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Reserve System. Victoria Geyfman provided excellent research assistance.

ABSTRACT

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From 1900 to 1935, Argentina evolved from an economy highly dependent on external, primarily British, finance to one more nearly self-sufficient. We examine the failure of domestic finance to adequately fill the void left by the decline of London and the breakdown of the world financial system in the interwar period, when neither the Buenos Aires Bolsa nor the private domestic banks developed rapidly enough to fully replace British investors as efficient channels for financing private investment. One consequence is that Argentine investable funds were increasingly concentrated in a single institution, the Banco de la Nacion Argentina (BNA), creating a lopsided financial structure that was vulnerable to rent seeking and to authoritarian capture. Nevertheless, several measures, including gold reserves, interest rates, money supply, bank credit, and the market capitalization of domestic corporations, attest to the very high level of financial development achieved by Argentina.

BANKING AND FINANCE IN ARGENTINA IN THE PERIOD 1900-35

Introduction

Globalization and financial openness were defining themes of the world economy in the last decade of the 20th century, much as they were in the first decade. Indeed, from 1900 to 1913, international financial flows in relationship to the size of the world economy were larger than they are today.

In the wake of the East Asian financial crisis of 1997-98, however, economists and policymakers have been questioning the value of the unhindered flow of international finance. In particular, some have argued that such financial flows can destabilize domestic economies, as overseas investors rush into emerging markets and as quickly rush out, exacerbating both booms and downturns.

This article focuses on a crucial stage in Argentine financial development, the period from 1900 to 1935, as Argentina evolved from an economy highly dependent on external, primarily British, finance to one more nearly self-sufficient. This period permits a detailed case study of the consequences, for one country that was highly dependent on foreign finance, of the breakdown in the international financial system. Moreover, at least since Taylor's seminal paper (1992), this has been an important area of research for Argentina, so that data and analyses are, while still incomplete, comparatively well developed. We thus are able to build on the work of Taylor (1992), della Paolera and Taylor (1998, 1999), and Nakamura and Zarazaga (1998), to examine the failure of domestic finance to adequately fill the void left by the decline of London and the breakdown of the gold standard world financial system in the interwar period. In

addition, we extend the statistical series on the Buenos Aires Bolsa in Nakamura and Zarazaga with data from 1931 to 1935.

The story that we tell is one in which neither the Buenos Aires Bolsa nor the private domestic banks developed rapidly enough to fully replace the British investors as efficient channels for financing private investment. One consequence is that Argentine investable funds were increasingly concentrated in a single institution, the Banco de la Nacion Argentina (BNA), creating a lopsided financial structure that was vulnerable to rent seeking and to authoritarian capture. Despite this weakness, we should remain aware of the very impressive level of development that Argentina did achieve during this period. Several measures, including gold reserves, interest rates, money supply, bank credit, and the market capitalization of domestic corporations, attest to the vibrancy of Argentine financial development.

In his pathbreaking article, Taylor (1992) used the example of Argentine economic divergence from the mainstream to argue that Argentina's financial dependence on Great Britain in the early years of the century was a counterexample to the notion that foreign investment can jump-start prosperity. He showed that Argentine financial dependence and its demographic profile made it vulnerable to the decline of British financial leadership. Della Paolera and Taylor (1998, 1999) pointedly analyze the decline of private banking relative to the quasi-public Banco de la Nacion Argentina as a crucial element in the failure of Argentina's response to the challenge of British financial decline.

In the international arena, financial leadership after the Belle Epoque passed from London to New York. This decline not only tended to raise world interest rates, favoring savers over borrowers, but it also deprived Argentina of the benefit of British knowledge of Argentine

economic investment opportunities. Nakamura and Zarazaga (1998) and Taylor (2000) document the improved *relative* reception of large Argentine issues in the 1920s, so that Argentina was not, as an aggregate, deprived of access to international finance.

But in a period of creative destruction such as occurred in the early decades of the century, the ability of financial intermediaries to make fine-grained determinations about capital allocation can be crucial to the long-run success of economic enterprise. While the United States was willing to take over the British role of investing in the official bonds of Argentina and of Buenos Aires, and indeed did so at rates below those that would have been on offer in London, it did not step into a similar role for direct private investment.

A second theme in this paper is thus the development of domestic alternatives to international financial investors. The Buenos Aires Bolsa, domestic private banks, and the BNA were all channels for directing domestic savings into private investment. Of the three, as we shall see, only the BNA was able to rise in importance over the entire course of the period we investigate. As a quasi-public entity, the BNA was in a strong position to provide inside money to the Argentine economy, but it was probably not nearly as appropriate a provider of private investment finance.

Indeed, a recurrent question in economics has been the relative economic importance of the two sides of the banking ledger – loans on the asset side and deposits on the liability side. A long tradition of monetarism has focused on the importance of the stability of the growth of the money stock as a key determinant of the efficiency of economic regimes (for example, Friedman and Schwartz, 1963.) From this perspective, the liability side of the banking ledger is of key macroeconomic significance. On the other hand, at least since Bagehot (1920) and Schumpeter

(1934), economists have argued that the allocation of business finance has been a key contribution of the development of the banking system, thereby emphasizing the asset side of the banking ledger.

The policy relevance of this issue has risen rather than diminished over the years, as economic theory has come to play an ever more decisive role in debates over public policy. For example, if monetary and price stability are crucial prerequisites of development, and problems of credibility and intertemporal consistency of behavior are paramount, then the development of a regime such as adherence to a gold standard, a currency board, or dollarization may cut through knotty problems of institutional development. But if the efficient allocation of private finance is seen to be crucial to economic growth, then the development of legal and financial institutions that encourage the growth of private monitoring intermediaries like commercial banks and liquidity-enhancing markets like stock exchanges cannot be short-circuited.

In this paper, we seek to discuss Argentine financial development as seen through the lens of its stock market, by examining in some detail the monthly stock returns of the banking and nonbanking sectors of Argentina, as well as examining some basic banking balance-sheet data.

One motivation to following stock returns is that they are less subject to the serious measurement and methodological issues that arise on the reconstruction of the national accounts of the time and which seem to have blurred the debate with potentially conflicting stories.[1]

[1] For instance, according to the internationally comparable figures compiled by Maddison (1995), the hopes that Argentina would resume the fast 3 percent annual growth rate in per capita terms that the country had experienced in the period 1900-13 did materialize, since the equivalent growth rate for the period 1918-1829 was, on average, around 4 percent, even higher than before the Great War. By contrast, a recent revision of the national accounts of the time by Cortés Conde (1994) suggests that growth did slow down after 1914-18.

Perhaps more important, a look at the relative valuation of stocks in different sectors of the economy may provide some useful insights into the microeconomic details of the Argentinean development process that might escape the scrutiny of the usual macroeconomic aggregates.

Our data show, for example, that the domestic private banking sector of Argentina seems to have been struggling even before the Great War, while the industrial sector initiated a steady expansion right after it. We argue, in detail, that the banking crisis of 1912-14 played a large role in weakening the private banks in Argentina, and that this weakness contributed to the excessive development of the quasi-public Bank of the Nation. In turn, the lopsided development of Argentine finance made it vulnerable to the political economic chicanery described in della Paolera and Taylor (1999).

Judging by the behavior of banks' stock prices and returns, the markets do not seem to have been particularly optimistic about the prospects of domestic banks after the Great War, perhaps an early warning of the massive bailout that would have to be engineered in 1935, under the auspices of the newly founded central bank, with characteristics that, in the view of della Paolera and Taylor (1999), are reminiscent of the bailout implemented more recently in East Asia, after the 1997-98 crisis.

It is unclear, however, why financial resources in Argentina were not channeled through institutional mechanisms other than banks. Why did the stock market remain relatively small during a period of rapid economic expansion? Was the regulatory body regarding corporate finance or its legal framework important impediments to a more solid development of Argentinean domestic capital markets? Did the fact that the London Stock Exchange listed the

most important Argentine issues inhibit the development of the Buenos Aires Bolsa? These are urgent questions whose answers remain relevant to today's economic and financial debates.

Section I. **Analytical Framework**

At least since Schumpeter, economic growth has been associated with financial development. One theoretical strand in the literature has placed the efficient working of delegated monitors at the center of our understanding of financial intermediation (Diamond, 1984, and Diamond and Dybvig, 1983). In a more nuanced view of the role of banks, private banks are privileged as delegated monitors because their crucial role in the transactions mechanism gives them a heightened ability to monitor credits (Black, 1975, Fama, 1985). As such, public provision of deposit insurance that protects private banks from destabilizing runs may be preferable, despite the moral hazard problems it may engender, to narrow banks that are barred from making risky commercial advances. As Mester, et al. (2001) show, commercial banks do have access to information from checking accounts that is valuable in monitoring borrower activity.

