TWO

Financial Development in Brazil in the Nineteenth Century

The development of stock and bond markets in Brazil started relatively late in the nineteenth century for three reasons. First, the regulation of entry constrained the creation of corporations until the 1870s. Second, basic investor protections and free incorporation were not adopted in Brazil's national company law until 1882. Third, macroeconomic instability during the first seven decades of the nineteenth century prevented the creation and expansion of banks and corporations.

This chapter argues that once entry for new corporations was liberalized (it did not depend on government approval), basic investor protections were included in a new national company law, and the economy began to grow, stock and bond markets flourished. Most of the recent literature on the development of joint stock companies and stock markets in Brazil defends the notion that regulation of entry constrained development of the country's financial system during the nineteenth century because it retarded the creation of new corporations.[1] Yet this chapter shows that the liberalization

[1] This has been a recurrent argument in Brazilian historiography. See, for example, Mária Bárbara Levy, *História da Bolsa de Valores do Rio de Janeiro*, Rio de Janeiro: IBMEC, 1977, p. 85, and *A Indústria do Rio de Janeiro através de suas Sociedades Anônimas*, Rio de Janeiro, UFRJ Editora, 1994, pp. 76–77. Recently, in the United States, this argument has been advanced by Anne Hanley, *Native Capital: Financial Institutions and Economic Development in São Paulo, Brazil, 1850–1920*, Stanford: Stanford University Press, 2005, Chapter 3, and William R. Summerhill III, "Sovereign Credibility with Financial Underdevelopment: The Case of Nineteenth-Century Brazil," unpublished manuscript, UCLA, 2007.

The corporate form is not the only organizational form under which capital can be raised by issuing limited liability shares. Partnerships with shares could be found in most French civil law countries (and in some parts of England). In Brazil, this organizational form has not been studied fully, and stock market data does not show that partnership shares were actively traded in stock markets. Some partnerships, mostly after 1890, took advantage of stock markets by issuing corporate bonds. The limited liability company, which existed in Germany at least since the 1890s, did not exist in Brazil at this time.

of entry in 1882 was necessary but not sufficient to promote rapid growth in stock and bond markets. This is because rapid growth in the listing of stocks and bonds in the Rio de Janeiro Stock Exchange took place only after the government pursued expansionary monetary policies and basic investor protections were set into place (for holders of both bonds and shares).

The number of companies traded in the stock market, total stock and bond market capitalization, and volume of trading of corporate securities attained levels unprecedented in the country's history after 1885. There was a doubling of the number of traded companies between the 1870s and 1880s and of the value of stock market capitalization between 1881 and 1885. Another important jump in stock and bond market capitalization took place after 1890. This jump is particularly important because, as this book argues, important protections for shareholders introduced in bankruptcy and company laws in 1890 and 1891 provided incentives for investors to participate in larger numbers in the stock markets of Brazil.

Evidence presented in this chapter suggests that before 1920 Brazil had large stock and bond markets that were, by some measures, larger even than today's markets. For instance, after peaking between 1910 and 1915, both markets entered a sustained decline from which they did not fully recover until the 1990s. In fact, in terms of the value of the total stock of bonds, Brazil has not recovered its pre-1915 level of bond market development. The size of today's market capitalization for company shares has surpassed that of the pre-World War I era, but evidence provided here shows that the number of stock-exchange listed corporations per million people still falls short of levels during the first two decades of the twentieth century.

FINANCIAL UNDERDEVELOPMENT IN NINETEENTH-CENTURY BRAZIL

Until the 1990s, the dominant view in the economic historiography of Brazil was that the country had lagged behind other economies during the nineteenth century because it had concentrated on producing primary products for export while importing most manufactures from countries such as England. According to this view, Brazil's terms of trade declined continuously during the nineteenth century; that is, the value of exports of primary products declined vis-à-vis that of imported manufactured products, preventing the country from accumulating sufficient savings to finance its own industrialization.[2]

Stephen Haber and Herbert Klein, to the contrary, maintained that the reasons for Brazil's delayed industrialization were internal rather than external.[3] They viewed the main obstacles to Brazil's development in the early nineteenth century to be the dearth of banks and stock markets needed to finance manufacturing and transportation ventures and, consequently, the absence of transportation improvements needed to facilitate the integration of an internal market. Brazil was a slave economy of small, scattered population centers focused mainly on agriculture. Even had manufacturing been technologically possible, Brazilian entrepreneurs in large cities lacked the means to transport goods at a profitable rate to the interior of the country.[4]

