An Incipient Banking System and Financial Crisis:
Banking during the Brazilian Encilhamento, 1890-1892

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Crises of the currency, banking and domestic securities markets battered the Brazilian economy in 1891. Efforts to build a dynamic banking system suffered serious disruption in the midst of these crises. Existing historiography considers the banking and securities markets separately, and almost completely neglects the domestic effects of the currency crisis. The fullest considerations of the crisis available, Levy (1980) and Franco (1987), recognize shortcomings of traditional explanations of the domestic money markets to explain fully the timing, depth and duration of the crisis.[1] This paper looks at the effects of crisis in two other important financial markets to amplify our understanding of the banking crisis of the early 1890s. First, it explores domestic equities markets (in Rio de Janeiro) during this tumultuous period in more detail than has been possible previously. Despite the reputation of the Rio de Janeiro Bolsa de Valores for having contributed to financial instability, this belief has not been rigorously tested. Data presented here illuminate important aspects of the crises, while they also diminish the conclusion that the equities market was a source of fundamental economic crisis at this time. Securities' prices, a re-evaluation of the level of activity and institutional constraints to domestic financial market development provide the underpinnings of this argument. Secondly, the paper suggests an alternative framework for considering the crisis that gives more weight to international financial markets than previous interpretations that have used concepts deriving from the traditional quantity theory of money. Articulating a hypothesis of a strong connection between failure in international and domestic markets, this paper outlines mechanisms by which international crisis detrimented domestic financial markets. This paper is, itself, incomplete in that it rests on the evidence of the timing of crises, an assessment of institutional factors and a theoretical construct, rather than the conclusions of an empirical model.[2] Its purpose is, more modestly, to suggest a perspective different from prevailing scholarship. This story suggests re-interpretation of an important episode of Brazilian economic history that more completely integrates the complex interactions of multiple financial markets. At the same time, it offers an important historical case study of the transmission of crisis among markets that resonates with recent experience among emerging markets.

Almost simultaneously with the introduction of republican government in November 1889, the economy experienced a spurt of economic dynamism unlike any in its previous history. "Encilhamento" refers to the saddling up of the horses, getting them ready to break out of the opening gate, in Brazilian horseracing circles; it is also a slang term connoting the period in Brazilian economic history, beginning in 1889, when monetary and stock market expansion seemed unrestrained. The Encilhamento has earned a place in Brazilian popular history; a lively literature connects a widespread freewheeling, deal-doing, "get rich quick" lifestyle of dubious ethics to the expansive financial markets.[3] The crash of the Encilhamento was not long in coming; 1891 saw collapses of the exchange rate and the stock exchange and massive failures of the companies on the exchange. Despite this experience, some historians find that both private economic agents and government policy of the early 1890s actively contributed to long-term substantive and positive transition during the 1890s (Haber 1997, Fishlow 1972).[4] Transition was not smooth. The macroeconomic data suggest that standards

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[1] Franco (1987) is explicit in this conclusion; Levy's (1980) conclusions implicitly recognize the need for additional explanation.

[2].Data of sufficient quality and consistency and an operational model require further theoretical and empirical research. Previous historiography, such as Peláez and Suzigan (1976,) Levy (1980,) and Franco (1987), offer use the traditional quantity theory approach to explain monetary history.

[3] Good examples include: Taunay (1971); "Diário de um Zangão," *O Tempo* (24 November 1891); Carvalho (1892).

[4] Elsewhere, Fishlow (1989) characterizes Brazilian financial problems of the 1890s as "developmental" in nature, rather than driven by "revenue" problems. The precise distinction between these characterizations remains unclear. Lobo (1976) emphasizes that the exchange of financial for real assets that resulted from the inflationary environment contributed to the formation of productive facilities; she finds that approximately 50% of the industrial companies operating in Rio de Janeiro in 1907 had been formed during the Encilhamento.

of living, as indicated by real GDP and GDP per capita, suffered sharp falls from 1891 to 1893 (as much as 26 and 30 percent, respectively) and the price level increased between 50% and 100%.[5]

The financial system was of particular importance for economic reformers, even before the introduction of the Republic. A long-term concern with creating the conditions conducive to establishing banks was seen as a crucial factor in easing the flow of money and capital to areas where commercial activity was constrained by lack of circulating currency and to investments of emerging importance (Barbosa 1892: 152-156, *RC*, 1891: 3; Peláez and Suzigan 1976: 144). Expansionary monetary and bank reforms in November 1888 and early 1890 led to inflationary money growth.[6] With policy that was "flagrantly contradictory" (Franco 1987: 63) monetary authorities both committed to maintain a fixed exchange rate on the gold standard and expanded bank note issuing rights in 1888. Reforms of January 1890 consolidated the regional distribution of note issuing rights with three banks. The Banco do Brasil maintained its role, while note issuance also became concentrated in the Banco Nacional (and shortly after, the Banco dos Estados Unidos do Brazil); gold supported 50% of their nominal value Bank notes increased three-fold within four months. The nominal money supply doubled between 1889 and 1890; and then, it almost doubled again the following year.[7] In February 1891, the merger of the Banco Nacional and Banco dos Estados Unidos do

Nevertheless, as Fishlow (1980: 103) recognizes elsewhere, Brazilian industrial structure remained quite rudimentary as late as the outbreak of World War I.

[5] Respective data sources are Goldsmith (1986: Tables II-1 and III-1), Catão (1992: Table 1), Contador (1974: p. 264) and Villela and Suzigan (1973: Table VII.) The sharp declines in GNP estimates occurred after rapid increases in the previous years. While these data are of dubious quality, and ought be interpreted only very roughly, their direction and order of magnitude are consistent across most sources. The order of magnitude of the decline suggests serious declines in real standards of living. Peláez and Suzigan (1976: 157) also makes the point that real standards of living declined from 1892.

[6] Brasil *Leis e Decretos* (Decretos Nos. 3403, November 1888 and 164, January 1890. Hereafter, cited as *Leis.*)

[7] Existing notes outstanding by other the multitude of banks – from the 1888 monetary law remained in circulation, if with declining acceptance. (Franco 1987: Table 21). See *Jornal do Commércio* (22 February 1891; hereafter cited as *JC*) for an indication of reluctance to accept old out-of-region notes.

Brazil became effective, creating the Banco da República.[8] Because of their regulatory reform, national banks contributed significantly to the increase in money. The share of the money supply from bank deposits moved from 47 to 74 percent between 1888 and 1890. Note issuing authority changed twice during these three years, indicating both monetary and institutional instability.[9] Some find the monetary expansion to be the defining characteristic of the Encilhamento (Bouças 1950: 141, Peláez and Suzigan 1976: 143-45).

