistent about restraints on National Government borrowing who underwrote the issues of the provinces and municipalities. And in the end it was the failure of one such issue, the Buenos Aires Water Supply and Drainage Loan of 1888, that brought Barings down. It has been suggested that Roca and Juarez Celman used the budget to buy political support. Marichal (1989, p.140) asserts that graft and corruption were pervasive in the public sector. Wirth (1893, p.219), in a contemporary account, refers to the fact that "corruption prevailed in government circles." Lauck (1907, p.47) puts the same point more colorfully: "Argentina was honeycombed with corruption. A coterie of politicians and their henchmen had complete control of the national and provincial governments, and under the guise of politics carried on a scramble for loot." Similar statements of course again became fashionable following the Mexican debacle; the index to Oppenheimer (1996) contains 28 separate references to corruption.

<sup>23</sup> Ferns (1960), p.453.

depreciation (discussed in Section 7 below) had already eroded the real incomes of wage earners, leading to strikes among port workers in Buenos Aires in August 1889. In September the employees of railway companies struck, and in October thousands of construction workers in Buenos Aires walked out. Opponents of the government organized a series of protest meetings. In July a coup attempt led by prominent army officers was defeated only after heavy fighting. The National Congress then forced Juarez Celman to resign, replacing him with his vice president, Pellegrini, who formed an emergency cabinet.

The parallels with Mexico are obvious. With an election approaching in 1994, the Salinas Government was reluctant to tighten policy for fear of eroding political support and damaging its successor's electoral prospects. The Colosio assassination and the Chiapas revolt raised questions about its stability, leading investors to wonder whether the government had the capacity to cut spending and raise interest rates. These political shocks made it increasingly difficult for Mexico to borrow on international markets. The same was true of Argentina following the strikes of August 1889 and the abortive coup of April 1890.

## 5. State Banks

In Argentina as in Mexico, much of the action in the budget was hidden in the accounts of the state banks. During Roca's presidency the government's development strategy had centered on the railways, but it shifted the state banks under Juarez Celman after 1886. Provincial banks contracted foreign loans to extend credit to the provincial government and back the emission of notes. According to Williams (1920, p.58), some of these provincial banks were "banks only in name"; their actual function was to secure the foreign finance needed to underwrite the

operations of provincial governments. Some made advances directly to politicians. Williams notes reports that these banks issued false balance sheets and reported nonexistent dividends.

Then there were the national and provincial mortgage banks, which extended loans to large landowners on security of their real estate. The vehicles for these loans were peso-denominated bonds, or *cedulas*. These banks made loans on the security of land in the form not of cash but *cedulas*. The landowner then typically turned around and sold these negotiable bearer bonds to investors for cash. Following the creation of the National Mortgage Bank in 1886, foreign investors in Britain and on the Continent were "seized with a mania for [*cedulas*]. Series after series, from A to P, were issued by the banks and quickly absorbed by credulous Europeans, who were ignorant of the true state of affairs and who argued that the *cedulas* were a better investment than Government bonds for the reason that....they were backed by real estate." Thus, just as institutional investors drew back from Argentina, small investors climbed onto the bandwagon.

Such investors unfortunately knew little about the backing for their securities. For this they relied on the mortgage banks. And the latter were riddled with "encroaching

---

<sup>24</sup> The latter were all under the control of the Province of Buenos Aires.

<sup>25</sup> While the interest on *cedulas* was payable in paper, often they were sold at a substantial discount, so the effective interest rate incorporated a generous premium to compensate for currency depreciation and risk.

<sup>26</sup> The land owner assumed the obligation to make an annual payment to the bank for interest and amortization, while the bank serviced the bonds.

<sup>27</sup> Lauck (1907), p.47.

<sup>28</sup> Indeed, these informational asymmetries can be thought of as the rationale for the creation of the mortgage banks, which were an instrument for monitoring borrowers on behalf of European lenders, applying first-hand knowledge of the value of their land, and pooling the risks of individual loans. The mortgage-company-life-insurance-company connection played the same role in the United States. See Snowden (1995).

nepotism...Loans were allowed less by reason of gold security than as a matter of personal favor."