This "credit" view of banking's role in development has been emphasized for Argentina by della Paolera and Taylor, 1998, in which they point out that private banking was sharply curtailed during the crucial decade of the 1920s in the wake of the 1913-14 crisis. Below, we take a modest further step toward the important task of analyzing that crucial crisis. In particular, we point out that the Banco de la Nacion's quasi-official status may have aided it vis a vis private banks that lacked deposit protection.

King and Levine (1993) identify bank credit (loans by banks and other deposit-taking institutions) and stock turnover rate as key financial variables that measure the ability of a financial system to abet the economic development of a country. Levine and Zervos (1998) use bank credit and stock capitalization as indicators. We use these variables to frame a more detailed narrative of Argentine financial and economic development in the first third of the 20th century.

In this paper, we have generally used the United States as our basis for comparison with Argentine financial development. Arguably, the basis for comparison could be other small settler countries such as Canada and Australia, rather than the outsized United States. But Taylor (1992) points out that Canada and Australia, also closely tied financially to the London capital markets, were also poor performers in the interwar period. Because the United States, given its large size, was naturally more autarchic than other settler countries, it is a potentially more telling comparison.

Section II. The World Capital Market and Argentine Finance

During the Belle Epoque, Argentina successfully joined the world on the gold standard (Ford, 1962, della Paolera, 1988). Argentina provided for gold redemption and currency stability in the wake of the Baring crisis by setting up two institutions, the Currency Board (Caja de Conversion) and the Bank of the Nation (Banco de la Nacion Argentina). As described in della Paolera and Taylor, 1999, the former was responsible for external convertibility and the maintenance of the gold standard, while the latter dealt with inside money, engaged in normal commercial banking operations, yet also was the state's bank. For a substantial period of time,

these two institutions operated admirably. Unfortunately, a weakness in the system eventually emerged. The BNA – in two steps, first in the banking crisis of 1913-14 and then in the banking crisis of 1929 – bailed out bankrupt private domestic banks and, in the process, itself succumbed and was folded into the newly created central bank in 1935.

This institutional setup enabled Argentina to attract and hold a large proportion of the world's gold for a country of its size. At the end of 1913, the total world stock of gold, according to the *Economist*, cited in Keynes (1930), was 1.579 billion pounds sterling, of which 965 million pounds was in central banks and treasuries. According to the *Economist*, the gold stock of Argentina, including gold in circulation, was 59 million pounds sterling, of which 55 million pounds was held in the Caja de Conversion (Caja) and the BNA. Thus Argentina had some 3.7 percent of the world's monetary gold and 5.7 percent of the gold held in the world's central banks and treasuries. Since, according to Maddison, Argentina's economy represented about 1.2 percent of the world's output, and 2.8 percent of the world's exports, these are impressive figures. The figures in the *Economist* are notable because they represented the facts as known to the business community of the time: it was evident to market participants that Argentina, at the end of the Belle Epoque, was a considerable figure on world markets. Moreover, as World War I began, even more gold entered the country to be held by foreign delegations to Argentina. At the war's end, foreign legations held 117 million gold pesos (23 million pounds sterling) in reserves.

According to Baiocco (1937), in December 1913, the gold reserves in the country (oro visible) were 287.39 million gold pesos, with 233.45 in the Caja de Conversion, 32.27 in the Banco de la Nacion (that is, the Caja and BNA held the equivalent of 53 million pounds, some 4

percent less than the *Economist*'s figure), 18.73 in foreign banks, and a total of 53.94 in banks, implying 2.94 in other private banks. The numbers are close enough: in the first six months of 1913, 43 million gold pesos had flowed into the Caja, and then 33 million had fled back out in the next six; given this instability, a 4 percent "miss" may be attributable to small differences in accounting.

But as Table 1, column 4, shows, throughout the period from 1913 to 1928 Argentina held an enviable fraction of the world's gold, one that was more than ample given the size of its economy and trade -- almost always between 4 and 6 percent. [2] Argentina's ability to maintain a substantial horde of gold no doubt bolstered its reputation on world financial markets.

Table 1, column 1, shows rates of return from long-term Argentine debt instruments, primarily the 1886-87 5 percent custom loan regularly quoted on the London stock exchange market.[3] This "custom loan" was secured by Argentine custom receipts and was the largest loan ever floated abroad by the Argentine government. Columns 2 and 3 show rates of return of British consols and on US 20-year corporate bonds. Broadly speaking, world and Argentine interest rates were somewhat higher in the period after 1922 than before 1914. From 1901 to 1913, the custom loan yielded just under 5.0 percent, and from 1922 to 1928 it yielded an identical amount. (Similarly, in the earlier period the prime rate averaged 6.3 percent and in the later 6.9 percent.) Over the period, the spread between the custom loan and the British consol narrowed.

[2] These data come from a third source, the U.S. Federal Reserve's statistics from 1943. They generally agree with Baiocco within about 10 percent.

[3] From 1900 to 1913, della Paolera, (1988), from 1914 to 1919, the Boletin de Bolsa de Commercios, and from June 1920 to June 1935 (the *Economist*, last issue in June of each year). For 1931 to 1935, the rate quoted is for the Argentine 4 percent rescission loan, maturing in 1952. The rates for the rescission loan and the custom loan are almost identical in 1929 and 1930, when they are quoted side by side.

Thus, while it is evident that there was some upward drift in the real interest rate in Argentina, its magnitude appears small and in keeping with changes in the world marketplace, rather than suggesting an abrupt change in Buenos Aires's role therein. For example, in New York, 20-year corporate bonds yielded between 3 1/4 and 4 percent from 1901 to 1913, while they yielded between 4 and 5 percent from 1922 to 1929. Indeed, if anything, we see that the British consol rate was drifting higher with respect to long-term rates for US issues, while the Argentine custom loan and prime rate were holding their own. Thus the transition from British to US dominance of the capital markets appears to have been a relatively smooth one for Argentine borrowing, in so far as sovereign, well-secured borrowing is concerned.

Moreover, as documented in Taylor (2000) although the risk premium on Argentine debt expanded considerably in 1931 and 1932, it narrowed again in 1934 and 1935, with Argentine spreads vis a vis US corporate debt being quite low. This is remarkable given that the gold standard has been abandoned all around. In 1934, the spread between Argentine debt and US debt was less than in 1912!

On the other hand, it remained the case that international financial flows in the 1920s and 1930s were much smaller than they had been, as Taylor (2000) also documents. The question that arises is how well domestic financial markets were able to replace these financial flows. The aggregate figures argue strongly that Argentine average saving rates were low in the first decades of the 20th century. But domestic saving is calculated as a residual and thus is subject to considerable error. So while it appears likely that domestic savings were inadequate for Argentine economic development, there is value in examining to what extent quantitative characteristics of financial institutions in Argentina resemble those in countries with relatively

well-developed ones. It is to this task that we now turn, first to the stock market, and then to the banking system.

Section III. Equity Trading on the Buenos Aires Bolsa, 1900-1935

This paper documents one step in a long-term project to construct a complete series of prices and dividends for all the firms that quoted on the Bolsa de Comercio de Buenos Aires (Buenos Aires stock exchange) in the 20th century. As of the current time, our data stretches from 1900 to 1935.

We document the fact that new listings and the overall capitalization of the Bolsa were relatively high, compared to gross domestic product, for an emerging market. However, the overall rate of transactions was rather low. In part, this may be due to the fact that the largest Argentine companies, the railroads, were listed on the London stock exchange rather than the Bolsa; these shares would naturally have had the highest rate of trading. A slow rate of turnover means that the stock market was less liquid and that the ability of the stock market to attract fresh capital to entrepreneurs was weakened. In addition, a low quantity of transactions means that brokerage commissions were also low, with the implication that the Bolsa was not an important source of income for equity brokers. As a result, news and analysis of Argentine equities would not have the monetary value that they would have had on a more active exchange.

On the other hand, by listing on the London stock exchange the railroads had access to large quantities of capital at low rates and were thus able to efficiently finance growth. As the development of the pampas and the port city of Buenos Aires as well as most industry in Argentina was the direct beneficiary of railroad development, the tradeoff was no doubt to the

country's overall advantage, as Lewis has emphasized. Moreover, the active attention paid to Argentine affairs that the railroads inspired also aided other Argentine issues on the London market, like the custom loan. Thus while the fact that the most important Argentine securities traded there has implications for the development of the Buenos Aires Bolsa, it by no means suggests that Argentina would have been better off floating them domestically.

Data

Certainly, the collection of the necessary data for this project has proved to be extremely time consuming, suggesting that investors at the time may have faced concerns regarding the transparency of corporate governance and the protection of shareholders' rights. This impression is reinforced by the Banco Español scandal uncovered in 1924 (discussed below), an indication of a potentially serious failure in supervision and regulation of the banking sector that contributes to the picture of East Asia-like features in the early stages of Argentina's development.