In January 1890, revision of the Commercial Code vastly eased the formation of limited-liability joint-stock corporations.[10] Some authors, focusing on the unrestrained speculation (and a fair amount of fraud) in financial instruments of the new corporations, have viewed the period as a "bubble."[11] Because of the eased money supply, investors chartered banks and traded equity shares of banks much more than other types of businesses. The number of corporations registered on the Rio de Janeiro Bolsa de Valores realized a net increase of 61 between 1888 and 1890; 30 of these companies were banks.[12] Nevertheless, industrial, infrastructure and other types of companies also swelled the ranks of the exchange.[13] The growth of joint-stock corporate formation and trading in equity shares has led other scholars to typify the Encilhamento as a period of fundamental economic development and industrialization, with the collapse of financial markets providing a negative shock that fuelled an early period of import substituting industrialization (Fishlow 1972: 311-

[8] This action was authorized by *Leis* (Decreto 1154, 7 December1890). The Banco da República registered its first note issuance in February 1891, and it began trading in the secondary securities markets in March 1891.
[9] The monetary laws of 1888 and 1890 transferred note-issuing responsibility. Another change occurred in 1891.
[10] *Leis*, Decretos Nos.164 and 165. Haber (1998 and 2000) focuses on the increased efficiency and productivity for incorporated textile concerns as a result of the institutional changes embedded in the reformed Commercial Code.
[11] *Economist* (23 May 1891: 663), Lobo (1976: 261-301), Levy (1977: Chapter 4).
[12] As with businesses in other sectors, it is not possible to distinguish between newly formed banks and the re-organization of pre-existing *casas bancárias* into limited-liability joint-stock firms. Both were represented among the banks listed on the Rio de Janeiro Bolsa.
[13] These data represent the surge in corporate formation. They should not be interpreted as new business formation, since many (though an undetermined number) were existing businesses that re-organized to take advantage of the eased ability to form limited liability joint stock companies. These also represent the net change; the number of companies failing during these years is not readily available.

65.) From a long-term perspective, these results may have been attained. At the time, such possibilities were not clear.

Abandoning a commitment to the gold standard was the third component of republican financial reform in January 1890. As a small open economy, the real (international) value of the mil-réis was a crucial component in determining the profitability of exports, the ability to import goods not manufactured in Brazil and access to international capital (whether through loans to the public sector or direct investment in plant and equipment [Franco 1987, Suzigan 1986: Chapter 4.]) At the introduction of the Republic, international currency markets valued the Brazilian mil-réis at 27-3/8 pence, slightly above the par value of 27 pence that the Brazilian government had established in committing to the gold standard in 1888. (See Figure 1.)

In January 1890, the abandonment of the gold standard triggered a sharp decline of the mil-réis's international value. Then, after a short, strong improvement later in the year, the mil-réis went into unmitigated decline, which did not ameliorate until the military coup of November 1891 that brought Floriano Peixoto to the Brazilian presidency, when the value of the mil-réis had fallen to 10-7/8 pence. Despite a short and sharp reversal at the end of 1892, the mil-réis did not recover for the remainder of the decade. I have argued elsewhere that this currency crisis had roots in the conjunction of vulnerabilities in the Brazilian economy with conditions in international financial markets that reacted very strongly to the Baring Crisis of 1890 (Triner 2001).[14] Brazilian difficulties coincided with and mirrored the strong global deflation of the 1890s. Depressed prices and trade were widespread. Further supporting the hypothesis of crisis entering Brazil via international markets, Franco (1987: chapter 4, Tables

[14] The fundamental cause of the long-term problem is more difficult to unravel. Immediate contagion from the shock of the specific crisis of the Baring Brothers failure, recession in British financial markets and long-term trade disruptions combined to have mutually reinforcing effects in international, with effects spreading far beyond Brazil.

A.2 and A.6) has documented the collapse of capital inflows into Brazil from 1890 and the reversal of the current account.

The banking and securities exchange crises that began within a few months of the events in international markets have received consideration as independent circumstances. However, the international value of the mil-réis and associated fluctuations in international capital flows had crucial and immediate effects within domestic financial markets that merit scrutiny. The tumultuous events within the banking sector and domestic securities markets (the Bolsa de Valores) need to be considered within the context of international events.

The Data

This paper uses data from domestic banking, equities markets in Rio de Janeiro and international currency markets[15] in order to explore the inter-related components of the financial system. Exchange rate data are taken from, and explained in, Triner (2001. Figure 1.)

Data availability has seriously limited historiography on the role of the market for publicly traded securities in the Encilhamento's crash. Existing research has relied on published information covering annual trading volume and companies registered to trade on the Rio de Janeiro securities exchange (Bolsa de Valores).[16] Registration on the Bolsa de Valores communicates little about the actual trading of shares; i.e., investors' on-going expectations for the organizations. The volume and price of shares traded offers this

[15] The raw exchange rate and equities' price data are reported with weekly frequency. For purposes here, they are averaged or taken as representative of specific dates, as appropriate. Banks did not issue debentures. Further, the trading of debentures on the Rio de Janeiro Bolsa de Valores took place on only a very small scale. Remarkably little research has been undertaken on securities exchanges in Latin America. Among the few pieces are Quiroz (1989), Riveroll González (1994), Zuñiga (1988), Couyoumdjian Bergamil (1994) I thank Carlos Marichal for helping me to track these titles.

[16] Levy (1977: Chapter 4) offers the only approximating set of data. The data that Levy presents come from Câmara Syndical dos Corretores de Fundos Públicos da Capital Federal. These reports do not document the data. Although it is not possible to directly compare the weekly and annual data, the annual series of share-trading seem to be reported in thousands of units (but not identified as such.) By limiting data to the Rio de Janeiro Bolsa, activity on the emerging São Paulo Bolsa is lost. While, in subsequent years, the São Paulo financial markets became much larger than those in Rio de Janeiro, indirect historical evidence and logic do not suggest that to have been the case in the 1890s. While most of the securities listed and traded on the Rio de

information. High frequency data on the prices of securities in the secondary market have been notably lacking.[17] This paper introduces a newly collected price series for the banks on the Rio de Janeiro Bolsa de Valores, based on weekly observations (as of each Friday. See Figures 2 and 3.)[18] Data cover only trading in bank equities, reflecting the focus of this paper.[19] Further, because banks were the predominant sector to organize on the early Bolsa (see Table 1), any explanation of the crash of the Encilhamento must have explanatory value for limited-liability joint-stock banks. Much of the more detailed data presented here supports earlier conclusions about the nature of the crash; however, the new information emphasizes the very limited scope for the crisis in the Bolsa de Valores.

The equity shares of few banks traded regularly. A consequence of the limited number of banks whose shares actually changed ownership is that the indices fluctuate radically on a weekly basis, depending on the particular group of banks traded at any given time. On the busiest days during this "boom," no more than fifteen banks saw shares change ownership; three to six banks were more common. In order to ameliorate the extreme fluctuations that result from averaging across a varying set of a few organizations, the weekly trading data have been aggregated to the monthly level. The shares of the national – major note-issuing – banks are reported separately from private banks because of important differences in their trading patterns.

Janeiro Bolsa were incorporated within the state, other large Brazilian enterprises also listed their securities on the exchange. Therefore, to the extent that a national financial market existed, it was located in Rio de Janeiro.

[17] The first index of the Rio de Janeiro Bolsa was constructed in 1966, and the first São Paulo index begins in 1968. I thank Francisco Vidal Luna for his help in tracking this information (private communication, 5 May 2001.) The shortcomings of data on the volume of equities trading are outlined in note 16.

[18] Trading data for each bank, as of Friday of each week has been aggregated to a monthly basis. Semi-annual listing of bank registration and dividend payments tracks the existence of open banks. A short Appendix documenting the data and its constraints is available from the author upon request. The limitation of data to Friday trading is likely to have left out some organizations whose shares did trade. However, an actively traded bank should have an equal chance of trading on Friday, as any other day. This measure holds as an indication of the paucity of trading.

[19] Even so, it is necessary to be open to possibility that banks performed differently on Bolsa than non-banks. While this data may provide a useful starting point for a larger project on the quantifying the historical experience of the Bolsa de Valores, resource constraints have prohibited, to date, such a large undertaking.