[2] This argument in Brazilian economic history is identified with Celso Furtado, *Formação econômica do Brasil*, Mexico: Fondo de Cultura Económica, 1959, but a broader view that supposedly applies to all Latin American countries was identified with the structuralist school of thought, mainly promoted by Raul Prebish from the Economic Commission for Latin America (ECLA). The idea was that Latin American exports of primary products were becoming cheaper relative to imports of manufactures, which inhibited the accumulation of capital need to support industrialization. (Also, internal markets were limited by the fact that most of the population lived at subsistence levels.) The counterfactual they had in mind was a country that did not depend on foreign manufactured products. This school of thought was highly influential in Latin America after the Great Depression, promoting import-substitution industrialization. The structuralist view was later expanded into what became known as the dependency school of thought. Dependentist authors argued that, among other problems, dependence on foreign countries was constantly increasing because the domestic exporting bourgeoisie spent their rents on imported luxury goods. This, they maintained, perpetuated underdevelopment and continued dependency on foreign powers. The most representative author of the dependency school in Brazil was Fernando Henrique Cardozo. See, for example, Fernando Henrique Cardozo and Enzo Faletto, *Dependency and Development in Latin America*, Berkeley: University of California Press, 1979. For a general reference on the logic of the arguments of the structuralist and dependency schools, see Robert Packenham, *The Dependency Movement: Scholarship and Politics in Development Studies*, Cambridge, Mass.: Harvard University Press, 1992, and the introduction in Stephen Haber, *How Latin America Fell Behind: Essays on the Economic Histories of Brazil and Mexico, 1800–1914*, Stanford: Stanford University Press, 1997.

[3] The view that internal circumstances, especially market fragmentation, had hindered Brazil's development was initially developed by Nathanial Leff in "Industrial Organization and Entrepreneurship in Developing Countries: The Economic Group," *Economic Development and Cultural Change* 26 (1978): 661–675. His work was not sufficiently popularized in Brazil to overthrow more dominant views such as that of Celso Furtado articulated in *Formação econômica do Brasil*. Haber and Klein added to this debate a channel through which the integration of the domestic market would have been feasible by focusing on financial development and the lack of infrastructure. See Stephen Haber and Herbert S. Klein, "The Economic Consequences of Brazilian Independence," in Haber, *How Latin America Fell Behind*, pp. 243–259.

[4] Haber and Klein, "The Economic Consequences of Brazilian Independence," pp. 243–259.

Throughout most of the nineteenth century, few banks were in a position to promote industrialization or the development of railway networks through the provision of long-term credit. This is because banks were, from the outset and throughout most of the nineteenth century, focused not on meeting the long-term financing needs of industrial ventures, but on discounting paper, holding treasury bills (*apólices*), and, later, extending mortgage loans for agricultural purposes. Not even this short-term mentality, however, prevented most of the banks chartered during the first part of the nineteenth century from eventually going bankrupt.[5]

But beyond some macroeconomic instability, Brazil was not in the middle of a civil war that made it virtually impossible for private finance to prosper. Instead, in 1822, right after independence, the Constitutional Congress drafted a constitution selecting a form of government that limited the power of the monarch.[6] After the approval of this new constitution in 1824, Brazil became a constitutional monarchy with an Emperor, Dom Pedro I, a two-tier parliamentary system, and a judiciary. According to William Summerhill III, the constitution of 1824 accorded the upper and lower houses of parliament sufficient power to assure the necessary institutional conditions to credibly commit the government to honor the country's foreign debts.[7]

The credible commitment established in the 1824 constitution, which endured at least until the end of the imperial period, contributed to the development of a large internal market for government debt. In the wake of Dom Pedro I's forced abdication of rule in 1831, a nine-year regency governed the country until the emperor's erstwhile son could ascend to the

[5] Gail Triner, *Banking and Economic Development: Brazil, 1889–1930*, New York: Palgrave, 2000, pp. 24–25.