Several challenges had to be confronted in this task. The first and more serious one is the lack of a single reliable source of data on prices, volumes, and dividends, until the year 1921. The data for the period 1900-21 had to be collected, therefore, from a variety of sources, as follows:

Period 1900-05:

The only source that summarizes monthly data on prices for this period is the Boletín Estadístico of the Bolsa de Comercio de Buenos Aires, issued back then at about the 15th of each month. Only a handful of companies were actively traded each month during this period.

Unfortunately, data on dividends and volumes for this period are not systematically reported by any source, and it was necessary to reconstruct that information piecemeal from the daily summaries of the newspaper *La Prensa*.

Even then, information on dividends is generally incomplete. For example, it's not rare to find *La Prensa* announcing the date of payment of a dividend without mentioning the amount. That information had to be supplemented from other sources that occasionally reported annual dividends, such as the *Anuario Pillado* and its successor, the *Argentine Yearbook*. Combining these different sources, we are able to reconstruct all the dividends paid by the banks in our stock market index in that period, Banco Español del Río de la Plata and Nuevo Banco Italiano.

Period 1906-13:

For this period, the *Review of the River Plate* provided weekly summaries of the prices of most companies quoting in the stock market. We adopted the last price of the last week of each month as representative of the monthly prices.

This source also reports information on annual dividends, although the assigned date is that of the end of the fiscal year, rather than the actual date of payment and it misses most of the time the payment of provisional dividends. To correct those problems, it was necessary again to rely on alternative sources, such as the newspaper *La Prensa* until 1907 and *El Monitor de Sociedades Anónimas* from that year on. This latter publication provided systematic information also on annual dividends for the period 1907-35 and typically contained some references to provisional ones, which, in combination with the other sources already mentioned--newspaper *La Prensa* and the *Review of the River Plate*-- made it possible to determine, at least to a good approximation, both the amount and date of payment of provisional dividends.

Unfortunately, volumes traded for this period were reported only in *La Prensa*, but it was not possible to retrieve them at this stage of the project because of difficulties in the only two public libraries of Argentina that have the necessary issues in their collections.

Period 1913-21:

Monthly prices were taken from the weekly reports of the Bolsa de Comercio because starting in 1913 this source, unlike the *Review of the River Plate*, reports the exact amount of provisional dividends, although not their exact dates, which had to be extracted or inferred from the information reported in *El Monitor de Sociedades Anónimas*. Monthly prices were taken to be the first price quoted in the report of the first week of the subsequent month or, if that was missing, the price of the closest date to the last day of the month in which the stock was traded, within a 15-day interval. Volumes traded for this period were also extracted from the *Boletín Oficial*.

Period 1921-35:

The *Boletín Oficial* of the Bolsa de Comercio de Buenos Aires started to report the exact dates and amounts of all dividends paid. Therefore, this single source could be used to compile the information on prices, volume traded, and dividends. Occasional typos or inconsistencies between partial dividends and annual dividends had to be cleared by consulting other sources, such as the *Review of the River Plate*, or *El Monitor de Sociedades Anónimas*. Monthly prices were assigned as in the previous period.

For all periods, the evolution of prices had to be monitored closely to filter spurious changes originated in cosmetic institutional features, such as stock splits or changes in shares' denomination. In the indexes constructed for this volume, we have limited our indexes to the

stocks with relatively continuous trading throughout the period. For these stocks we constructed quarterly price indexes, annual average dividend-price ratios and annual total investment returns. All these indexes are constructed on the principle used in constructing the Dow Jones index, which is share-price weighting.[4]

The Market Capitalization of the Bolsa

The Buenos Aires Bolsa had a market capitalization of roughly 900 million paper pesos (p.p.) in 1929, when the GDP was 9.7 billion p.p., so that the market capitalization was 9 percent of GDP. In that same year, the market capitalization of the New York Stock Exchange (NYSE) was $65 billion, when US GNP was $103 billion, or US market capitalization represented over 60 percent of US GDP. But the US stock market bubble in 1929 exaggerated the size of the US market capitalization with respect to the economy. For the NYSE, 1924 would perhaps be more representative, and in that year, market capitalization was 32 percent of GDP. To offer another comparison, the Italian stock market in 1992 had a capitalization of less than 15 percent of Italian GDP.

Two further points should be noted. First, the Argentine stock market did not list the major railway issues -- the Southern, the Western, the Pacific, and the Central. Together, the Argentine railway issues had a market capitalization in 1929 of 92 million British pounds, 1.1 billion p.p. at the average exchange rate of that year. If we were to add these issues to the

[4] Our data on market capitalization are not complete for all the years we cover, so consistent market capitalization weights are not possible for this entire period. One natural alternative would be to average rates of return across all stocks, therefore giving each stock a weight of one in each period. However, a chained ratio of growth rates series introduces a systematic upward bias into the index. To give a simple example, suppose an index with only two stocks, a and b, valued in years zero and year two at 100 each. In year 1 stock a rises to 150 while stock b falls to 50. A share-weighted index would give a price of 100 in each year, while a chained growth rate series would show 100

Argentine stock market, its capitalization would rise to above 20 percent of GDP. Second, we have included only ordinary stock, while the NYSE figures include preferred as well.

Demurgic-Kunt and Levine (1996) show that for 18 non-OECD countries with formal stock exchanges, using data from 1986-1993, the median ratio of market capitalization to GDP was 21 percent, which is similar to the capitalization of Argentina's equity issues, including the railway shares, in 1929. For OECD countries, the ratio was 24 percent. Thus the market value of publicly traded Argentine companies, including those listed on the London exchange, was quite high, even for a modern economy. This comparison shows that the market capitalization of the Argentine stock market was reasonably substantial for an emerging market. Although it did not represent Argentina's foremost industrial concerns, the railroads, it represented a high proportion of the remaining ones and a substantial amount of asset values.

Turnover on the Bolsa

Turnover -- the extent to which outstanding shares are actively traded -- varies considerably across stock markets and within stock markets over time. Trading on the Argentine Bolsa represented some 5 percent of market capitalization during the 1920s, that is, on average only one share in 20 turned over in a given year. Again, this figure does not include the most heavily traded issues, the railroads. In the hectic New York market of the 1920s, trading volume sometimes more than equaled the market capitalization. However, in the 1950s and 1960s, trading volume on the NYSE was more like 15 to 20 percent of market capitalization, and today it is roughly 50 percent. In 1992, trading on the Italian stock market was 20 percent of market

in years zero and one, and 133 1/3 in year 2, because it would average a 100 percent increase with a 33 1/3 percent decline.

capitalization. Demirgic-Kunt and Levine present data that show that the trading turnover on modern emerging markets (again 1986-93) is about 20 to 25 percent.

Thus the Argentine Bolsa's trading rate in the 1920s was relatively slow, either by contemporary standards or past ones, but by no means trivial. While the Bolsa cannot be considered highly liquid, it would be a mistake not to take seriously this market as a channel of finance.

Table 2 shows estimates of the volume of transactions in paper pesos on the Argentine Bolsa from 1901 to 1907 and 1912 to 1930 for trades in stocks denominated both in paper pesos and in gold pesos.[5] In nominal terms, volume peaked in 1918, but just barely. As a fraction of gross domestic product, transactions volume may have peaked as early as 1904. It should be noted that the shares of the largest firms on the exchange traded regularly, to the extent that a trade is recorded in virtually every week for which we have records. This rate of trade is certainly sufficient to provide a reasonable record of valuations.

The railroads were the highest capitalization companies in the country and would likely have been traded very actively on the Bolsa had they been listed there. The fact that they were traded on the London stock exchange meant that the Buenos Aires Bolsa was deprived of trading income and stature, and this may have substantially reduced the likelihood that stock trading in general would thrive on the Bolsa. On the other hand, the greater liquidity and legal stature of the London stock exchange bolstered the railroads' ability to raise capital, and also raised the value of information about Argentina in London, and information spillovers no doubt helped other capital issues there as well.

[5] The comparable data in Nakamura and Zarazaga, 1998, show only the trading in shares denominated in paper pesos.

New Issues on the Bolsa

Given the relatively high market capitalization of the companies on the Buenos Aires Bolsa, it should not be surprising that new listings on the exchange were substantial. The paid-in capital of these new listings is a good indication of the extent to which equity capital was being used to fund industrialization. Table 2 provides data on the paid-in capital of new listings on the Buenos Aires Bolsa, in comparison with some comparable data from the New York Stock Exchange (NYSE).

New listings on the Bolsa, for the directly comparable period 1919 to 1935, show that the new listings were about one-third the capitalization of those on the NYSE compared with their relative GDPs. We judge this to be a remarkably high number, particularly considering that the NYSE numbers are boosted considerably by the high numbers of 1928 and 1929, a period generally regarded as being a classic example of a stock market bubble.