The only published data on the size and structure of the banking system for these years, limited to total deposits and cash balances on a quarterly basis, do not document their composition adequately (Brasil IBGE 1990: Chapter 10). Uncertainties limit the use of these data;[20] but, they suggest the contours of the banking system and its changing size. Monthly data on the national banks (with note issuing rights and fiscal agency responsibilities) have been collected from the Rio de Janeiro business press to supplement the quarterly data of the entire banking system.[21] These data serve as measures for the size and structure of the banking system for the years under study. Additionally, when considering the effect of devaluation on banking, the paper uses a measure of the "real" size of the banking system, expressed in pound sterling.[22]

Finally, the financial press and pamphlets of the day, as well as organizational and personal archives, offer rich insight into the ideas and experiences of the crash.[23]

Banks on the Rio de Janeiro equity market

Markets for publicly traded securities, representing share ownership and debt of limited-liability joint-stock corporations offered an opportunity, in parallel with banking, to encourage and intermediate the flow of capital. Apparently, the new Commercial Code of

[20] Aggregate estimates of demand deposits and cash balances are consistent with sample comparisons. Independent collection for sample comparisons suggest that, for example, term deposits contain categories of liabilities additional to term deposits by private sector customers, such as deposits that may have been placed with banks in special programs. In addition the published data report balances for Banco do Brasil separately. However, for the period of this paper, the Banco do Brasil exercised only a limited role as a national bank; other organizations were more important in this function.
[21] One requirement for banks to trade securities on the Bolsa de Valores was to publish (unaudited) balance sheets monthly in the local business press. These balance sheets have been used to track, on a monthly basis, the volume of note issuance, demand deposits and cash balances of the banks that served as the national banks (those with note issuing rights, at any given time). The collection efforts to accumulate data for all of the banks listed on the Bolsa, and publishing their balances sheets, and covering the asset side of the balance sheet, extended beyond the resources available for this study. The note-issuing national banks during these years included the Banco do Brasil (throughout the period) the Banco Nacional and Banco dos Estados Unidos (January 1890-January 1891) and the Banco da República (from February 1891.)
[22] Because the balance sheets represent data at a point in time, the analogous date for the exchange rate, rather than averaging the rates over a period of time, is used.
[23] These sources include the *JC* (the major Brazilian business newspaper, various issues), and its annual publication, *Retrospecto comercial de Jornal do Commércio* (hereafter *RC*), the prolific papers of Rui Barbosa, the first republican finance minister, the annual reports of the (Brasil. Ministério da Fazenda, (various issues, hereafter MFR) and (retrospectively) the annual reports of the stock brokers' association, (Câmara Syndical dos Corretores de Fundos Públicos da Capital Federal, various issues, hereafter *Corretores*) and the *Economist*.

1890 did facilitate the formation of joint-stock banks.[24] The benefits of limited-liability incorporation and the ease of share exchange, combined with anticipations of rapid economic growth that predominated in these years, encouraged, or at least coincided with, the expansion of registrations on the exchange. Almost immediately, a strong increase in the trading of securities in the secondary market also began (see Table 1.) Subsequent efforts to regulate the exchange quickly dampened the frenzy of corporate formation and equity trading.

By October 1890, after only nine months with the new Commercial Code, legislation first attempted to regulate publicly registered joint-stock companies. To curb under-capitalized and fraudulent corporations, paid-in capital requirements for publicly registered and traded companies increased from 10 to 30 percent of statutory capital. Calls for additional amounts from the unpaid portion of the statutory capital required significant incremental resources from investors. Investors resisted the requirements, and ultimately, the inability to meet capital requirements forced many of the new organizations to close (*RC*, 1891: 7, Levy 1977: 169). Then, in February 1891, a transaction tax imposed on share trading and a tax on dividend payments explicitly tried to slow trading on the Bolsa de Valores.[25] The costs imposed by these regulations motivated stockbrokers to declare a strike. After three days without trades, the regulations were revoked. After the strike, share trading returned immediately to nearly the level prior to the reforms 15 months earlier, and the Encilhamento had "crashed" (Levy 1977: 168-171). The coincidence of timing ties the "crash" with the brokers' strike; however, neither existing historiography nor logic explains the connection.

[24] Peláez and Suzigan (1976: 143) find that, for Finance Minister Rui Barbosa, the Commercial Code reforms were the "fundamental objective" of the financial legislation, and that "Rui Barbosa's principal flaw, in spite of his grand vision, consisted of the lack of regulation…"

[25] These efforts were codified in *Leis* (Decreto Nos. 850, 1151 and 1362, respectively.) For their implications see Peláez (1971), Barbosa (1892: 88), Levy (1980 and 1977: Chapter 4). This tax drew universal opposition (*JC*: daily, 14-21 February 1891). Interestingly, however, the *Jornal de Commércio* argued vociferously against the brokers' because the brokers were employees/appointees of the federal Treasury. The insubordination of a strike by public servants stretched the acceptance of the newspaper (*JC*: 15 February 1891).

Neither does the collapse of share trading explain the disappearance of banks (or other firms) from Bolsa registration listings.[26]

Although banks were the type of firm most likely to incorporate and to see their shares traded, new banks formed only for a brief period. It was limited to, at most, a twelve-month period that spanned late 1890 and early 1891, encompassing the first attempts at regulation of domestic financial markets. During the three years from 1890 through 1892, 148 banks had been registered on the Rio de Janeiro Bolsa de Valores. (See Table 2.) Of these, only 36 (24%) had been registered at the end of 1889; eighty-five of the new banks appeared during the second half of 1890 and first half of 1891. Both Brazilian and foreign commentators exhorted the excessive formation of banks as being without foundation and often fraudulent (*Economist*, 23 May 1891: 663; *RC*, 1891: 7). In conjunction with the failed capital calls, historical analysis suggests that the new Brazilian banks registering on the Bolsa de Valores during the Encilhamento were under-capitalized (Neuhaus 1974: 4, Peláez 1971: 17-19). Indeed, the failure of share subscription for the proposed new Banco Ecléctico, despite prominent advertising during early 1891, was notable as a "rare moment of lucidity" (C*orretores*, 1905: 27-28; *JC*: notice pages, routinely through January and February 1891.) The possibilities for banking business seemed insufficient to keep all of them going. Banks also suffered proportionately from the subsequent crises on the securities markets (Levy 1977: 171 and Table 18.) Only one-half of the banks that opened during the brief spurt of new formations remained opened by year-end 1892; 36 (86%) of the failures occurred within their first year (Table 2.)[27]

An examination of activity in the secondary market for bank equities further delimits the Bolsa's role in the Encilhamento in a very few organizations. The equity shares of both national (note-issuing) and private banks began trading with increasing dynamism with the

[26] Levy (1980: 217-18) speculates that fear of new regulation and of spreading panic caused the sudden collapse.

change in the Commercial Code. However, with only one short exception, for the three years encompassing the Encilhamento and its crash, national banks dominated the trading activity. The difference in the trends for the national and private banks recommends considering each group separately (see Figure 2.) In contrast to the relatively continuous and active trading of national bank shares, of the 148 private banks registered on the Bolsa for any period of time from 1890 through 1892, only 65 executed any trades on the exchange (on Fridays.) Only ten of these organizations registered more than twenty Fridays when their shares traded over the three-year period. As with the experience of corporate formation, the pattern of share trading was chronologically concentrated. At any given time during the peak months of the Encilhamento's trading activity, just two private banks accounted for 50-85% of the shares traded.[28] (See Table 3.) The frenzied activity on the equities market during the Encilhamento represented the concerns of very few organizations.