[6] A short explanation of what happened in the years before independence is the following: when the army of Napoleon crossed the border between Spain and Portugal in 1807 it prompted Prince João, who had ruled over Portugal since 1792, to move the court to Brazil. The prince, after installing his son, Pedro, as the regent of Brazil in 1821 returned to Portugal and, in exchange for losing the colony, Joao demanded two million pounds sterling that Brazil had to borrow from England. See Boris Fausto, *História do Brasil*, São Paulo: Edusp, 1994, p. 122.

[7] The constitution's Article 179 established the inviolability of private property, which included debt. Article 15 assigned responsibility for budget and taxation issues, including borrowing, to the parliament. The lower house was especially protective of the interests of debt holders, the legislators having been elected by wealthy, enfranchised Brazilians (the right to vote had been conveyed by the constitution only to adult males with an income). See William R. Summerhill III, "Political Economics of the Domestic Debt in Nineteenth-Century Brazil," pp. 3–6, presented at Economics, Political Institutions, and Financial Markets II: Institutional Theory and Evidence from Europe, the United States, and Latin America, Social Science History Institute, Stanford University, February 4th and 5th, 2005.

throne. When he did so in 1840, Dom Pedro II altered neither the basic institutions nor the checks and balances established in the constitution of 1824. According to Richard Sylla, for instance, strong sovereign debt markets and government capacity to pay have been key components in promoting financial revolutions that translate into larger private financial markets. Douglass C. North and Barry Weingast go so far as to cite credible commitment in the sovereign debt market as perhaps the main reason for the development of private credit markets in England in the late seventeenth and early eighteenth centuries.[8]

Summerhill finds puzzling the fact that Brazil could develop a large market for its sovereign debt at home and in London without developing an active internal market for company stocks or corporate bonds until very late in the nineteenth century. He attributes this delay to the restrictions on entry for new corporations.[9]

Therefore, according to the recent economic historiography, financial markets did not develop in Brazil not because the conditions were not ripe for it, but because companies had to submit their statutes for government approval and entry was limited. As a result, the number of companies going public (registering in stock markets) was also constrained.

THE DEBATE AROUND REGULATION OF ENTRY

The debate around the extent to which regulations of entry restricted financial development is centered around the premise that these regulations, by lowering entry rates in general, also lowered the rate of entry into stock markets. Yet for this hypothesis to be true we would need to observe that whenever there were increases (or reductions) in the number of new corporations created in Brazil, there were also increases (or reductions) in the number of companies traded.[10]

Since independence the emperor had controlled chartering, and Decree 575 of 1849, which kept corporations under the scrutiny of the imperial

[8] See, for example, Richard Sylla, "Financial Systems and Economic Modernization," *Journal of Economic History* 62–2 (2002): 277–292, esp. 280. North and Weingast argued that developing a credible commitment in sovereign debt markets enabled England to secure lower interest rates at the Bank of England. See Douglass C. North and Barry Weingast, "Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth Century England," *Journal of Economic History* 49 (1989): 803–832.

[9] William R. Summerhill, "Sovereign Credibility with Financial Underdevelopment," p. 3.

[10] Defending the view that the regulation of entry constrained financial development are Levy, *História da Bolsa de Valores do Rio de Janeiro*, p. 85; Hanley, *Native Capital*, Chapter 3; and Summerhill III, "Sovereign Credibility with Financial Underdevelopment," p. 19.

Table 2.1. *Trading and chartering requirements for corporations in Brazil, 1850–1891*

	1850	1860	1882	1890	1891
Government authorization	Y	Y	N[a]	N[a]	N[a]
Limited liability	Y[b]	Y	Y	Y[c]	Y
Deposit of initial capital			10%	10%	10%
Percentage of capital paid up before shares became tradable		25%	25%	20%	40%

Sources: Commerce Code, Law 536, June 25, 1850; Law 1083, August 22, 1860; Law 3150, November 4, 1882; Decree 164, January 17, 1890; Decree 434, July 4, 1891; and Decree 601, October 17, 1891 from Brazil, *Colecção das Leis e Decretos,* 1850, 1860, 1882, 1890–1891.

Notes:

[a] Companies with government concessions and banks still needed government approval to operate.

[b] Limited liability for shareholders of joint stock companies was included in the commerce code of 1850, but was not explained in detail, leaving it up to the company statutes to decide the extent to which the liability of the shareholders would be limited.