As a proportion of gross domestic product, new listings on the Argentine Bolsa peak – at least for the periods when we have data – in 1910. But initial offerings generally remain robust until the early 1920s – on average, between 1907 and 1923, they are 0.56 percent of gross domestic product, about the average for the NYSE if we omit the bubble years of 1928 and 1929.

The decline in new offerings after 1923 – no single year reaches 0.4 percent of GDP – is associated with the lack of forward momentum in the pace of transactions in the Bolsa. As shown in Table 2, transactions on the Bolsa after 1923 are also about half of what they were before. Thus while causation no doubt runs both ways, the fact that the liquidity of shares on the Bolsa is not improving reduces the incentive of firms to list issues, and underscores the weakness of the Bolsa as an instrument for new funds.

In particular, despite the rise in the number of listings on the Bolsa, the ability of the rate of transactions to support new brokers and other sources of additional business information was not expanding. On the contrary, it appears that arbitrage opportunities may well have been declining, reducing the information flow from the stock exchange to the rest of the economy.

The importance of the downward trend in new offerings can be illustrated by the following calculation. Suppose new offerings had continued at a rate of 0.6 percent of GDP from 1921 to 1935. Then the size of the Bolsa (assuming the stocks held their value at par) would have been 300 million paper pesos larger, or roughly larger by 30 percent.

Rates of Return on Equity

Dividend-price ratio. One measure of the expected return to stocks is the dividend-price ratio. If price movements are difficult to forecast, as one expects on an equity market, movements in the dividend-price ratio may reflect changing ex ante returns to the market. In this respect, there do not appear to have been enormous changes in the ex ante returns on the Argentine Bolsa. Table 3 reports dividend-price ratios for a group of common stocks with nominal capitalizations in excess of 10 million paper pesos. Generally speaking, these represent the bulk of the Bolsa's market capitalization.

In the period from 1900 to 1905, dividend-price ratios were low, and stock prices rose rapidly. Thus it appears that in this period the exchange was dominated by stocks whose prices were expected to appreciate, and did so. This seems generally appropriate for an era that ex post was one of spectacular growth. For much of the rest of the period, dividend-price ratios are relatively higher around 6 percent, until the bear market of the 1930s, and dividends rather than capital gains bulk large in the ex post returns to the stocks. Returns are strong in the 1920s, and

then weaken in the early 1930s, with a bear market that extends from 1928 to 1934. The low dividend-price ratios in the early 1930s suggest that during this period, investors remained hopeful of a return to higher prices.

*Price index*es. Table 4 and Figure 1 show Argentine stock prices based on continuously traded stocks. From 1906 to 1912, in the Belle Epoque, the real value of shares on the Argentine stock market was roughly stable. After 1912, however, the stock market dropped for two years and continued to sink until 1920. Beginning in 1920, however, the stock market stabilized and then rallied spiritedly from 1925 to 1928, and in 1930, the stock market was still well above its level in the first half of the decade.

Figure 1 shows that bank and nonbank stock prices showed broadly similar secular and cyclical movements, but after the 1920s, the bank stock prices are less volatile, and there seems to be relatively little secular movement. This quieter behavior of bank stocks reflects a period in which the private banks are not particularly robust.

Thus from a high plateau around 1910, bank stocks and nonbank stocks alike fall during the great liquidity crunch and recession of 1912 to 1914. Both series rise but while nonbank stocks rise above their 1910 level, bank stock prices on average manage only to rise to about four-fifths of their peak. The divergent path of bank stocks will be discussed further below.

Real rates of return. Prior to the 1930s, real rates of return on Argentina's Bolsa are generally quite strong. The periodization here has been chosen to match that in a careful study of international equity returns by Dimson et al. (2000). Table 5 shows that for our Argentine stocks, real returns are above those in the US from 1900 to 1920, and then falter relatively in the

1920s. At least until 1929, then, stock market real returns do not appear to be the reason for the weak turnover and declining initial offerings.

In summary, where the New York Stock Exchange continues to strengthen and provide substantial finance as the 1920s develop, the Buenos Aires Bolsa falters as a source of capital during this period. Nevertheless, for much of the period under consideration, the Bolsa is a surprisingly strong source of capital funding and of good dividends.

Section IV. Banking Development and Banking Crises

Measuring Argentine banking development during the period 1900 to 1935 depends in large part on how one conceives of banking development. We shall show that Argentine banking development in the aggregate from 1900 to 1935 was quite substantial, but took place with a highly significant drawback – the steadily increasing importance of the BNA.

Bank loans. As shown in Table 6 and Figure 2, the ratio of bank loans to GDP in Argentina rises steadily for most of the period beginning around 20 percent in the early 1900s, rising to over 40 percent in 1922, and thereafter remaining above 35 percent until 1935. On average, over the period 1901 to 1935, bank loans average 32.8 percent of Argentine GDP. Over the same period, US bank loans average 39 percent of GDP. For a somewhat shorter period, from 1921 to 1935, loans at London clearing banks average 33.1 percent of UK GDP.[6] Focusing on the period after World War I but before the Depression, from 1921 to 1929 Argentine banks lend an average of 37 percent of GDP, US banks 39 percent, and London clearing banks 34

[6] During this period, London clearing banks account for 77 percent of gross bank deposits in the UK.

percent. Thus, overall, banks in Argentina mobilized a large proportion of domestic funds compared to two of the best developed banking systems in the world.

However, as documented in della Paolera and Taylor (1998, 1999), the Argentine banking system during this period had an increasingly lopsided development, as the huge BNA grew much more rapidly than either private domestic or foreign banks. The relatively slow growth of private domestic banking during this period can in part be ascribed to the boom of 1910 to 1912 and the crash that succeeded it, as we shall show below.

In turn, the lopsided development of the Argentine banking system made the political capture of the financial system increasingly inviting, and the bailout of the Argentine private banks in 1935 documented in della Paolera and Taylor, 1999, was one of the outcomes.

Monetary development. Another measure of financial development is money. A measure that is often used for international comparisons is M3: currency in circulation plus deposits at all financial intermediaries. This measure has two virtues: one, it is available for more countries, and two, by broadly defining depositories, it makes minor institutional differences between countries less important.

During the period under consideration, 1901 to 1935, the ratio of M3 to GDP for Argentina was 45.0 percent (Table 6 and Figure 3). Over the same period, the ratio for the US was 55.5 percent and for the UK 58.5 percent. Thus on average, broad money in proportion to GDP was lower for Argentina than for the US, at a ratio of .82, and the UK, at a ratio of .77.

All three countries saw their ratios of M3 to GDP grow over the period, and broadly speaking, at about the same rate, at nearly a percent a year. In the decade from 1901 to 1910 Argentina had a M3/GDP ratio of 41 percent, while in the decade ending in 1935 it had a ratio of

49 percent. For the US, the comparable figures are 50.2 percent and 62.8 percent. And for the UK, they are 54.4 percent and 65.5 percent.

Argentine Private National Banks

The Argentine private banks (bancos privados nacionales) proved their mettle as early as the Baring crisis. In that crisis, when both the national bank and the provincial bank of Buenos Aires failed, a number of private banks weathered the storm. But almost all of them were forced to suspend, at least briefly, during that period. Alone among domestic private banks,[7] Banco Espanol del Rio de la Plata had managed to keep its doors open throughout the crisis, relying on a high reserve-to-deposit ratio, greater than 50 percent. Although founded just four years before the Baring crisis, the Banco Espanol was soon able to replace Banco de Italia y Rio de la Plata as the top private bank as the result of the reputation it had won with its conservative investment strategy.

The period from 1900 to 1912 was a heady period for Argentine's financial community, as the economy flowered and deposits rose rapidly. Deposits and loans of the private banks grew faster than GDP, indeed, their ratios to GDP roughly doubled. And they grew relative to deposits and loans of the BNA. They may have grown too fast. Private banks used both security issues and deposits to grow, and while they generally used conservative banking principles, reserves did shrink somewhat relative to deposits.

From 1900 to 1914, the Belle Epoque, Argentina had generally benefited from rising world prices, and Argentine export prices rose faster than import prices, so there was a favorable terms of trade effect. This boom time for Argentina was perhaps comparable to the boom in

[7] The British Bank of London and the River Plate was the other private bank that did not suspend.

Southeast Asia in the 1990s. As we shall see, weakness within the Argentine financial structure appeared well before the London stock exchange holiday.

In London, the bank rate was raised in late 1912, and monetary pressure was not relaxed until early 1914. The 1912-13 crop in Argentina was excellent. Yet bank stocks and dividends appeared to be already under pressure.