While the law prohibited loans exceeding 50 per cent of the assessed value of the land offered in mortgage, the face value of a bank's *cedulas* regularly exceeded the market value of the real estate with which they were backed.

*Cedulas* therefore posed a problem for the National Government. There was no foreign financial institution with an interest in supporting the market or the institutions of which they were an obligation. The only entity with any such interest was the government itself, but a collapse in the market for *cedulas* might so aggravate the weakness of the Argentine banking system and increase the contingent liabilities of the government as to threaten the latter's own solvency.

Hence, the Argentine Government sought to prop up the market for *cedulas* by freeing them of exchange risk. In May 1889 it laid before the Congress a plan to purchase paper *cedulas* and issue gold *cedulas*. But with mortgage bonds now effectively denominated in foreign currency, anything that interrupted the flow of foreign exchange receipts, such as a decline in capital inflows, could precipitate a crisis. The government tied itself to the mast, attempting to reassure investors and sustaining the inflow of foreign funds. But as with any strategy of tying oneself to the mast, when the wind blows up there is a danger of getting wet. A disturbance to the flow of foreign exchange could now lead not just to devaluation but to default.

This strategy of issuing foreign-currency-linked debt will be familiar to observers of the recent Mexican crisis. Following the Colosio assassination, the Mexican Government began

---

<sup>29</sup> Wirth (1893), p.219. Or, as John Proctor, quoted in Williams (1920, p.79) put it, "Swamps and salt plains had as good a chance as a flourishing farm, provided the owner were in the political ring."

converting its short-term peso-denominated liabilities into dollar-indexed debt. It issued dollar-linked securities, the now-notorious *tesobonos*, in an attempt to reassure foreign investors wary of devaluation risk. From \$1 billion at the beginning of 1994, the outstanding stock of *tesobonos* reached \$18 billion by December. Thus, the Mexican authorities similarly tied themselves to the mast, issuing foreign-currency-indexed debt as a way of making devaluation unattractive and reassuring investors. When the storm blew up, they too were soaked.

## 6. Consumption and Investment

In both Argentina and Mexico, slow growth created worries about the sustainability of the external position. It led investors to question whether the country could generate the exports and foreign exchange receipts needed to service its debt and whether the government could stomach painful adjustment policies. Mexican economic growth was stagnated after 1992 (Figure 3). Argentine railway receipts per kilometer of track declined from 1884 through 1890 (Figure 4).

The villain in most explanations for the slow growth of these economies is inadequate savings which constrained the level of investment. The Mexican savings rate fell from 19 per cent in 1988 to 17 in 1989-94 and 15 per cent in the second half of the period. (See Figure 5.) Most of the decline was by the private sector; to put the point another way, the capital inflows of the 1990s financed a significant increase in private consumption. Lower interest rates and improved access to foreign capital encouraged the Mexican banks to lend, and they responded by increasing real estate and consumption loans. Consumers may have welcomed these loans

---

<sup>30</sup> Leiderman and Thorne (1995) show that the decline in private saving is less pronounced when the official accounts are corrected for inflation, but their estimates of shift in overall national savings are little different from the official statistics because they also add in a correction for net lending by the development banks. They conclude that Mexico differed from other emerging markets in the 1990s in that capital inflows mainly financed consumption, not investment.

because they had been liquidity-constrained previously, the surge of foreign capital into the Mexican financial system in conjunction with deregulation allowing them to satisfy pent-up demands. Doubts about the permanence of the country's newly liberal tax and import regime may have further encouraged spending on consumer durables to beat expected future tax increases.

Mexico's investment rate rose modestly over the period, from 20.4 per cent in 1988 to 21.9 per cent in 1989-94. The problem is that it did not rise further. Capital imports mainly financed consumption, not investment. There was no way that this allocation of resources could easily generate the foreign exchange needed to service the country's dollar-denominated and dollar-indexed debt.