[c] Before 1890, if a company went bankrupt, shareholders with shares that were not fully paid were liable for the unpaid amount up to five years after selling their shares.[11]

government, required joint stock companies operating outside of the capital city of Rio de Janeiro to have the authorization of the relevant ministers and presidents of the provinces in which they were to operate. The commerce code of 1850 did not simplify things much. Its Article 295 stated that joint stock companies needed government approval, but limited the need for congressional approval to companies that required special privileges or concessions to operate (e.g., banks, railways, shipping companies). The code in Article 298 additionally provided limited liability to shareholders of joint stock companies (up to the face value of each share).[12]

Table 2.1 shows the basic chartering requirements for shareholders according to the most important company laws of Brazil between 1850 and 1891. The table also includes the limited liability provisions of each law, percentage

[11] Article 7, Law 3150, November 4, 1882, Paragraph 2. In fact, this paragraph is the reason Stephen Haber and Anne Hanley argued, in separate works, that Brazil did not have limited liability until 1890. Limited liability for shareholders was in fact explicitly included in company laws since 1850, yet shares with unpaid calls were an exception. See Stephen Haber, "The Efficiency Consequences of Institutional Change: Financial Market Regulation and Industrial Productivity Growth in Brazil, 1866–1934," in John Coatsworth and Alan Taylor (eds.), *Latin America and the World Economy Since 1800*, Cambridge, Mass.: DRCLAS and Harvard University Press, 1998, pp. 275–322 and Hanley, *Native Capital*, Chapter 3.

[12] Decree 575, January 1, 1849; for the commerce code, see Law 556, June 25, 1850.

of capital needed to secure government approval (bank deposit of the initial paid-up capital), and percentage of capital needed to trade shares in any of the local stock exchanges. This table lead us to expect that government regulation stymied the entry of new corporations until at least 1882.

The imperial government tightened control over entry in 1860 with the publication of new regulations for joint stock companies and banks. The 1860 law, also known as the *Lei dos entraves* (Law of Impediments), required that company statutes previously authorized by the Council of State (Conselho do Estado) be approved by Congress. It provided legal penalties (e.g., jail sentences and monetary fines) for companies and company promoters who failed to secure the required authorization.[13] In practice, the law had the effect of slowing the approval of company statutes. According to contemporary observers, "the norm is that the approval process takes one year or more, depending on the legislatures' recesses."[14]

The literature to date holds that the law of 1860 slowed economic growth and the development of stock markets by restricting entry of new joint stock companies and banks.[15] But the source of the data on which most studies have based this claim is the report of the number of companies registered in Brazil published by the Ministry of Justice in 1865. The data from 1851 to 1865 show a significant reduction in the number and capital of registered joint stock companies in Brazil after 1860. Moreover, this reduction does not take place in alternatives to joint stock companies such as partnerships and partnerships with shares. Unfortunately, the data end shortly after the 1860 law was passed, preventing us from tracking the evolution of the number of companies registered after 1865.[16]

Figure 2.1 shows the number of new domestic joint stock companies and new Brazilian banks chartered between 1848 and 1909 according to data compiled by the Ministry of Labor, Industry, and Commerce in 1946. We

[13] For more detail, see the discussion of how Brazilian laws constrained the entry of new companies and banks in Hanley, *Native Capital*, Chapter 3.

[14] Citation from Aureliano C. Tavares Bastos as quoted by Mária Bárbara Levy, *A Indústria do Rio de Janeiro através de suas Sociedades Anônimas*, p. 77 (translated into English by the author).

[15] This argument is defended in the recent studies of Anne Hanley, *Native Capital: Financial Institutions and Economic Development in São Paulo, Brazil, 1850–1920*, chapter 3, Mária Bárbara Levy, *A Indústria do Rio de Janeiro através de suas Sociedades Anônimas*, Rio de Janeiro: URFJ Editoria, 1994, Chapter 3, and Summerhill III, "Sovereign Credibility with Financial Underdevelopment."

[16] The Ministry of Justice data are used by Levy, *História da Bolsa de Valores do Rio de Janeiro*, pp. 77–80, and Summerhill III, "Sovereign Credibility with Financial Underdevelopment," Figures 10 and 11.