In the first quarter of 1913, gold continued to be imported into Argentina at a phenomenal rate (35 million gold pesos), and in the second quarter (10 million), gold was still being imported at the rate of the previous year. But in the second half of the year, 42 million gold pesos were exported.

The 1913-14 crop did very poorly. Cereal exports for October 1913 to September 1914 fall to 182 million gold pesos from 322 in 1912-13. By June 1914, a generalized depression had resulted. Agricultural production had only one good year in the next three – 1914-15, and does not fully recover until 1917-18. The nonagricultural sector's production fell 15 percent from 1913 to 1914, and another 10 percent from 1914 to 1915. In all, from 1912 to 1917, Argentina's real gross domestic product slid 19 percent while population rose nearly 14 percent. Output per capita thus fell nearly 29 percent, with consequences that have reverberated throughout the century.

Beginning in 1912, the disturbances of the domestic economy began to lead to widespread withdrawals of cash from the private banks, some of it in favor of the Bank of the Nation ,which was clearly perceived as a safe haven.

The closure of the London stock exchange on Friday, July 31, 1914, in retrospect put a definite period on the Belle Epoque, marking as it did the transfer of international financial

leadership from London to New York. June 27, 1914, was the date of the assassination of Archduke Ferdinand at Sarajevo, the spark that set off the war. The outbreak of war during the following month was accompanied by a desperate flight to liquidity, as foreign investors sold securities at exchanges around the world. In particular, many investors were afraid that they would not be able to liquidate and repatriate overseas assets as the war widened. They thus dumped assets on markets and withdrew liquidity, causing prices to tumble. This in turn threatened many institutions, particularly financial ones, with failure. In addition, the warring nations themselves had a sudden pressing need to finance purchases of war materiel and the raising of armies. These rising pressures, over the course of July 1914, forced one exchange after another to close – most for extended periods. The world's major bond exchanges remained closed until the end of the year.

These liquidity needs naturally transmitted themselves to the Argentine markets, in particular, to the private banks. The most important private banks – Banco Espanol, Banco Italia, Banco Frances, and Nuevo Banco Italiano – were each identified with and dependent on immigrant communities that maintained strong ties with their homelands. As their depositors were naturally responsive to European calls for liquidity, these banks were subject to extraordinary demands on liquidity.

In Diamond and Dybvig's model of a bank run, depositors hold liquid deposits because they expect to receive new information about the marginal utility of consumption. The events during 1914 appear to closely match this description of the demand for liquidity. Total deposits at Argentine banks fell by nearly 20 percent. The brunt of the hardship fell on the private banks, which lost over 45 percent of their deposits. It is useful to compare these losses with those in the

US during the banking panics of the Great Depression, where between the end of 1928 and the middle of 1933, commercial bank deposits fell by 39.5 percent. Thus the Argentine private banks experienced a worse deposit loss in two years than US commercial banks did in the four and a half years of the Great Depression.

As Table 7 shows, deposits at the five largest private banks fell by two-fifths. (Only Banco Popular, the smallest of the five, had a deposit loss less than 20 percent.) It is remarkable that these banks could survive such intense drains. However, it was not just a demand for liquidity that propelled the deposit losses. For, as della Paolera and Taylor, 1999, point out, the BNA actually gained deposits. On the one hand, then, a question arises as to whether the boom years from 1900 to 1912 had not themselves led the private banks to overextend. On the other hand, it could well be that some of the drain on deposits was due to contagious fears and a flight to safety that could have been stemmed by deposit insurance. Although the BNA, by rediscounting to the private banks, helped them weather the crisis, the BNA may also have, by representing a safe haven, encouraged flight.

One interpretation is that the banking crisis in this period was due to the end of London's role as financier to the world in general and Argentina in particular. An alternative interpretation argues that the extended boom from 1900 to 1912 had generated speculative conditions in Argentina that were in any case liable to cause the domestic financial structure to fall. This latter interpretation is close to that put forward in Ford's study of the crisis. We turn to detailed banking price data to shed additional light on this issue.

The Stock Market as a Window on Private Banks

Detailed analysis of stock price movements offers a window on the public's view of the business prospects of some of the major Argentine private banks. We review some of the evidence below that shows significant stock price declines at the banks before the deep liquidity squeeze that took place beginning in June 1914.

Nuevo Banco Italiano, the fourth largest private bank, had a stock price of 106 in December 1899. The stock price hit a high of 420 in October 1912, but in January 1913, it fell to 325, stabilized to 305 in November, fell in February 1914 to 250. It then steadied during 1914, to 270 in September, before falling to 165 in January 1915. NBI's stock had a pattern of falling around year-end during this period. For this bank there appears to have been an important impact on its stock market value by the spring of 1914.

For Banco de Galicia, a medium size private bank, our data begin with the stock trading at 138 in 1910. The price briefly shot up to 160 in January 1911, was still 160 in March 1911, fell back to 135 in April 1911, and is still 128 in January 1913. Over the course of the year it fell steadily to 85 in December 1913, then to 40 in September 1914, before recovering to 60 in December 1914. When the generalized depression struck in July 1914, the Banco de Galicia's stock price had already fallen to 48.

Banco Frances del Rio de la Plata was a large, forward-thinking bank that invested in industry – electricity, rails, and food manufacture – and came a cropper. Its shares peaked in 1911 at 175. The price fell steadily to 134 in December 1913, by which time it had lost nearly one-quarter of its nominal value. In February 1914, the stock traded at 112.5, and on the eve of war in June 1914, it had fallen to 92. But its true financial condition was revealed in the August-

September hiatus, and when the Bolsa reopened in October 1914, the price was 37 and its group was ruined as a financial force.

Banco Español stock price, which we first record at 128 in 1899, continued to do well throughout the 1912-13 crisis and did not begin to fall until 1914 opened. From 180 in February 1914, the stock price fell to 150 in July and was next traded at 100 in October. Thus the fall of Banco Español's stock price followed the agriculture failure and the generalized depression; the gold export in the second half of 1913 did not appear to be so important.

However, a decade later it was learned that Banco Español had, beginning in 1914, entered into a policy of deception to avoid closing. *The Economist* of March 24, 1924, reported:

"It is now public property that the Banco Español del Rio de la Plata has, at an extraordinary general meeting, held on February 2nd, written down ts capital by 75 percent – from $100 million Arg. paper to $25 million – and admitted losses which at the lowest reckoning total $103 million Arg. paper, and are generally believed to be in effect nearly thirty million more than this sum.

"… As far back as 1914 the bank, taking the view that to suspend the dividend would have led to closing down, decided to pay dividends out of 'funds other than profits,' i.e., presumably out of capital."

The capital loss of about 100 million paper pesos represented roughly one-third of the paid in capital of the private national banks as a group.

Thus it would appear that even before the end of the Belle Epoque, the boom of that period had resulted in excesses that had severely harmed the major private banks in the domestic banking system. The picture that emerges is one not dissimilar to events in Southeast Asia,

where lack of financial controls during an economic boom inspired in large part by financial openness created banking sector weaknesses with dire economic consequences.

One consequence may have been that whereas the US was able to ship industrial and military supplies to Europe and take advantage of the war boom, a similar growth in the industrial sector in Argentina was difficult to finance. Moreover, it is not clear how soundly banks were operating. In its report on the revelations at the Banco Espanol, *The Economist* notes that, "in 1918, the bank indulged in the purchase of ships (trying by hook or by crook to obtain the necessary profits.) But the Armistice came along, and the only result of the shipping speculation was a further loss of $3 million m/n."

Banco Espanol shares had gone from 100 in October 1914 and 120 in January 1915 to 153 in December 1918. Some of the loss on the ships may have been reflected in its shares which declined from 141 in August 1919 to 107 in January 1920. In the period surrounding the shareholders' meeting at which its losses were announced, in February 1924, Banco Espanol's shares fall from 93 in September 1923 to 26.5 in January 1924 as the news leaked out, and then further to 16 in July 1924. It drifts up to 20.5 in January 1925 and then jumps abruptly to 72 in February 1925; it then stays at that level until 1930.

After 1923, as we saw in the previous section, stock market development tapered off, with fewer initial offerings and a lower rate of turnover. This relative decline coincided with the revelation that Banco Espanol had hidden losses for over a decade, amid tremendous losses for shareholders. Did the revelations about Banco Espanol and the resulting increase in uncertainty about shareholdings generally have a role in the deterioration of the stock market's development? Certainly the fact that both Banco Espanol and Banco Frances were ruined (one

publicly, the other to limp along with chicanery) at the end of the Belle Epoque had important long-run consequences for the Argentine economy.

The melancholy demise of the BNA in 1935 detailed in della Paolera and Taylor (1999) was due to bad loans arising predominantly in the private banking system. They calculate that one-third of all private banking loans had gone bad by then. By the end, with the Caja rediscounting to the BNA and the latter rediscounting on the collateral of bad loans, there was simply no control in Argentine's system of credit allocation.