National banks experienced a surge in volume at the end of 1890 (quintupling from November to December. See Figure 2.) The increase for private banks followed slightly later. However, in January 1891, private banks traded five times the number of shares as did national banks, and the multiple reached almost 15 in February, before falling to about one-fifth of the volume of trades in national banks during March. Prior to the brokers' strike in February 1891, the national note-issuing banks then in operation (Bancos do Brasil, Nacional and dos Estados Unidos do Brasil) usually accounted for about 40% of the bank shares traded. After March 1891, national banking (since consolidated in the Banco da República, with a residual and short role for Banco do Brasil) began a moderated decline in share

[27] The data do not reveal how many banks closed because of failed calls for additional capital to meet the enhanced requirements for paid-in capital.

[28] The included in this group fluctuated among the period's most actively traded organizations: Banco Constructor, Crédito Movel, Banco Sul Americano amd Crédito Universal. None of these organizations continued as independent banks by the end of the decade. Their individual corporate histories merit further research. The dearth of share trading could have resulted from the small size of the potential market for equity ownership or because potential market participants were not confident in the rights of share ownership, because many potential participants did not anticipate that prices would continue to increase. We do not know enough about the internal working of the exchange to have addressed this question.

trading; the change was more dramatic for private banks. After the brokers' strike, trading for all private banks, combined, rarely reached the volume of the national banks (by then, Banco do Brasil and predominantly Banco da República.) By the end of 1892, the trading of private banks' securities was about one-half the level of the beginning of the period; and the value of the trades had fallen to about one-fifth of their previous value.[29]

The total value of private banks trading on the Bolsa demonstrated a trend similar to the volume of their trades (Figure 2.) Belying the sense of euphoria conveyed by the aggregate volume of shares traded, investors did not believe that banking organizations were becoming significantly more valuable. The measure of investors' assessments of the change in the average value of banks, the ratio of market to book value of the private banks' equity shares (weighted by volume of trading), remained relatively steady through 1890. Between December 1890 and February 1891, the ratio of private bank market-to-book prices increased 3½-fold, moving from 1.25 to 4.63. The peak represented a recovery from an equally sharp fall during the preceding two months. In the following month, the market-to-book price ratio of private banks dropped back to 1.37, and began a long, more modulated decline. With increased capital requirements, a few stronger banks were able to realize a larger proportion of their statutory capital. The base measure of book value shifted, rather than the market price. The sharp increase of average bank share prices in January 1891 represented a short recovery from the decline they had suffered from September through December (Figure 3.) Some of the decrease of the market-to-book value of private banks after February 1891 reflected the increased investment required for banks to remain on the exchange, rather declining share prices.

The trends of equities trading and share prices do not support an interpretation of the reversal in the equities market as an event with fundamental implications for economic

[29] Levy (1977: Chapters 4 and 5) indicates that bank equity trading did not recover for the remainder of the

growth.[30] The banks whose shares traded on the exchange did see their value collapse. However, with few organizations actively traded on the exchange, their overwhelming effect was simply the result of small numbers.[31] Further, to suggest that the inability to maintain their capital, for the large number of banks appearing only briefly on the Bolsa, represented a widespread failure of banking or securities markets implies the prior functioning of these markets that stretches the imagination. The unique position of the Encilhamento as a stock exchange phenomenon in Brazilian economic history derived from its timing as the first modern stock market reversal, rather than its magnitude. The experience was highly visible and introduced a strong note of caution in financial policy and practice that served through the remainder of the decade.

Institutional constraints

Brazilians were aware of the need to create transparent and de-personalized financial markets, even as they experienced the difficulties of doing so. Requirements for public disclosure of financial statements and the encouragement of limited-liability joint stock corporations were among the measures that reformers invoked to address these issues. Nevertheless, institutional constraints remained that inhibited both the securities markets and the banking system from operating smoothly. The most important of these problems were instances of crony capitalism, the intricate connections between national banks and the federal Treasury, and specific practices of financial reporting.

Simultaneously with the isolated experience of intense share-trading, allegations of fraudulent investment practices informed opinions about the most active banks (*Corretores*,

decade.

[30] The much more pronounced peaks of share prices during March and November of 1892 occurred during a time of even more severely constrained trading. It would be imprudent to conclude anything about these events. Events notable for monetary policy and the prospects of banking organizations around these dates were the constitution of the Banco da República (to take over as the national bank in issuing bank notes for Banco Nacional and Banco dos Estados Unidos do Brazil in March) and the political coup of November, ushering in the Floriano Peixoto regime. Neither do these findings give confidence that sectors other than banking realized different trends.

1905: 10-19). Banco Constructor, the most active equity market participant in Rio de Janeiro, found itself at the center of a prolonged legal case and political scandal. A prominent and politically influential entrepreneur, Francisco de Paula Mayrink, was the largest shareholder of Banco Constructor; he became the first president of Banco da República in 1891; and he was the president of the Companhia União Sorocabana e Ituana (a major railroad conglomerate.) Banco Constructor became mired in a case that involved the possible settlement of fraudulent bonds of one of the smaller companies that merged into the railroad group. This scandal continued to plague Banco Constructor, until the Banco da República assumed its bonds in 1897 (*Corretores*, 1905: 19-24.) In a similar case, another of the actively traded private banks during this crucial period, the Crédito Universal "was nothing more than a section of the Companhia Geral de Estradas de Ferro no Brazil," another railroad company implicated in the redemption of fraudulent bonds (*RC*, 1891: 5 and 1892: 8 and *Corretores*, 1905: 29-31.)

Perhaps a more important manifestation of crony capitalism operating throughout the financial system again involved Banco Constructor. When Banco da República received its monopoly as the national note issuing bank in February 1891, its charter prohibited the continuation of its predecessor constituent banks' investments in equities and debentures. Banco Constructor assumed these assets. At the time, this was seen to result directly from Mayrink's involvement.[32] Coincident with this transfer, Banco Constructor's share price and ability to find buyers on the exchange plummeted. These experiences, and their occurrence in February-March 1891, suggest the revelation of fraudulent business practices as an important

[31] The longer-term implications for the development of the securities exchange as an effective institution for diversifying the sources from which capital could be accumulated extend beyond the scope of this paper.

[32] Franco (1987: fn 569 and 573). This transfer of assets may explain the frenzied trading of Banco Constructor in February 1891, immediately prior to the chartering of Banco da República. The story became more complicated when the Banco da República assumed assets from failing banks through the 1890s, it re-acquired these assets.

interpretation of the surge of sales and collapse of share prices among a small universe of private banks.

The different patterns that prevailed for national and private banks were important in defining the role of the public sector in the financial system. The high failure rate and the inability to sustain a dynamic volume of share trading among private banks demonstrated that new forms of corporate organization were not sufficient to coalesce quickly a network of strong banks. In contrast, declining estimates of their value did not result in investors abandoning the national banks with monetary authority. The average share price and the ratio of market-to book-prices for national banks equaled the decline realized by private banks (if at a more stable rate. See Figures 2 and 3.) Until January 1891, the national banks realized a fairly strong increase in market-to-book value, compared with private banks. Immediately after the short spike for the private banks in February, in the face of the Banco Constructor scandal and with the beginning of share-trading for the Banco da República, the apparent strength of national banking intensified. Investors valued its shares above their par value.[33] The decline of trading volume was both significantly less and more gradual than that realized by the private banks. Although the ratio of market-to-book price declined through the remainder of the period, the shares of the Banco da República and Banco do Brasil continued to trade at a relatively stable rate after the collapse of share trading among private banks. Investors accepted lower returns, while continuing to own and trade shares of the national banks. They were not willing to do so for private banks, as indicated by the inability of many private banks to execute their calls for additional capital and their disappearance from the Bolsa listings. What motivated this difference?