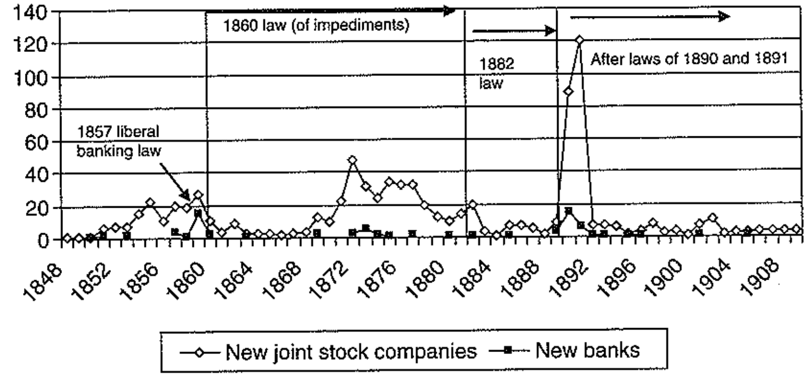

Figure 2.1. Number of new domestic joint stock companies and banks registered in Brazil, 1848–1909

Source: Compiled by the author from Brazil, Ministério do Trabalho, Indústria e Comércio. *Sociedades Mercantis autorizadas a funcionar no Brasil* (1808–1946), Rio de Janeiro, Departamento Nacional de Indústria e Comércio, 1947. The estimates for new joint stock companies added are net of reincorporations and filings to change statutes of existing corporations. The data exclude all foreign companies. The totals for New Joint Stock Companies include banks. For banks, I did not count the re-registration or rechartering of banks registered in previous periods (e.g., Banco do Brasil). The data include only companies the statutes of which were approved by the federal government or at least published in federal decrees and, hence, significantly underestimate total registration of new companies after the 1890s when state governments were accorded greater autonomy to approve charters.

see that an initial period of relatively high levels of company registrations preceded the passage of the company law of 1860. We further see a slight increase in bank registrations following passage of the law of 1857, which permitted multiple banks to issue bank notes. The number of new bank registrations reached 15 in 1859. Conflict between politicians who favored a strict gold standard with one emission bank in control of the money supply and those who favored a system with multiple banks of issue (and thus slower monetary and price adjustment under the gold standard) resulted in a series of contradictory chartering laws that ended the boom in new charters. Thus was the liberal banking law of 1857 followed by the 1860 law that sought to restrict entry and centralize the emission of bank notes in the new Banco do Brasil (created in 1853) and six closely monitored private banks.[17]

[17] Banco do Brasil was in fact a private bank with close links to the government. Its shares were publicly traded, but the government named the director. Moreover, the bank was in charge of managing the supply of government notes, which served as paper money

A review of the new evidence presented in Figure 2.1 reveals the effects of the 1860 law on the number of registrations of Brazilian companies to have been dramatic only during the 1860s. Although the number of new Brazilian joint stock companies registered declined from 11 in 1860 to four in 1861, in 1869 there were 13 registrations of new companies and in 1872 there were 48, more than in any other year in the country's history. Moreover, between 1872 and 1875, 11 new banks were registered.

Two factors explain the growth in the number of company registrations in the 1870s. First, as Maria Bárbara Levy emphasizes in her book on the history of the Rio de Janeiro Stock Exchange, the Paraguayan War (1864–1870) fought by Brazil, Uruguay, and Argentina against Paraguay had indirect positive consequences for the Brazilian economy. "[I]t reanimated manufacturing activities," she writes, "not only because of the increase in money issues, but also because of the increase in import duties."[18] Second, Flávio Saes, studying the evolution of railways in São Paulo, identified special conditions in the coffee market in the 1870s that benefited the chartering of new companies, in particular São Paulo's three largest railway companies. "[E]ven with the crisis of 1873," he writes, "Brasil increased its market share [in coffee] because of the failure of production in Java. Therefore, coffee export income and the profit per unit of coffee produced increased. This in part thanks to the addition of new fertile land and the decline of transportation costs as a consequence of railway development."[19]

Figure 2.1 also shows the effects of liberalization of entry following passage of the 1882 law to have been relatively minor. If regulation of entry were the only reason Brazil did not develop an active exchange before the 1880s, we would expect two things: first, an increase in the number of companies traded in stock exchanges concomitant with the increase in the number of registrations per year after 1882, and second, significant increases in the number of companies traded with every spate of company registrations (e.g., in the 1870s and early 1890s).