The rapid increase in kilometers of railway track in service in Argentina in the 1880s points to significant investment. The doubling (in gold pesos) of investment-good imports between 1886 and 1890 is consistent with this conclusion. But there is also reason to think that a substantial portion of the country's externally-accessed resources were actually devoted to consumption. 60 per cent of the increase in imports between 1886 and 1890 took the form of consumption goods (Figure 6). The prices of pastoral goods (the only domestic price index available for the entire period) rose substantially in 1886-89, as if domestic consumption demand was overstimulated (Figure 7). Property sales in 1889 were ten times those of 1886.

We can impute the level of national saving -- investment plus the current account -- by approximating investment with investment-goods imports and measuring the current account as

---

They conclude that a fifth of all capital inflows was used to finance investment, while the rest financed increased consumption.

the trade balance minus debt service. This measure of saving, shown in Figure 8, declines after 1885. In Argentina as in Mexico, it appears that the failure of savings rates to rise in the period of capital inflows set the stage for subsequent difficulties.

## 7. The Exchange Rate and Monetary Policy

The most dramatic contrast between Mexico and Argentina was exchange rate policy. Mexico's problem was partly caused by a policy of pegging the peso which resulted in a growing overvaluation. Mexico's crisis, in contrast, was aggravated by the continuous depreciation of the paper currency which undermined confidence and, ultimately, capital flows.

Mexico in the 1990s was committed to holding its peso in a band against the dollar. Under the system it had operated since November 1991, the ceiling of the band was adjusted by 0.0004 new pesos a day, with the floor remaining constant at 3.0512 new pesos per dollar. In 1994 this produced in a band of approximately plus or minus 6 per cent. Many observers regarded the government's maintenance of this band as the keystone of its policy. Indeed, it was the decision to devalue in December 1994 that sparked the crisis.

How to characterize the stance of monetary policy in the quarters preceding the Mexican crisis is another disputed issue. Rapid growth of monetary aggregates is to be expected in a country that had recently brought down a high inflation and liberalized its financial markets. If the increase reflected a change in money demand, not money supply, it should not have been a source of instability. What now seems clear, however, is that the combined monetary, fiscal and wage policies under which the economy was operating were too accommodating to remain consistent with the exchange rate commitment for long. This became obvious when inflows

slowed in the wake of the Colosio assassination. Hiking interest rates was the obvious way of squaring the circle; it would have damped down the demand for imports and attracted footloose finance. But the Bank of Mexico hesitated to raise rates on the eve of a presidential election, opting instead to finance the current account with reserves. This policy of financing the deficit rather than adjusting only put off the day of reckoning. Thus, even if monetary policy did not initiate the problem, the country's difficulties were compounded by the failure of the central bank to produce a solution.

Monetary policy was more obviously at the root of the Argentine crisis. Bimetallic convertibility had been established during the first period of large-scale capital inflows, and when these fell off in 1884 (due to financial difficulties in London) the gold and silver parities turned out to be too high to be easily sustained. The coinage of silver ceased almost immediately, and the convertibility of paper into gold at par was suspended in 1885. An inspection board appointed by the Executive was created to verify that the banks of issue were not emitting notes excessively. But that board had to cope with pressure for the banks to subsidize a financially-strapped government. An October 1885 decree allowed the Banco Nacional to double its emission of notes. The Bank of the Province of Buenos Aires was permitted to increase its note

---

<sup>31</sup> The Bank of Mexico has argued that the policy of financing should have been sustainable, absent the events of December, insofar as the loss of investor confidence caused by the Colosio assassination was temporary. Once it had passed and confidence returned, the prevailing level of interest rates should again have been consistent with balance-of-payments equilibrium. Sachs, Tornell and Velasco (1995) dispute this view, arguing that the discrete decline in Mexican reserves in the second quarter disguises a secular deterioration in the central bank's position that required permanent adjustment to render the exchange rate band defensible.

<sup>32</sup> Contemporaries referred to the problem of long gestation periods: that railway development, hampered by construction lags and a shortage of rolling stock was slow to translate into increased commodity exports. See Ferns (1960), p.402.