Our analysis of bank stock prices suggests that the weakness in private banking arose in large part from the excesses of the Belle Epoque, antedating the severe international financial crisis touched off by the sudden start of World War I. Inadequate development of the institutions for providing private credit must have been an important limitation to the Argentina's economic development during this period. The creation of two durable institutions for maintaining the currency system was inadequate to the development of a sound financial regime.

Conclusion

The failure of most developing countries to attain high levels of per capita output during the 20th century is one of the most important questions for economics. One important cause of development failure is, no doubt, a failure of openness – countries that cut themselves off from world trade are unlikely to capture the benefits of technological progress abroad.

But an open financial regime is not a guarantee of domestic financial development, since the progress of domestic financial institutions is by no means automatic. The traumatic events in Argentina associated with the close of the Belle Epoque certainly warped its financial

development. Despite a large stock market capitalization, good international credit, large gold reserves, a strong money supply, and apparently abundant bank credit, a careful study of the financial structure of Argentina reveals crucial weaknesses.

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TABLE 1

INTEREST RATES AND GOLD

	ANNUAL AVERAGE INTEREST RATES			ARGENTINA'S MONETARY GOLD
	Argentina Custom loan	UK Consols	USA Corporate Bonds	Caja and BNA gold stock (percent of gold at world central banks and treasuries)
1900	5.4	2.8	3.3	
1901	5.2	2.9	3.25	
1902	5.2	2.9	3.3	
1903	5	2.8	3.45	
1904	4.9	2.8	3.6	
1905	4.9	2.8	3.5	
1906	4.9	2.8	3.55	
1907	4.9	3	3.8	
1908	4.8	2.9	3.95	
1909	4.8	3	3.82	
1910	4.8	3.1	3.87	
1911	4.8	3.2	3.94	
1912	4.8	3.3	3.91	
1913	4.9	3.4	4.02	5.27%
1914	4.9	3.3	4.16	4.52%
1915	5.1	3.8	4.2	3.83%
1916	5.3	4.3	4.05	4.00%
1917	5.3	4.6	4.05	4.03%
1918	5.1	4.4	4.82	4.47%
1919	5.3	4.6	4.81	4.95%
1920	5.6	5.3	5.17	6.53%
1921	5.4	5.2	5.31	5.87%
1922	5	4.4	4.85	5.61%
1923	5	4.3	4.68	5.39%
1924	5	4.4	4.69	4.94%
1925	5	4.4	4.5	5.01%
1926	5	4.6	4.4	4.88%
1927	4.9	4.6	4.3	5.52%
1928	4.9	4.5	4.05	6.04%
1929	5.3	4.6	4.45	4.20%
1930	5.7	4.5	4.4	3.76%
1931	7	4.4	4.1	2.23%
1932	9.05*	3.7	4.7	2.08%
1933	4.9*	3.4	4.11	1.99%
1934	4.3*	3.1	3.91	
1935	4*	2.9	3.37	

Sources: Column 1: see text; Columns 2: Mitchell and Deane; Column 3: US Historical Statistics; Column 4: Federal Reserve Board, 1943

TABLE 2 STOCK MARKET TRANSACTIONS AND NEW ISSUES

	Buenos Aires Bolsa Transactions/GDP	Capitalization of New Issues/GDP	
1900		Buenos Aires Bolsa	New York Stock Exchange
1901	0.47%		
1902	0.49%		
1903	0.94%		
1904	3.14%	0.10%	
1905	2.08%	NA	
1906	2.09%	NA	
1907	0.96%	0.09%	
1908		0.32%	
1909		0.58%	
1910		1.25%	
1911		0.75%	
1912	0.66%	0.72%	
1913	0.88%	0.56%	
1914	0.20%	0.54%	
1915	0.19%	0.13%	
1916	0.23%	0.94%	
1917	0.47%	0.38%	
1918	0.89%	0.74%	
1919	0.71%	0.21%	0.98%
1920	0.37%	0.62%	0.64%
1921	0.59%	0.74%	0.27%
1922	0.66%	0.44%	0.39%
1923	0.53%	0.45%	0.38%
1924	0.29%	0.22%	0.59%
1925	0.21%	0.16%	0.67%
1926	0.31%	0.22%	0.69%
1927	0.48%	0.35%	0.71%
1928	0.38%	0.26%	2.15%
1929	0.41%	0.13%	4.88%
1930	0.27%	0.19%	1.21%
1931		0.32%	0.25%
1932		0.13%	0.02%
1933		0.15%	0.24%
1934		0.04%	0.05%
1935		0.08%	0.04%
	Average, 1907-1935	0.40%	
	Average, 1919-1935	0.28%	0.83%
	Average, 1907-1923	0.56%	

GDP data: Table 6

Argentine Source: Stock market data, El Monitor de Sociedades Anonimas y Patentes de Invencion;GDP, Taylor (this volume)

US Source: Stock market data: U.S. Historical Statistics GDP, Balke and Gordon, 1989, before 1929, US NIA

afterwards.

TABLE 3 ARGENTINE EQUITIES
FREQUENTLY TRADED STOCKS

	AVERAGE DIVIDEND PRICE RATIO	AVERAGE TOTAL RETURNS	
		Nominal	Real
1900	4.2%	22.4%	8.6%
1901	4.1%	-0.2%	13.4%
1902	4.6%	4.7%	-4.1%
1903	6.2%	38.1%	45.7%
1904	4.4%	14.4%	12.0%
1905	6.5%	24.2%	14.3%
1906	5.9%	-1.1%	-6.7%
1907	8.2%	5.6%	2.8%
1908	7.3%	12.3%	16.6%
1909	6.8%	25.3%	14.5%
1910	6.6%	29.9%	20.5%
1911	6.9%	18.6%	19.6%
1912	5.8%	10.9%	8.2%
1913	8.3%	-16.0%	-16.0%
1914	6.2%	-12.5%	-13.1%
1915	7.2%	1.8%	-4.9%
1916	5.3%	11.7%	-1.9%
1917	2.5%	19.6%	-3.8%
1918	11.0%	44.6%	32.3%
1919	6.3%	18.9%	15.1%
1920	9.6%	7.2%	2.5%
1921	7.3%	-5.0%	19.5%
1922	7.4%	10.6%	22.0%
1923	6.4%	9.0%	4.5%
1924	6.7%	5.0%	-1.9%
1925	7.0%	5.2%	3.5%
1926	6.8%	15.0%	28.1%
1927	6.6%	14.1%	16.2%
1928	5.5%	12.5%	11.8%
1929	5.7%	1.2%	4.4%
1930	5.3%	-8.3%	-4.1%
1931	6.3%	-11.0%	-8.3%
1932	5.7%	-10.7%	-11.8%
1933	4.9%	10.6%	15.7%
1934	4.4%	-1.9%	-13.9%
1935	5.5%	1.6%	2.8%
1900 to 1909	5.8%	13.9%	10.9%
1910 to 1919	6.6%	11.4%	4.5%
1920 to 1929	6.9%	7.3%	10.7%
1930 to 1935	5.4%	-4.0%	-3.7%

Source: See text. Real returns deflated using wholesale price indexes from della Paolera, 1988, and Domenech, 1986.

TABLE 4 STOCK PRICE INDICES - BANKS AND NON-BANK FIRMS

	All stocks	Nonbank stocks	Bank stocks
1899Q4	100	100	100
1900Q1	101.2835	106.4267	97.00855
1900Q2	105.1342	109.7686	101.2821
1900Q3	110.5018	120.0514	102.5641
1900Q4	117.5029	130.3342	106.8376
1901Q1	111.4819	123.2391	101.7094
1901Q2	113.8856	127.5064	102.5641
1901Q3	114.2357	127.7635	102.9915
1901Q4	112.6021	127.7635	100
1902Q1	108.7515	125.7069	94.65812
1902Q2	107.5846	116.7095	100
1902Q3	108.3314	121.1825	97.64957
1902Q4	112.7188	123.9075	103.4188
1903Q1	119.9533	134.1902	108.1197
1903Q2	132.2054	152.4422	115.3846
1903Q3	140.8868	169.7686	116.8803
1903Q4	146.5578	174.8072	123.0769
1904Q1	140.9568	173.2648	114.1026
1904Q2	163.8273	214.3959	121.7949
1904Q3	151.2252	189.2031	119.6581
1904Q4	160.6768	205.9126	123.0769
1905Q1	160.6768	205.9126	123.0769
1905Q2	160.6768	205.9126	123.0769
1905Q3	186.1144	244.473	137.6068
1905Q4	187.3979	242.6735	141.453
1906Q1	185.4142	238.3033	141.453
1906Q2	183.6173	237.4293	138.8889
1906Q3	186.6278	244.0617	138.8889
1906Q4	175.0292	218.509	138.8889
1907Q1	171.2952	217.9949	132.4786
1907Q2	172.112	212.0823	138.8889
1907Q3	169.3349	205.964	138.8889
1907Q4	170.83	209.00	139.10
1908Q1	175.4726	213.3162	144.0171
1908Q2	177.8063	214.2416	147.5214
1908Q3	168.7748	194.9614	147.0085
1908Q4	178.8098	202.1594	159.4017
1909Q1	188.8915	217.1722	165.3846
1909Q2	201.5636	223.4961	183.3333
1909Q3	210.5718	238.9717	186.9658
1909Q4	209.8716	233.3162	190.3846
1910Q1	238.0397	281.2339	202.1368
1910Q2	250.1274	284.0377	224.3387
1910Q3	267.7169	314.4009	229.3092
1910Q4	235.4563	263.3282	215.3916
1911Q1	240.4796	268.2666	220.6936