Yet increases in the number of companies registered in Brazil do not coincide with the movements of companies traded at the Rio de Janeiro Stock Exchange (the only organized stock exchange at the time). In Table 2.2, we can see that an initial expansion of the number of traded companies in the

before 1853. See Carlos Manuel Peláez and Wilson Suzigan, *História Monetária do Brasil*, Brasilia: Universidade de Brasília, 1976, pp. 97–104.

[18] Translated by the author from Mária Bárbara Levy, *História da Bolsa de Valores do Rio de Janeiro*, p. 94.

[19] Flávio A. M. Saes, *As Ferrovias de São Paulo, 1870–1940*, São Paulo: Editora HUCITEC, 1981, p. 171.

Table 2.2. *Number of companies registered at the exchange (per million population, averages by decade)*

	Companies/million pop.
1850s	3.4
1860s	1.3
1870s	1.9
1880s	3.8
1890s	6.4
1900s	7.1
1910s	12.4
1920s	11.1
1930s	5.9
1940s	14.8
1950s	48.7
1960s	n/a
1970	4.3
1980	4.1
1990s	5.8
2000–2003	5.6

Sources: The number of companies for the 1850s is estimated from annual summaries of the Rio de Janeiro Stock Exchange published from 1861 and 1953, taken from Mária Bárbara Levy, *História da Bolsa de Valores do Rio de Janeiro*, Tables 8, 18, 24, 38, 47, and 57. All population data are from Cláudio Contador, *Mercado de Ativos Financeiros no Brasil*, Rio de Janeiro, IBMEC, 1974, Table A.1. Data from 1991–2003 are from www.cvm.gov.br.

Note: Data for the 1860s–1950s are for the Rio de Janeiro Stock Exchange only. In the 1940s and 1950s, we observe large numbers of companies registered on the stock exchanges of Brazil because Decree-law 9,783 of 1946, intended to enable brokers to monitor corporations and facilitate the collection of dividend taxes, required that all corporations register at the local stock exchange. This artificially inflated the number of companies registered because many privately held companies (companies that did not trade their shares) were included in the lists of registered companies on the exchanges, rendering the data from the 1940s and 1950s impossible to compare with that from previous periods.

1850s was followed by a significant contraction in the 1860s and 1870s, likely a reflection of the effects of the 1860s law (i.e., the law of the impediments). But the increases in new company creations (or registrations) in Figure 2.1 do not correspond with the trends in the number of companies listed in the stock exchange (in Table 2.2). For instance, in the 1870s registrations increase and the number of traded companies increases only slightly. The big jump in the number of companies registered at the stock exchange takes place after the 1880s, even if the formation of new companies in the country does not seem to be trending upward in that decade, at least according to the data used for Figure 2.1.

Thus, there had to be another causal mechanism driving the number of companies going public and leading them to trade their securities at the stock exchange in Rio de Janeiro. One such mechanism could be that the number of companies traded does not increase when entry increases, but when the number of total outstanding companies in the country increases. That is, the number of companies traded in stock markets perhaps increases when the stock of corporations increases and not when the flow (the number of registrations) increases. But since we have no data for the stock of corporations operating in Brazil, it is hard to test this hypothesis. Another, perhaps more plausible, hypothesis is that the number of traded corporations increased because some of the outstanding companies wanted to take advantage of the opportunities generated by the law of 1882. This law established the right to charter corporations without government approval, introduced clear rules for limiting the liability of shareholders, and permitted companies to issue corporate bonds (debentures). Table 2.2 reveals that the number of joint stock companies registered at the stock exchange multiplied rapidly after 1882, from an average of 1.9 companies per million people in the 1870s to 3.9 during the 1880s.[20]

After 1890 the analysis cannot be performed in the same way. The constitution of 1891 granted state governments greater autonomy in accepting

[20] Some of the existing literature on financial development in Brazil has defended the idea that limited liability was not truly introduced in Brazil until 1890. But Article 7, Paragraph 2 of the 1882 law states that investors who originally invested in shares and sold them before the full face value had been called up by the company were liable for the portion of the capital that had not been fully paid for up to five years after the sale. Still, these shareholders were only liable up to the amount of the face value of their shares. This liability accompanied the transfer of shares in order to avoid fraud by company founders and business promoters with bad reputations. See Law 3150, November 4, 1882, Article 7, §2. For studies that argue that limited liability was not introduced until 1890, see Hanley, *Native Capital*, pp. 66–67, and Haber "The Efficiency Consequences of Institutional Change," p. 277.

charters, and the data in Figure 2.1 capture only the registration of government approved or federally decreed company statutes. Thus, the number of registrations after 1891 must be heavily discounted.