[33] As with all of the national banks, Banco da República was organized as a joint-stock company, with ownership divided between the private sector and the federal Treasury. On 13 March 1891 (the only Friday in March with trades posted on the Bolsa), the average price was 231 mil-réis, full par value of the shares was 200 mil-réis and the amount paid-in was 150 mil-réis. Through April, the price drifted down to the (full) par value of 200, though the requirement for paid in capita was 175 mil-réis.

The two fundamental distinctions between national and private banks during these two years were the ability of national banks to issue bank notes and the increasingly strong links between the federal Treasury and private actors who were owners of the national banks.

As the Treasury transferred monetary authority to publicly traded banks, the banks became the agents for monetary policy. Note issuance gave the national banks both the ability to create resources and a source of business that private banks did not have. National banks actively pursued their rights, as the Treasury intended. The formal managerial and financial ties between the new bank and the Treasury were both controversial and deliberate, (*JC*: editorials and readers' letters [retrospectively], 15-19 November 1891, Franco 1987: 31-133.) Public rhetoric supporting the bank emphasized two goals. While providing a conduit for executing monetary and exchange rate policies, the Banco da República also was intended to have the resources, policies and goals to expand credit for emerging economic interests (*RC*, 1891: 4; Barbosa 1892, p. 255; MFR: 211). These ties also had fundamental implications for the structure of the banking sector.

The resulting growth of national banks, relative to the private organizations derived primarily from note-issuance capacity, the benefit from private sector commercial banking activity (deposit-taking.) was more modest. (See Figure 4.) In exchange for the note-issuing monopoly[34] and exclusive rights as the Treasury's fiscal agent, the new Banco da República constrained its private sector business activities to commercial banking – deposit-taking and short-term credit. The bank agreed to refrain from investing in private corporation equity shares and debentures. Further, the Treasury appointed the majority of the board of director

[34] The notes were guaranteed by one-third of their nominal value in gold and one-third in Treasury bonds (4% apólices.) In addition, the legislation creating Banco da República (*Leis*, Decreto 1154, 7 December 1890) provided for the redemption of Treasury-issued notes within five years of the formation of Banco da República. Redemption had not begun by the end of 1892. (Figure 4.)

membership (including the president and director of foreign exchange.[35]) Finance Minister Rui Barbosa used this opportunity to appoint Francisco de Paula Mayrink, his close colleague and the major shareholder of Banco Constructor, as president of Banco da República. These were the arrangements under which Banco da República divested of its predecessors' equities and bonds, transferring the assets to Banco Constructor.

Private sector ownership, with consensus management between public and private sector and notes backed by a combination of gold and apólices, offered the possibility to build a national bank that committed to manage money growth, while maintaining secure business practices. However, instead of building a credible commitment to conservative note issuing practices, the expansionary monetary goals reinforced the declining value of the mil-réis. Economic observers developed the opinion that the inability or unwillingness of the Banco da República to control the money supply contributed significantly to the coup of November 1891 (*RC*, 1891: 5; *Economist*, 7 November 1891). The responsibilities that the national banks (with private ownership) undertook, the subsidies they received in business monopolies and access to profitable activities, and the personnel ties between bank management and the Treasury communicated a commitment by the Treasury to sustain the national banks, while allowing private banks to fail. Investors could interpret this arrangement as an investment that could deteriorate in response to short-term conditions, but would not fail.[36]

Such a commitment to maintain a specific organization was valuable to investors because the financial circumstances of banks remained opaque during these years. Two related accounting practices used by both national and private banks made it impossible for

[35] The monopoly of note issuance rights suggests the emergent role of the Banco da República as a central bank though without the responsibilities of a lender of last resort. The appointment of directors by the Treasury makes explicit that the bank was not to be politically independent (Franco 1987: Chapter 4.)
[36] This interpretation also gives a new perspective to the spectacular collapse of the Banco Constructor's share price, coincident with the opening of the Banco da República. Given the very fragile state of financial markets,

the public to develop an informed opinion of their soundness and accentuated their risk. It was very rare that banks explicitly identified credit issued to failed (or failing) borrowers by transferring them to a "non-performing loan" category on their balance sheets.[37] Further hiding their declining value, banks also did not "mark to market" their assets (report assets and liabilities at their current market value, rather than the price at which they acquired them.) Widespread engagement in universal banking (including investing in corporate equity shares and debentures) exacerbated the problem of not reporting their assets at current market prices. The recourse available through collateral pledged against short-term credit transactions of commercial banking was not available to protect against the declining value of other financial securities. On the other side of bank balance sheets, liabilities responded quickly, through requirements to honor deposit withdrawals, to market declines.

These accounting practices effectively hid the results of crony capitalism during the expansive period of the Encilhamento. However, currency depreciation, inflation and rapid business failures revealed the serious overstatement of bank balance sheets. The imbalance between liquid liabilities and over-stated, illiquid assets (including declining investments in equities and debentures) concerned investors. The effects of institutional weaknesses and crony capitalism became obvious. For the banking system, these accounting procedures enhanced the value of the Treasury's explicit guarantees through monetary authority and implicit assurances of personal arrangements in support of the national bank. Guarantees gave comfort that the Treasury would not allow the national banks to fail even in the face of severe leverage problems and over-stated balance sheets. The collapse of the bank equities

investors correctly perceived that Constuctor received the declining assets of the new bank. Nevertheless, the bank did not go into bankruptcy until 1897.

[37] Standard accounting practice in most countries at the time was to isolate failed credit in a "non-performing loan" category. At year-end 1889, non-performing loans of national banks accounted for about 6% of their total liabilities. In what can only be seen as a strategy of financial reporting, non-performing loans for the national banks fell steadily through 1890. In April 1891, national banks' non-performing loans were less than 10% the level reported the previous month – a result of not transferring these assets to the Banco da República when the Bancos Nacional and Estados Unidos do Brazil merged. Reported non-performing loans did not reach their

market effectively revealed the need for wider institutional reform, even if its financial impact may have been smaller than previously appreciated. The depth and duration of the financial crisis still require exploration.

Currency Depreciation – An Alternative Story

From the beginning of the Republic in November 1889 through the end of 1892, the value of the mil-réis fell from 27-3/8 pence (slightly above the gold standard par of 27) to a low of 10½ pence (in August 1892, recovering to about 13½ pence at the end of the year. Figure 1.) For the rest of the decade, periods of recuperation were rare, short and partial. Brazilian domestic monetary policy, alone, was sufficient to cause concern among investors. However, two important factors suggest that international markets influenced Brazilian experience significantly. First, the timing of exchange rate trends often did not correspond to the chronology of domestic monetary policy. Significant examples occurred with the apparent effect on the mil-réis of the Argentine debt default and the sharp, permanent break of the mil-réis, coinciding exactly with the failure of the Baring Brothers banking house.[38] The second factor implicating international markets in Brazilian decline was the global deflation that significantly dampened economic activity and prices of goods and money world-wide through the 1890s.[39] Early republican Brazil was an economy open to trade and capital flows; therefore it was also open to the problems generated by disruptions to those flows.

For banks, currency crisis manifested on London foreign exchange markets during the second half of 1890 would have effects that thoroughly anticipated the widespread failure of domestic financial markets. The mil-réis loss of about two-thirds of its initial value, before reaching the low during 1892, and caused banks to suffer onerously. Decomposing changes in the real size of the banking system, measured in pound-sterling, offers a simple

year-end 1889 level again until August 1892. The intervening history renders such an outcome extremely unlikely.