<sup>33</sup> Gold convertibility was not restored until the early 20th century.

issue in December 1886. In all, the note circulation rose from 62 million paper pesos in 1884 to 75 million in 1885 and 89 million in 1886. As in Mexico in the 1990s, the demand for money rose strongly with the economy growing at a rapid rate. Even so, demand failed to keep pace with supply, and the price of gold in terms of pesos rose from par in 1884 to a premium of 37 per cent in 1885 and 39 per cent in 1886 (see Figure 4).

The real break with stability came in 1887, however, when the Free Banking Law was passed. This law was an effort to free other provinces from their dependence on the banks of the Province of Buenos Aires. Free banks were allowed to emit notes backed by government bonds, which they purchased using funds borrowed abroad. The fact that foreign capital flowed through the banking system magnified its impact on aggregate demand: it encouraged public spending (since it allowed the government sell bonds and replenished its reserves); it also financed spending by the recipients of the banks' note emissions.

The aggregate-demand effects were even greater to the extent that the Free Banking Law was inadequately enforced. Sometimes payment for guarantee bonds was deferred. Many banks made no payment at all. In all, the banks paid only 80 million pesos in gold to secure 200 million gold pesos of government bonds and issue 200 million gold pesos' worth of paper currency. As foreign capital flowed into the Argentine banking system and the authorities looked the other way, note issue rose by 38 per cent in 1888, 26 per cent in 1889, and 49 per cent in 1890. This policy had a predictable effect on the exchange rate, which rose by 10 per cent in

---

<sup>34</sup> Joslin (1963), p.119.

<sup>35</sup> It is revealing that the Bank of Cordoba, Celman's province, was among the worst offenders: it issued more than 33 million pesos of notes where its legal maximum was only 8 million.

1888, 29 per cent in 1889, and 31 per cent in 1890.

Inflation benefitted powerful interests. Large landowners had borrowed in *cedulas* which were repayable in paper. The banks benefitted from a regulatory regime that allowed them to emit additional notes. The provincial and national governments benefited from the activities of their captive banks. The only significant objections came from workers whose wages did not keep up with inflation. But most workers lacked the market power of the dockers who brought the Port of Buenos Aires to a halt in the summer of 1889.

#### 8. The Outbreak of Crisis

In neither 1890 nor 1994 was a crisis totally unanticipated. More than a year in advance of December 1994, Calvo, Leiderman and Reinhart (1993) had warned that financial transfers to Latin America depended on the level of global interest rates and that a rise in U.S. rates could create serious adjustment problems. Dornbusch and Werner (1994) argued that inflation and slow growth since 1991 had rendered the peso overvalued, implying the need for devaluation if a crisis was to be averted. (See Figure 9.) Still, there existed no consensus on the extent of the problem or the policies required to address it.

As early as 1886 there were fears for the stability of the Argentine finances. Already that year it was suggested that Barings was lending to the government mainly to support the value of Argentine securities. H.G. Anderson of the London and River Plate Bank warned of a crisis as

---

<sup>36</sup> The figures quoted are for the gold premium, which is not precisely the exchange rate against sterling insofar as that currency also fluctuated within the gold points.

<sup>37</sup> Joslin (1966), p.121. Wary European investors demanded that interest on its new six per cent loan be paid in gold rather than be guaranteed by the revenues of the customs houses. Wirth (1893), p.218.

early as November 1887.

The onset of serious difficulties was marked by the failure of the Buenos Aires Water Supply and Drainage Company Loan, first floated in November 1888. The bulk of this issue was left with the syndicators, notably Baring Brothers. The head office of the London and River Plate Bank, another member of the syndicate, was led to conclude that "[t]he market has had enough of Argentine issues."