1911Q2	251.0205	288.8486	221.1906
1911Q3	248.15	285.0254	219.2024
1911Q4	261.3062	313.6999	216.7171
1912Q1	259.5361	304.9064	222.1847
1912Q2	268.578	313.5725	231.9602
1912Q3	275.9136	314.2097	246.5406
1912Q4	273.7289	312.3936	243.8896
1913Q1	254.9912	303.7913	213.9004
1913Q2	251.164	299.1715	210.7524
1913Q3	217.6755	243.734	198.823
1913Q4	212.413	241.5037	190.2074
1914Q1	194.3132	229.556	165.0231
1914Q2	190.3265	226.6885	159.7212
1914Q3	181.2367	215.5373	152.431
1914Q4	174.7782	209.3245	133.7025
1915Q1	156.2798	205.5012	111.0095
1915Q2	159.7084	200.2442	123.6017
1915Q3	163.7749	217.9268	113.6605
1915Q4	166.9643	220.4757	117.637
1916Q1	186.26	241.8223	135.531
1916Q2	180.9178	230.6711	136.0281
1916Q3	176.054	224.6176	132.2173
1916Q4	176.0859	225.9557	130.8918
1917Q1	177.25	230.8304	128.2409
1917Q2	175.3523	226.4018	128.9036
1917Q3	191.666	255.4268	132.615
1917Q4	208.0435	276.1044	145.1408
1918Q1	215.698	286.2998	150.4428
1918Q2	241.4683	308.7934	180.5976
1918Q3	264.2564	354.0037	180.929
1918Q4	267.5893	352.0602	189.876
1919Q1	267.4777	354.7046	186.8937
1919Q2	276.2246	375.6848	183.2486
1919Q3	282.117	389.0504	181.5917
1919Q4	284.2538	404.9488	169.4966
1920Q1	277.8432	397.8758	163.5319
1920Q2	291.302	420.0467	166.0891
1920Q3	286.6763	412.8498	164.427
1920Q4	228.8074	313.5155	160.8469
1921Q1	209.3928	280.7149	158.6733
1921Q2	209.5507	280.9912	158.6733
1921Q3	203.808	267.4883	165.0663
1921Q4	201.5701	263.0887	165.9613
1922Q1	196.2142	254.8902	163.7877
1922Q2	205.1302	264.8292	174.2721
1922Q3	205.6393	265.0295	175.5507
1922Q4	207.889	271.591	170.6921
1923Q1	211.0702	275.4588	173.8374
1923Q2	214.8158	280.1209	177.3407
1923Q3	214.4961	282.3242	172.2264
1923Q4	212.1911	287.5458	155.0932
1924Q1	207.5535	283.3257	147.882
1924Q2	212.3806	289.2587	152.5361

1924Q3	211.2518	288.0431	151.1296
1924Q4	212.7516	290.4605	151.5132
1925Q1	218.5929	295.5992	160.9236
1925Q2	215.471	289.4176	162.2534
1925Q3	220.4479	298.5415	161.4862
1925Q4	217.5233	293.6584	161.0515
1926Q1	221.8688	302.5475	158.6733
1926Q2	228.9376	315.4702	157.6504
1926Q3	228.1364	313.7228	158.2897
1926Q4	232.9003	320.4155	161.3328
1927Q1	237.1668	325.6785	165.4115
1927Q2	247.9497	343.7675	166.8563
1927Q3	249.3508	348.3606	162.8927
1927Q4	252.4451	353.6305	163.1612
1928Q1	255.9223	359.3494	163.8388
1928Q2	260.8204	361.9671	174.8603
1928Q3	261.2861	362.7959	174.8347
1928Q4	259.4271	360.9241	172.2775
1929Q1	259.2456	360.1091	173.1981
1929Q2	254.2567	352.111	171.8428
1929Q3	254.0831	351.9591	171.5615
1929Q4	246.4578	340.3556	168.3395
1930Q1	220.3966	297.9682	162.3812
1930Q2	217.4089	292.7536	162.3556
1930Q3	215.321	289.4866	161.6396
1930Q4	205.7893	275.1549	157.2924
1931Q1	190.0374	250.2005	152.4593
1931Q2	180.4702	234.7292	150.1067
1931Q3	169.1624	214.8305	150.3113
1931Q4	163.846	206.1901	149.0839
1932Q1	152.6567	190.8362	141.2589
1932Q2	146.6811	180.8489	140.3894
1932Q3	140.8121	173.203	135.5308
1932Q4	134.1064	162.9877	132.7179
1933Q1	128.4782	153.6359	131.7973
1933Q2	124.3932	155.3833	115.329
1933Q3	128.9124	164.8802	112.3883
1933Q4	136.0759	178.024	111.2631
1934Q1	140.7608	187.1341	109.5754
1934Q2	132.8395	172.3742	111.2375
1934Q3	131.0042	168.2922	112.8486
1934Q4	127.5152	162.7529	111.8001
1935Q1	122.1553	157.5037	104.1541
1935Q2	124.0261	159.7139	106.1232
1935Q3	121.5554	156.7578	103.5915
1935Q4	119.3057	156.3572	97.04515

Source: See text

TABLE 5 REAL EQUITY RATES OF RETURN, SELECTED COUNTRIES

Jan1 to Jan 1	Argentina	US	UK	Australia	Canada	France	Germany	Italy	Netherlands	Sweden
1900 to 1910	10.9%	7.1%	1.8%	11.8%	6.3%	5.3%	3.6%	4.4%	4.8%	19.1%
1910 to 1920	4.5%	-2.5%	-1.4%	3.9%	0.1%	-3.1%	-12.7%	-2.8%	1.3%	0.7%
1920 to 1930	10.7%	14.9%	9.3%	16.3%	15.5%	7.9%	13.6%	2.4%	1.5%	8.4%

SOURCE: TABLE 3 and Dimson, et al.

TABLE 6 CREDIT SUPPLY AND MONEY SUPPLY (PERCENT OF GROSS DOMESTIC PRODUCT)