[38] Triner (2001) offers a detailed tracing of the exchange rate and monetary policy histories of the Encilhamento.

demonstration of the effects of the currency depreciation on nominal growth of the banking system.[40] This procedure allocates the distribution of the real change, measured in pound sterling, between changes in the nominal size of the banking system, denominated in mil-réis, and changes in the value of the currency (as well as the effect of the interaction between the changes of the rate and volume variables.) Both the volume of banking liabilities and bank capitalization can usefully represent the size of the banking system. This exercise highlights the order of magnitude of the effects of depreciation on the banking system and offers a sobering perspective. It eliminates almost all of the growth of the banking system

Although the total nominal value of demand deposits more than doubled from 1890 through 1892; the real increase was only 29%. (See Table 4.) The effects of depreciation (and the interaction between the rate and the volume change) consumed 109% of the (original) deposit base for the entire banking system, from the beginning of 1890 through 1892. During the period from the exchange rate's peak to its trough of the exchange rate (second quarter 1890 to second quarter 1892), the total real value of bank demand deposits declined slightly (4%) because of depreciation. The nominal volume growth from note issuance and from the privileged market position in attracting deposits, allowed for substantial real growth (54% for the full period, 6% from peak to trough) of the national banks, magnifying the benefits of their protected status. Not only did generous note issuance add to their balance sheet, greatly in excess of the exchange depreciation, but their ability to attract deposits more readily than the private banks contributed to the positive volume effects. Such benefits did not accrue to the private banks. The positive impact of volume growth for national banks was about 20%

[39] See Sussman et. al. (2001) for a demonstration of the general decline in the value of money internationally, and Marichal (1989) on the effects in Latin America.

[40] The use of pound sterling to determine the "real" value of the banking system recognizes the fluidity of open currency markets during the 1890s. As the mil-réis lost value, economic agents active in financial markets could freely choose to transfer their currency and investments to assets that benefited from firmer and more stable currency valuations. The pound sterling was the "hard" currency of international valuation at the time. The concept and calculations used here to allocate the volume and price effects are those introduced by Friedman and Schwartz (1963) and used widely since then, to analyze the changing composition of domestic money supply.

higher than was the case for the private organizations, from the peak to the trough of the exchange rate trend. For the full three-year period, the differential increased to 40%. Quite simply, money creation kept the national banks afloat, while the private banks floundered.

The implications of exchange rate depreciation are equally clear when considering the effects on bank capitalization on the Rio de Janeiro Bolsa de Valores. (See Table 5.) Looking both at all banks open on the exchange and, more narrowly, at only those "open and recently traded" defines bank capital by both its broadest and strictest feasible terms.[41] The results do not change substantively under the different inclusion criteria for calculating capitalization. Essentially, currency depreciation (including the interaction effect) accounts for the entire extent of the change in nominal bank capital during the Encilhamento and its crash (from year-end 1889 to year-end 1892.) The real par value of open banks increased only 15% over the three years (nominal increase was 85%, even after the failures of 1891 and 1892.) The increase in nominal value of open and recently traded banks was essentially offset by the falling exchange rate (and interaction effect.) Investors estimated the real value of these banks to be 3% higher at the end of 1892 than it was at the beginning of 1890. This valuation parallels the balance sheet findings. The surge and subsequent decline of capital invested in banking reflected the value of money, rather than the intrinsic productive value of bank credit.

How did currency depreciation work its detrimental effects through the Brazilian economy? At the turn of the twenty-first century, international financial economists have seen currency crises move among emerging markets of small open economies and the

[41] As earlier, banks are considered "open" if they were current on dividend payments. In Table 5, bank capital for all open banks is valued at the par value of paid-in capital. The stricter definition of banks that were "open and recently traded" included only those banks with "a last share price" quoted in the monthly *Jornal de Commércio* listing. (Caution is required here, since the *Jornal* did not identify its criteria for listing a "last price" quotation. Some of these last prices may not have been very "recent.") Nevertheless, using these price data to calculate the market value of capitalization allows a more refined perspective of investors' views of banks values. Data accumulation constraints impeded the shorter-term calculation (Q2 1890-Q2-1892) presented in Table 4.

subsequent widespread failures in domestic markets that have ensued. Recent research has addressed the mechanisms of transmission from international crises into domestic markets.[42] Although financial economists are far from coming to a consensus on these theories, the emerging trajectories of this research outline contours for understanding the domestic effects of crisis on international markets. Two processes contribute to the deterioration of domestic economic actors in the face of international financial disruption. Net capital inflows turn to outflows as international investors re-assess the risks of their declining investments and existing debt service obligations become onerous – the “transfer problem.” Further, the real value of assets and liabilities, measured in terms of hard currency, declines with the currency – the “balance sheet problem.” The balance sheet problem operates through several mechanisms. The declining value of assets contributes to a widespread contraction of sales and economic exchange, causing businesses to contract. In addition, balance sheet mismatches between highly liquid liabilities and illiquid assets cause leverage problems, with adjustment only at a much slower rate than the decline of currency value.[43] The transfer and balance sheet problems cause financial systems to move from a good equilibrium to a bad one (Krugman 1999: 33).

Attention to the inflationary response of public sector financial and monetary policy often focus on the government’s use of seignorage revenues from money creation to cover deficits arising in the face of currency depreciation. However, balance sheet problems – declining asset values – affect both public and private economic agents (Dornbusch 2001). For banks, problems are not limited to their own balance sheets. If the asset and liability structures of their borrowers are weak, those problems quickly transfer to the banks, in the

[42] Triner (2001) brief surveys recent literature on financial contagion among emerging markets and its application to Brazil. Krugman (1999) and Dornbusch (June 2001) offer the prominent ideas and survey emerging literature on the spread of crisis from the international to domestic arenas. Della Paolera and Taylor (2001) applies to the 1890 Baring Crisis in Argentina much of the theory to the only historical application.
[43] Balance sheet problems are not unique to crises in emerging markets; the reversal of capital flows exacerbates their effect. I thank Carlos Peláez for this observation (personal communication, 31 December 2001.)

form of increasing non-performing assets. Further, capturing increased seignorage is only one of the moral hazards that become obvious in financial crises. Within the banking system, negative outcomes of crony capitalism manifest in two forms (in addition to the effects of money creation) that can no longer be sustained during international financial crisis. Implicit guarantees from the government to banks are withdrawn and banks' investments in questionable entities fail. The combination of balance sheet problems and moral hazard seriously damages any commitment that financial institutions may have been able to demonstrate in support of their liabilities. In consequence, banks suffer magnified effects of financial crises.

Traditional historiography of the Encilhamento posits the increased money supply (and banking growth) as the result of autonomous domestic monetary policy and as the cause of currency depreciation. The alternative interpretation presented above, giving more importance to activity in international financial markets, outlines an interesting and useful perspective on the Encilhamento.

In 1890, the collapse of the value of the mil-réis in international markets began earlier than domestic crisis. Further, the discontinuous break in the exchange rate during 1890/91, and the subsequent trajectory of depreciation, follows the chronology of international disruptions at least as strongly as it parallels domestic events. Argentina's default on international debt payments and the subsequent failure of the Baring Brothers during the second half of 1890 were among the strongest determinants of the Brazilian exchange depreciation (Triner 2001.) Consideration of international monetary flows also serves to integrate the Brazilian experience with the widespread and prolonged international deflation, with its associated disruptions of commodity prices[44] and capital that began in the early

[44] Average coffee prices fell from US$0.20 per pound in 1891 to US$0.111 and US$0.065 in 1898, with devastating economic effects that re-inforced weakness in financial markets. The price did not reach US$.010/lb. again until 1910. (Fritsch 1988: Table A.6.)