Just as the Mexican government expended reserves to defer adjustment in 1994, the Argentine government did so in 1889-90. In the spring of 1889 it became apparent that the wheat crop and the attempt to float a Conversion Loan had failed. The government employed sales of bullion and fresh borrowing in Europe to limit the currency's depreciation and maintain the liquidity of financial markets in the face of a weakening banking system. In May it released 5 million pesos of gold, using bullion it had acquired in payment for bonds guaranteeing note emissions. The Free Banking Law having required the Banco Nacional to retain these funds until January 1890, this posed a clear threat to Argentina's international credit standing.

By March 1890 the Banco Nacional, its reserves exhausted, was rapidly approaching bankruptcy. In June it warned Barings that it would be unable to meet the coming instalment on the Argentine loans. The government sought to raise funds by selling the state railways, including the remaining publicly-owned branches of the Andino and Central Norte lines. To recapitalize his bankrupt provincial bank, the governor of the Province of Buenos Aires ordered the sale of the Ferrocarril Oeste. This led to protest meetings in the capital, the failed coup of

---

<sup>38</sup> He noted an exodus of flight capital to Uruguay. But it is also true that Anderson's bank participated with Barings in the syndicate that underwrote the ill-fated 1888 Water and Drainage Loan. Joslin (1966), p.121.

<sup>39</sup> Joslin (1966), p.122.

July, and Juarez Celman's resignation. The new Pellegrini Government announced a plan to restrain borrowing by the provinces and municipalities and to assume responsibility for municipal and provincial debts. It attempted to restore investor confidence by raising duties on imported consumption goods (while cutting those on machinery and equipment). A five per cent tax on beef, hides, wool and tallow was imposed. A tax of 7 per cent was levied on all premiums collected by foreign insurance companies. Dr. Vittorino de La Plaza, the noted financial expert, was dispatched to London to negotiate a one-year moratorium on the foreign debt in the form of a new \$20 million five per cent loan.

De La Plaza had only begun his talks when the Baring Crisis broke. Barings was still saddled with the ill-fated Buenos Aires Water Supply and Drainage Loan. The market for its securities was depressed and illiquid. It had already been forced to borrow substantial sums to meet its obligations. Its credit lines exhausted, management made the extent of its difficulties known to the Bank of England on the weekend of November 8-9. The Bank estimated that Barings needed L4 million to meet its immediate obligations and offered to contribute L1 million if the government did the same. The Chancellor, Goschen, preferred a plan that did not involve the government directly. The Bank reluctantly consented to start the rescue fund without a matching contribution by the government once the latter agreed to share any losses the Bank incurred in its first 24 hours of operation. To ensure that the gold reserve ratio would not be

---

<sup>40</sup> The public outcry resembled that which would have occurred in Mexico in 1995 when spokesmen for the markets suggested that the Zedillo Government sell off Pemex to restore its credit.

<sup>41</sup> In addition, the government announced the end to all further railway guarantees and imposed a two per cent tax on the deposits of foreign banks. This last measure was hardly one that would have reassured foreign investors. But there are interesting parallels with the kind of measures used by countries like Chile and Brazil in the 1990s to limit their dependence on capital inflows.

violated by any injection of credit, Rothschilds negotiated a L3 million gold loan from the Bank of France against Treasury bills and William Lidderdale of the Bank of England obtained half that sum from Russia (Pressnell 1968). The Bank's L1 million was quickly matched by L3 million from the major financial houses. In little more than a week, the contributions of the joint-stock banks had topped up the fund to L18 million.

What is remarkable in comparison with Mexico is that this rescue was negotiated in secret. While rumors circulated in the City that a leading financial house was in trouble, Barings was not the only name cited, and traders remained ignorant of the extent of its difficulties. The news received by Goschen on Sunday, November 8th became public only the following Friday, by which time the L4 million fund had been assembled. Given the speed with which markets respond and information circulates today, it is inconceivable that a comparable rescue could be carried out in secret.