	BANK LOANS ARGENTINA				US	UK	BROAD MONEY SUPPLY Argentina	US	UK
	ALL BANKS	PRIVATE BANKS	FOREIGN BANKS	BNA	ALL BANKS	London Clearing Banks	M3/GDP	M3/GDP	M3/GDP
1901	26.9%	7.7%	7.8%	11.4%	33.0%		38.5%	45.8%	55.4%
1902	19.0%	7.6%	6.4%	5.0%	35.4%		36.9%	48.1%	55.4%
1903	20.3%	9.2%	6.6%	4.5%	36.1%		41.8%	48.3%	55.8%
1904	23.6%	10.3%	8.1%	5.1%	35.7%		43.8%	48.4%	55.4%
1905	26.2%	11.4%	7.9%	6.9%	36.5%		43.7%	49.0%	53.9%
1906	26.5%	11.3%	8.6%	6.6%	37.2%		40.9%	49.0%	52.4%
1907	26.1%	11.3%	7.9%	6.9%	39.2%		39.7%	48.7%	51.4%
1908	26.8%	11.8%	7.2%	7.8%	40.3%		39.4%	56.3%	54.4%
1909	28.1%	13.2%	6.9%	8.1%	38.6%		42.0%	54.3%	55.2%
1910	30.5%	15.3%	6.7%	8.5%	40.9%		42.2%	53.9%	54.5%
1911	35.1%	18.2%	7.4%	9.5%	41.1%		44.3%	55.8%	53.2%
1912	34.4%	17.8%	7.1%	9.5%	40.5%		42.0%	54.6%	51.9%
1913	35.9%	18.0%	7.4%	10.5%	40.5%		43.9%	53.7%	52.2%
1914	35.1%	15.5%	6.9%	12.7%	45.3%		43.2%	59.1%	55.5%
1915	29.2%	11.9%	5.5%	11.8%	43.9%		41.2%	63.4%	55.4%
1916	27.8%	12.0%	5.6%	10.1%	39.7%		40.8%	58.4%	51.4%
1917	27.4%	11.9%	5.5%	10.0%	37.9%		40.8%	54.9%	46.1%
1918	28.5%	11.2%	5.8%	11.5%	32.8%		40.8%	48.2%	45.8%
1919	32.4%	11.8%	7.2%	13.4%	32.5%		43.6%	50.0%	53.3%
1920	32.5%	12.1%	7.3%	13.1%	35.8%		44.6%	45.9%	54.9%
1921	39.5%	15.6%	9.1%	14.7%	39.9%	28.9%	54.0%	51.3%	65.1%
1922	40.4%	15.6%	8.2%	16.5%	38.4%	28.2%	55.0%	57.2%	69.1%
1923	37.8%	14.0%	8.2%	15.6%	35.9%	30.8%	50.0%	50.9%	67.6%
1924	34.6%	11.8%	7.0%	15.8%	36.4%	33.0%	44.3%	53.4%	65.1%
1925	35.1%	12.5%	7.0%	15.6%	37.6%	35.2%	44.7%	55.1%	60.6%
1926	38.0%	13.3%	7.1%	17.6%	37.6%	36.9%	48.1%	52.2%	63.8%
1927	35.8%	12.5%	6.6%	16.7%	39.4%	37.8%	47.6%	55.4%	61.1%
1928	34.0%	12.0%	6.2%	15.9%	41.0%	38.0%	48.6%	57.0%	61.8%
1929	37.1%	13.4%	7.0%	16.7%	40.4%	39.0%	49.7%	52.9%	60.9%
1930	42.4%	14.4%	8.2%	19.8%	44.9%	37.8%	52.8%	58.8%	61.6%
1931	47.6%	15.9%	8.7%	23.1%	46.2%	36.4%	55.6%	62.5%	66.7%
1932	45.4%	15.4%	6.9%	23.1%	47.7%	32.8%	53.8%	76.2%	69.4%
1933	43.6%	14.8%	6.1%	22.6%	39.6%	27.2%	53.2%	73.7%	73.6%

1934	35.6%	12.2%	4.9%	18.5%	32.3%	27.7%	43.3%	69.6%	67.6%
1935	29.1%	11.1%	4.6%	13.4%	27.6%	26.8%	41.7%	70.1%	68.5%
AVERAGE, 1901-35	32.8%	13.0%	7.0%	12.8%	38.5%		45.0%	55.5%	58.5%
AVERAGE, 1921-29	36.9%	13.4%	7.4%	16.1%	38.5%	34.2%	49.5%	54.4%	63.7%

Argentine Sources: Loans, Baiocco; Money, della Paolera, and Baiocco; GDP, Taylor (this volume)

US Sources: Loans, Federal Reserve, 1958; Money, Friedman and Schwartz, 1970; GDP, Balke and Gordon, 1989, before 1929, US NIA afterwards.
UK Sources: Loans, Mitchell and Deane, 1962; Money, Capie and Webber, 1985; GDP, Feinstein, 1972.

TABLE 7 DEPOSITS IN THE 1912-1914 CRISIS

Deposits (Millions of paper pesos,end of year)

	1912	1914	Decline
Total	1480.9	1189.3	-19.7%
Private Domestic Banks	674.3	365.4	-45.8%
Banco Espanol	229.9	126.9	-44.8%
Banco Italia	101.5	62.4	-38.5%
Banco Frances	84.7	55	-35.1%
Nuevo Banco Italiano	41	27.2	-33.7%
Banco Popular Argentina	20.4	17.4	-14.7%
Other Private Banks	196.8	76.5	-61.1%
Banco de la Nacion	478.3	552.7	15.6%
Foreign Banks	328.3	271.2	-17.4%

SOURCES: Baiocco; Regalsky

Figure 1: Stock price indexes
Source: Table 4

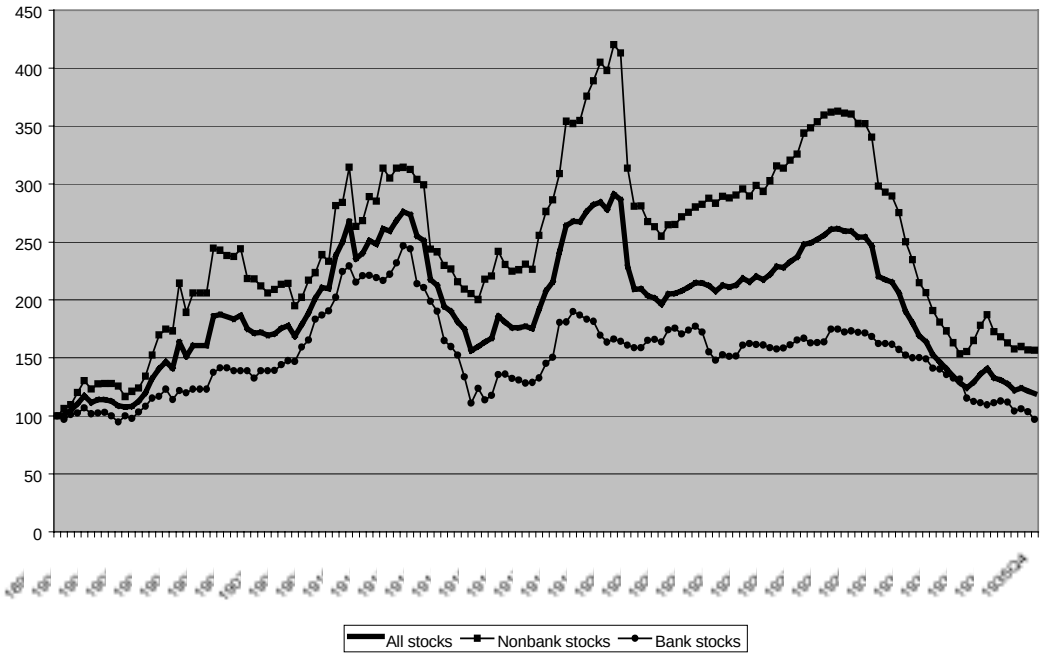

Figure 2: Loans to GDP
Source: Table 6

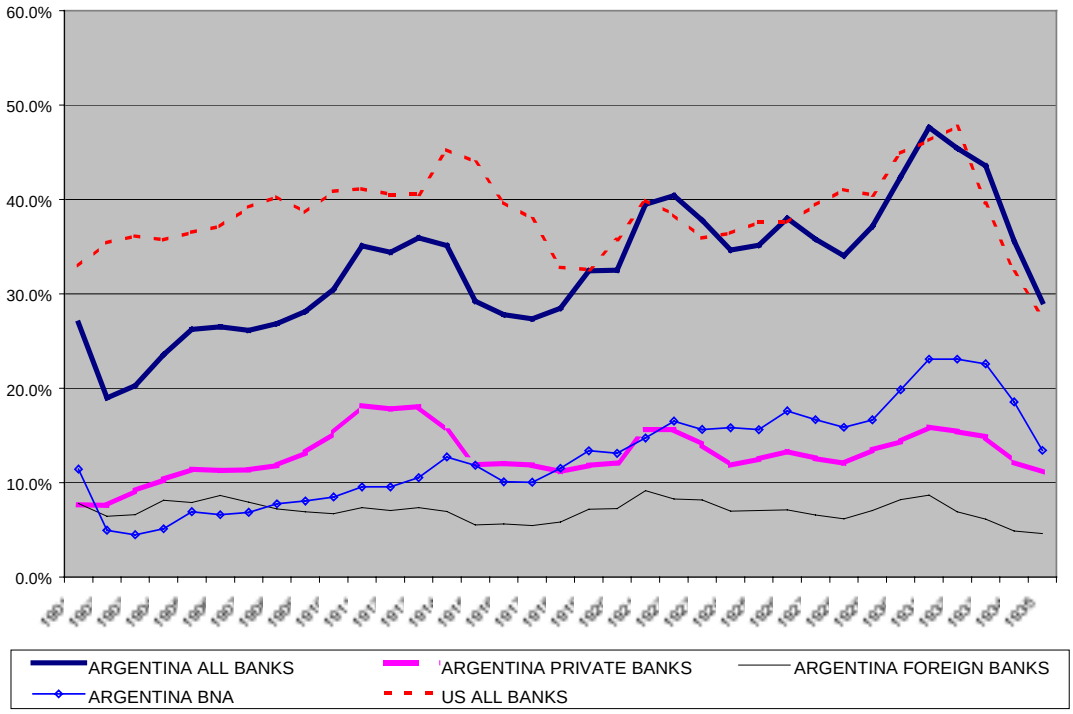

Figure 3: Broad Money Supply
Source: Table 6