1890s. In the subsequent international deflation, reversal of this decline became increasingly problematic.

As the mil-réis declined in value, depreciation transmitted its effects through the fragile domestic financial system. Transfer and balance sheet problems arose from the withdrawal of international capital and the devaluation of assets. Franco has demonstrated the transfer problem that abruptly and severely battered Brazil in 1890.[45] The state used money creation, through the banking system, to address its problem, implicitly passing the cost on to private economic agents, in the form of inflation generated by note-issuance. In this environment, the mismatch between relatively short-term liabilities and assets that tended to have longer (or indefinite) maturity structures was especially notable in banks as other economic agents – their debtors – failed. The flood of money creation that had encouraged the formation of banks could not be sustained. The combination of the early onset of currency depreciation, the demonstrated ability and willingness of the Treasury to commandeer the banking system, institutional constraints within banks and the contemporaneous global deflation could render newly formed, financially fragile banks unsustainable.

Conclusion

This examination of banking within the context of domestic and international markets for money and domestic securities reveals much about the financial system of early republican Brazil and about the crisis through which these markets passed. It suggests that international capital markets may deserve a larger weight in explaining domestic decline than has been recognized previously. The fundamental impact of depreciated currency in the open Brazilian economy exacerbated the vulnerabilities presented by small domestic markets and newly formed institutional arrangements. While the international crises of the currency and capital inflows may have been an important initiating event for domestic upheaval, circumstances within domestic markets were not conducive to stability. They easily cooperated with the crisis scenario.

The difficulties of establishing a financial system and institutional structures that encouraged long-term investment were severely affected by the response in the banking and money markets. The Treasury frequently re-arranged the rights and responsibilities of banking organizations to respond to short-term goals. Progressively monopolizing note-issuing rights within the Banco da República promoted the future formation of a highly concentrated system with strong public sector influence. This experience anticipated the continuing strong presence of the Brazilian state in all aspects of banking throughout the twentieth century. Nevertheless, examining the movement of bank equity shares and prices on the Bolsa reveals that the breadth and duration of the "crash" on the exchange was actually quite constrained. Privately owned banks formed and dropped out of existence quickly. Fundamental development within the capital market only came about slowly.

These arguments do not negate much of the research on the long-term economic effects for the changes of these years. The Commercial Code did enable corporate formation, and the strongest new companies did survive. Depreciated currency would encourage the substitution of domestic manufacture for imports, propelling incipient import substituting industrialization.

The crises both revealed and made opportune the extension of crony capitalism. This occurred among companies, as in the cases of banks supporting questionable securities transactions of railroads, and between the Treasury and privately owned banks. Opaque accounting practices with respect to asset valuation and recognizing bad loans further contributed to obscuring bank balance sheet problems. One result was to impede the formation of credible banking institutions until the first years of the twentieth century. Over

[45] After impressive increases in both foreign investment in both public and private sectors through the mid-

the course of more than a decade, the banking system recovered from this crisis in two stages. The Funding Loan of 1898 rescheduled Brazilian international debt, with stringent terms that severely constrained the domestic money markets. The Funding Loan probably precipitated a domestic financial crisis of larger proportion than the crash of the Encilhamento (Hanley 2002.) It also enforced orthodox monetary practices that responded to the exigencies of capital markets. The Treasury allowed the Banco da República to fail in 1900, in the wake of the contraction generated by the Funding Loan. The bank was still carrying the overstated assets acquired in the aftermath of the Encilhamento and they accounted for 55% of the affected balance sheet categories.[46] Then in 1906, in what can be seen as the final resolution of the Encilhamento, the Treasury re-committed to the gold standard, this time with the enforcement mechanism of a currency board, and to a restructured banking authority – the newly re-constituted Banco do Brasil.

This paper suggests a connection between crises in domestic and international financial markets that has not been previously articulated. It raises the possibility of causality running from the international to the domestic sector (or more likely, bi-directional causality.) The evidence of this paper rests on the timing of crises, an assessment of institutional factors and a theoretical construct. Although the current states of international financial theory and econometric methods render a testable model very difficult, the existing data and evidence point toward a causal relation that merits analytic testing with more detailed and chronologically consistent time-series data. An econometric model of this hypothesis could establish the direction of causation between changes in currency value (exchange rate) and the money supply (the banking system). A broader understanding of the short-term effects of the Encilhamento's crash offers a good opportunity to consider recent theoretical and historical work that suggests the inextricable linkages between domestic and international

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1880s, inflows stopped until the second half of the 1890s. (Franco 1987: Chapter 4, Tables A.2 and A.6.)

crises (Jeanne and Wyplosz 2001; Bordo and Flandreau 2001). The emerging theoretical research points towards the difficulty for an open economy to resolve its crises solely through domestic fiscal and monetary policy. In Brazil, resolution required fifteen years, with fundamental realignment of institutions governing domestic and international institution.

[46] Triner 2000 (Chapter 4, notes 31 and 32, p. 258.) When the Treasury allowed the bank to fail at the end of 1900, the annual report cited as one cause of the failure, the overstated assets that they still held.

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Table 1

Summary: Securities Exchange Trading on Rio de Janeiro Bolsa de Valores

	Total Trading		Banks on the Rio de Janeiro Bolsa de Valores		
	# Companies	Value*	# of banks	% total Companies	% total value traded
1888	53	1252	13	25	
1889	58	2310	21	36	
1890	114	4587	43	38	51.2
1891	61	6670	25	41	33.4
1892	42	3415	14	35	80.2
1893	43	1747	16	36	65.6

Source:

RJ Bolsa de Valores data: Levy (1977: Tables 16, 17, 18, & 24.)
* See footnote 16 for caveats to the raw data used here.

Table 2

Summary, Private Banks Registered on Rio de Janeiro Bolsa de Valores

NUMBER of banks			total	remain open year-end 1892	not open 1 year later
opened at year-end 1889			36	26	8
open during:	1st half	1890	11	7	1
	2nd half	1890	34	17	11
	1st half	1891	51	26	25
	2nd half	1891	11	10	1
	1st half	1892	4	3	Na
	2nd half	1892	1	1	Na
		Total	148	90	

PERCENTAGE			% of 1890 -1892 total	% banks opened in period: remain open year-end 1892	% banks opened in period: not open 1 year later
Opened at year-end 1889			24.3	72.2	22.2
open during:	1st half	1890	7.4	63.6	9.1
	2nd half	1890	23.0	50.0	32.4
	1st half	1891	34.5	51.0	49.0
	2nd half	1891	7.4	90.9	9.1
	1st half	1892	2.7	75.0	
	2nd half	1892	0.7		
		total	100.0		

Source: *Jornal de Commércio*, various issues
Note: Banks considered "open" are those current on dividend payments.

Table 3
Bank Share Trading on Rio de Janeiro Bolsa de Valores
During the Crash of the Encilhamento

	Number of shares traded		% of private bank trades by 2 largest participants	
	National	Private	%Shares	%value traded
Nov-90	4956	26564	86	84
Dec-90	25598	72752	74	82
Jan-91	22033	113488	50	53
Feb-91	9050	131288	85	82
Mar-91	17527	3275	42	36

Source: *Jornal de* Commércio; derived from data used for Figure 1.
Note: Data represent monthly sum of shares traded on each Friday of month.