Barings' negotiations with de la Plaza having collapsed, the financial houses formed the Rothschild Committee (headed by Nathan Rothschild of the financial house of the same name, one of the few in London not to be engaged in business with Argentina) to restructure the country's debts. As a precondition the Committee demanded that the Banco Nacional transfer funds to meet the country's short term debts (many of which were acceptances due Barings) and canceled Barings' obligation to pay out the final tranche of the Water Supply and Drainage Company Loan. In return, the houses represented on the Committee agreed to underwrite a bond issue, the receipts from which would suffice to meet Argentina's remaining debt service for a

---

<sup>42</sup> Clapham (1944, pp.530-531) suggests that some "behind the scenes...knew quite well" what was afoot, and reports that Barings' bills were coming in for discount relatively fast by Wednesday of the week. On the other hand, he reports that the government's own brokers were still uncertain of what was going on.

period of three years. In effect, they agreed to defer the receipt of payment on the country's remaining obligations while protecting themselves from default on securities of which they still held considerable quantities.

The London financiers' German and French colleagues criticized this settlement as excessively generous. The Committee should have imposed harsher terms on Argentina. They complained that they had not received the same treatment as the British institutions whose acceptances Argentina had liquidated in return for receiving its loan. One is reminded of disagreements between the United States and European governments over the terms of financial assistance for Mexico in 1994-5. Then too the Europeans complained that the Americans proposed an excessively generous financial package. But in 1890 the British financial houses still dominated financial markets sufficiently that they could ignore these objections and proceed. In 1995, the U.S. needed the support of the IMF and its G-7 partners and had to reach an accommodation with them (although it retained sufficient financial and political leverage to ultimately carry the day.)

## 9. The Aftermath of Crisis

From the perspective of the London financial community, the crisis was as short as it was sharp. Barings was restored to health and survived another century. The implications for Argentina were not so happy. It endured a banking crisis in January, starting with a run on the Bank of the Province of Buenos Aires. Pellegrini instructed the Banco Nacional to transfer a portion of its reserve to that institution. The Banco Nacional's position having been weakened by the transfer of assets to meet the demands of the Rothschild Committee, the crisis predictably

spread there. Both banks were placed in liquidation, and by late spring the entire banking system had been infected. Just one bank in Argentina kept its doors open continuously: the Bank of London and the River Plate. While Mexico also experienced serious banking problems, it avoided a banking crisis through financial assistance underwritten by U.S. and IMF loans.

In both Mexico and Argentina the crisis caused a major shift in the current account. Mexico, its reserves depleted and capital inflows tailing off, had to boost exports and cut imports sufficiently to eliminate a current account deficit of 8 per cent of GDP. Argentina had to eliminate a trade deficit of 50 million gold pesos. In Mexico this was done mainly by increasingly the value of exports (although imports declined as well). In Argentina, in contrast, exports (in gold pesos) remained flat through 1895. (See Figure 2 above.) The entire adjustment had to be accomplished by compressing imports, which depressed the economy for a considerable period. Railway receipts continued to decline through 1892, suggesting that recovery only set in two and more years after the crisis. Investment imports rose only marginally through the end of the 1890s, suggesting that such recovery was relatively feeble.

Given this evidence of distress, the Argentine Government was able to modify the terms of the moratorium loan in 1893. Sinking fund payments on most of the country's external obligations were deferred for a decade. Given this radical restructuring of debt contracts, foreigners remained understandably reluctant to lend. Argentina remained a net capital exporter through the end of the century.

In comparison, Mexico recovered more quickly from its crisis. Exports are booming,

---

<sup>43</sup> Joslin (1966, p.124) attributes this to the fact that the bank's directors anticipated the crisis and built up tremendous reserves, ignoring complaints from the shareholders! The balance sheet for 1889 showed cash as fully 50 per cent of total liabilities to customers on current and deposit accounts.

especially those of sectors engaged in assembly operations for the U.S. market, although the home-goods sector remains depressed. While GDP remains below pre-crisis levels at the time of writing, the economy is expanding at respectable rates. In part, the greater severity of the Argentine crisis reflects the greater imbalance in the stance of monetary and fiscal policies and the more difficult subsequent adjustment; in part it reflects the more extensive support Mexico received from foreign governments, which helped to stabilize the domestic financial system and restore the confidence of foreign investors. More work (and accumulation of evidence on Mexico's recovery) will be needed to assign weights to the relative importance of these factors.

## 10. Conclusion

In discussing another earlier crisis, Mexico in 1982, Fishlow (1986) comments that observers are "too much struck by the novelty of the event." While the Mexican crisis of 1994-5 differs from its predecessor in important respects, Fishlow's insight remains valid. The recent crisis bears a striking resemblance to earlier lending booms and busts in bond-based capital markets. There are striking parallels with lending to Argentina in the 1880s and the Baring Crisis of 1890. These include the enthusiastic reaction of investors to the combination of low interest rates in the financial centers and economic reform in the developing world. They extend to the role of state banks in accentuating the impact of foreign capital on the domestic economy and of political weakness in hamstringing the government's management efforts.

The obvious difference between the two episodes is the response of the official community. The Bank-of-England-led rescue of Baring Brothers in 1890 was designed to secure the stability of the London market; only secondarily was there any concern with the plight of

Argentina. The U.S.- and IMF-led rescue in 1995 was concerned first and foremost with the stability of the Mexican economy and its financial system; congressional insinuations notwithstanding, it was prompted only secondarily by concern for Wall Street institutions with positions in Mexico (DeLong, DeLong and Robinson, 1996). In part the difference reflects the even more decentralized and diversified nature of lending to emerging markets today, when few financial institutions in the advanced industrial countries are as exposed to individual emerging markets as Baring Brothers was exposed to Argentina in 1890. In part it reflects the proximity of Mexico to its leading creditor, the United States, and the political capital Washington, D.C. has invested in reform south of the border.

The comparison between 1890 and 1994-5 underscores just how difficult it has become to arrange financial rescues. It is hard to imagine that a fund like that amassed by the Bank of England in 1890 could again be assembled in secret before panic sales of securities had compounded the problem. It is hard to imagine that agreement could be reached among the governments of leading industrial countries as quickly as agreement was reached among the leading financial houses of London. Capital markets have grown even more decentralized and multinational than in 1890. U.S. dominance no longer matches that enjoyed by Britain a century ago. Managing future Mexicos will require cooperation among G-10 governments and multilateral institutions. While the accelerated response procedures recently adopted by the IMF and the decision to double the General Arrangements to Borrow are steps in the right direction, there remain real questions of whether they go far enough.

---

<sup>44</sup> As argued by Eichengreen and Portes (1996).

## References

- Bailey, J.D. (1959), "Australian Borrowing in Scotland in the Nineteenth Century," Economic History Review (sec. ser.) 12, pp.268-279.
- Baskin, Jonathan B. (1988), "The Development of Corporate Financial Markets in Britain and the United States, 1600-1914: Overcoming Asymmetric Information," Business History Review 62, pp.199-237.
- Boehm, E.A. (1971), Prosperity and Depression in Australia 1887-1897, Oxford: Clarendon Press.
- Calvo, Guillermo, Leo Leiderman and Carmen Reinhart (1993), "Capital Inflows and Real Exchange Rate Appreciation in Latin America," Staff Papers 30, pp.108-151.
- Clapham, Sir John (1944), The Bank of England: A History, Cambridge: Cambridge University Press.
- DeLong, J. Bradford, James DeLong and Sherman Robinson (1996), "The Case for Mexico's Rescue," Foreign Affairs 75, no.3, pp.8-15.
- Dornbusch, Rudiger, and Alejandro Werner (1994), "Mexico: Stabilization, Reform, and No Growth," Brookings Papers on Economic Activity 1, pp.253-297.
- Eichengreen, Barry (1996), "Financing Infrastructure in Developing Countries: Lessons from the Railway Age," in Ashoka Mody (ed.), Infrastructure Delivery: Private Initiative and the Public Good, Washington, D.C.: EDI Development Studies, The World Bank, pp.107-128.
- Eichengreen, Barry and Albert Fishlow (1995), "Contending with Capital Flows: What is Different About the 1990s?" Occasional Paper, Council on Foreign Relations.
- Eichengreen, Barry, Ashoka Mody and Dilip Kumar Patro (1997), "Asset Pricing in International Bond Markets: The Determinations of Market Access and Spreads," unpublished manuscript, University of California, Berkeley, World Bank, and University of Maryland.
- Eichengreen, Barry and Richard Portes (1996), "Managing the Next Mexico," in Peter Kenen (ed.), "From Halifax to Lyons: What has Been Done About Crisis Management," Essays in International Finance no. 200, International Finance Section, Department of Economics, Princeton University (October).
- Ferns, H.S. (1960), Britain and Argentina in the Nineteenth Century, Oxford: Clarendon Press.
- Fishlow, Albert (1986), "Lessons from the Past: Capital Markets During the 19th Century and the Interwar Period," in Miles Kahler (ed.), The Politics of International Debt, Ithaca, N.Y.: Cornell