Table 4
Composition Analysis:
Effects on (real) Bank Portfolios

	1890-1892			**Peak to trough (exchange rate) (Q2-90 to Q2-92)**		
	National	Private	Total	National	Private	Total
Cash						
%Real Change	-58	-11	-23	-32	-16	-20
%Change due to change:						
Exchange Rate	-64	-51	-54	-63	-58	-59
Volume	12	78	61	67	91	85
Interaction	-6	-38	-30	-36	-49	-46
Notes Issued						
%Real Change	159			46		
%Change due to change:						
Exchange Rate	-20			-42		
Volume	348			191		
Interaction	-169			-103		
Demand Deposits						
%Real Change	54	21	29	6	-8	-4
%Change due to change:						
Exchange Rate	-37	-44	-42	-52	-56	-55
Volume	176	126	138	126	104	109
Interaction	-85	-61	-67	-68	-56	-59
Exchange Rate, % change			-67			-77

Table 5
Composition Analysis
Effects on (real) bank capitalization

	1890-1892	
	Open banks	Open & recently traded
% change bank capitalization		
Nominal	83	70
Real	15	3
% Real Change due to change:		
Exchange Rate	-46	-49
Volume nominal capital	120	101
Interaction	-59	-50

Open banks: current on dividend payments
Open and recently traded: also have a "most recent price" listed

Figure1
Exchange Rate
(pence/mil-réis, month-end)

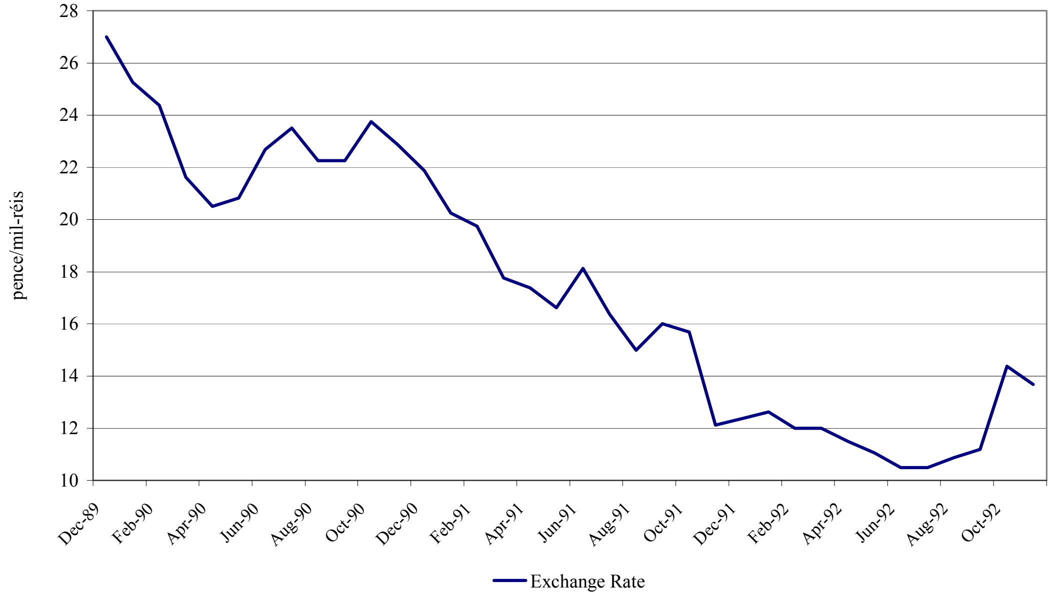

Figure 2
Indices of trading activity
January 1890=100

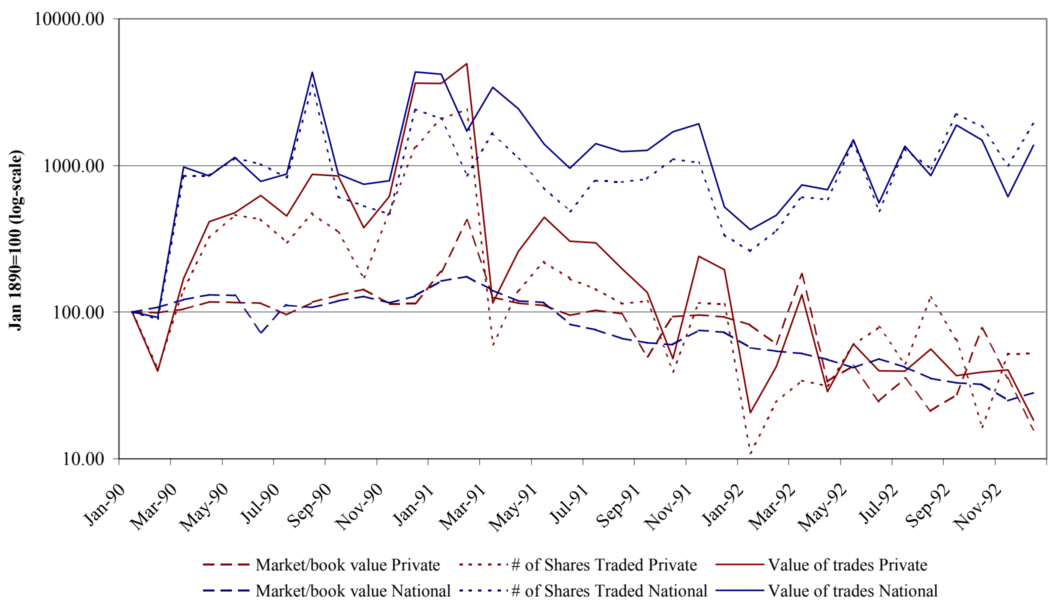

Figure 3

Average Price Bank Shares

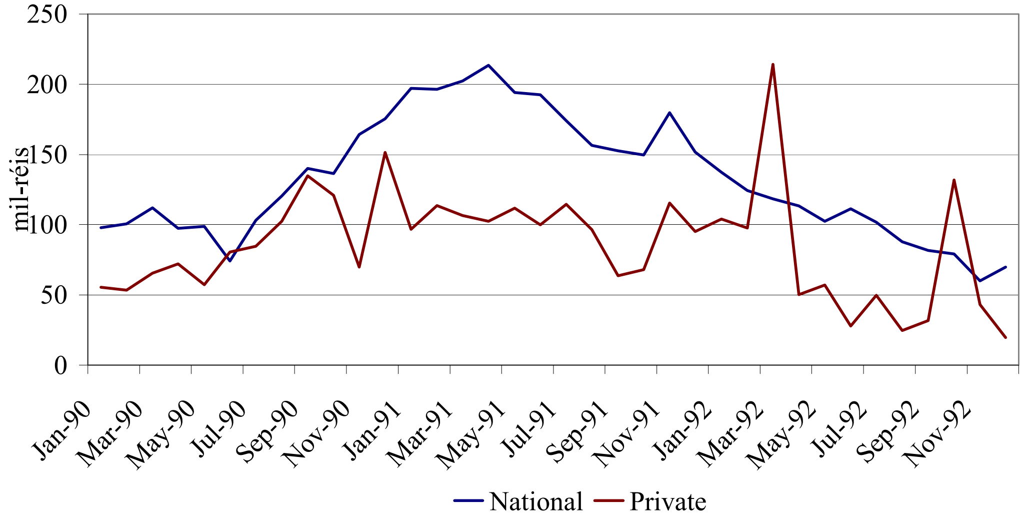

Figure 4

Index, Bank Liabilities

(Quarterly, Nominal), Year-end 1889=100