University Press, pp.37-93.

Ford, A.G. (1956), "Argentina and the Baring Crisis of 1890," Oxford Economic Papers 8, pp.127-150.

Ford, A.G. (1962), The Gold Standard 1880-1914: Britain and Argentina, Oxford: Clarendon Press.

Harley, C. Knick (1982), "Oligopoly Strategy and the Timing of Railroad Construction," Journal of Economic History 42, pp.797-828.

International Monetary Fund (1995), International Financial Statistics, Washington, D.C.: IMF (May).

Joslin, David (1963), A Century of Banking in Latin America, London: Oxford University Press.

Kuznets, Simon (1930), Secular Movements in Production and Prices, New York: Houghton Mifflin.

Kuznets, Simon (1966), Modern Economic Growth: Rate, Structure and Spread, New Haven: Yale University Press.

Lauck, W. Jett (1907), The Causes of the Panic of 1893, Boston and New York: Houghton, Mifflin and Company.

Lawson, W.R. (1891), "Gaucho Banking," Bankers' Magazine I, p.33.

Leiderman, Leonardo and Alfredo Thorne (1995), "Mexico's 1994 Crisis and its Aftermath: Is the Worst Over?" unpublished manuscript, Tel Aviv University and J.P. Morgan, Mexico.

Lewis, Colin (1977), "British Railway Companies and the Argentine Government," in D.C.M. Platt (ed), Business Imperialism 1840-1930, Oxford: Clarendon Press, pp.395-428.

MacPherson, W.J. (1955), "Investment in Indian Railways, 1845-1875," Economic History Review 8, pp.177-186.

Marichal, Carlos (1989), A Century of Debt Crises in Latin America, Princeton: Princeton University Press.

Oppenheimer, Andres (1996), Bordering on Chaos: Guerillas, Stockbrokers, Politicians and Mexico's Road to Prosperity, Boston: Little, Brown.

Pressnell, L.S. (1968), "Gold Reserves, Banking Reserves, and the Baring Crisis of 1890," in C.R. Whittlesey and J.S.G. Wilson (eds), Essays in Money and Banking in Honour of R.S.

Sayers, Oxford: Oxford University Press, pp.167-228.

Sachs, Jeffrey, Aaron Tornell and Andres Velasco (1995), "The Collapse of the Mexican Peso: What Have We Learned?" Economic Policy 22, pp.15-56.

Spinner, Thomas J. (1973), George Joachim Goschen, Cambridge: Cambridge University Press.

Snowden, Kenneth A. (1995), "The Evolution of Interregional Mortgage Lending Channels, 1870-1914: The Life Insurance-Mortgage Company Connection," in Naomi R. Lamoreaux and Daniel M.G. Raff (eds), Coordination and Information: Historical Perspectives on the Organization of Enterprise, Chicago: University of Chicago Press, pp.209-256.

Williams, John H. (1920), Argentine International Trade Under Inconvertible Paper Money 1880-1900, Cambridge, Mass.: Harvard University Press.

Wirth, Max (1893), "The Crisis of 1890," Journal of Political Economy, pp.214-235.