STOCK MARKET GROWTH POST-1882

Now that we know that stock markets started to grow faster after 1882 and that this growth does not seem to be directly related to entry we can explore some of the reasons why stock and bond markets boomed in the three decades that followed. The argument of this book is that stock and bond markets experienced a major boom between the 1880s and 1915. Part of the reason investors participated actively in stock markets during this period is they were protected strongly against management abuses and mismanagement either in company bylaws or through legal protections in national laws. For instance, Chapters 4 and 5 demonstrate that shareholders were protected strongly in many companies because the bylaws included voting provisions to reduce the power of large shareholders. Additionally, shareholders of all corporations had access to detailed financial and ownership information after it became mandatory to publish all this information in 1891. Therefore, we should find that stock markets had a major boom after 1891. For bond markets we have a similar hypothesis: We should find rapid growth after the introduction of the company law of 1882 given that it allowed bond issues, but we should also find another jump after 1890 when the government reformed bankruptcy regulation and gave bondholders the statues of privileged creditors, putting them ahead of other creditors in cases of insolvency.

This section examines the boom in stock and bond market activity after 1882, looking for possible jumps in activity after the introduction of the Company Laws of 1882 and 1890. The effects of the regulatory changes to protect creditors and shareholders are not as straightforward as we would want them to be because in the late 1880s there was a radical change in monetary policy that fueled a stock market boom between 1889 and 1891. Thus, the macroeconomic changes after 1888 also coincided with some of the changes in bankruptcy and company law. It is not clear how much of the sustained change in bond and stock markets after the 1880s was due to these protections and how much is attributable to favorable macroeconomic conditions, a dilemma I will discuss in more detail. What will be clear is that they were not, by themselves, sufficient to fuel the rapid growth in stock and bond markets. For the boom to take place favorable macroeconomic conditions were needed, and these actually prevailed in Brazil after the 1890s, mostly between 1900 and 1915.

THE ANATOMY OF A BOOM: EQUITY MARKETS FROM 1882 TO 1915

The Rio de Janeiro Stock Exchange, the leading stock market in Brazil until the 1930s, at its inception in 1848 specialized in government bonds. The stock exchange had its genesis earlier in the century as informal meetings of handfuls of brokers at the Rua Direita, a street near the Imperial Palace. The legal figure of the broker (*corretor*), an agent who could facilitate the trade of anything from commodities to commercial paper, had existed since colonial times. In 1843, the government regulated the number of brokers per city and established three categories of broker according to what was traded: cargo space, commodities, and stocks and bonds. Operating as a stockbroker required a permit, the number of which was limited by law (and increased sporadically), and payment of an annual "patent" fee and security deposit. The Rio de Janeiro Stock Brokers Association was formed in 1849 in a building on the same street on which brokers earlier in the century had met informally.[21] In 1850, the profession was regulated by the commerce code.

The market for government securities having been active since the beginning of the century, stockbrokers began to report the quotes of their trades back to the treasury and to some major newspapers. Quotations for 10 or so companies were published regularly in the newspapers after 1850; by 1859, the stock exchange trading summary included 41 companies. This was the peak of stock market activity until the 1870s and 1880s, the 1864 crisis having led to the bankruptcy of many of these companies (see Table 2.2).

The real peak in stock market activity seems to have taken place after 1882. The number of traded companies doubled from the 1870s to the 1880s and stock market capitalization shows a significant jump from 1878 to 1886 (in Figure 2.2). The level of equity market capitalization rose from 10% in 1881 to in excess of 15% in 1886 and nearly 20% between 1895 and 1913.

Public and private securities traded in the stock exchanges of Brazil also increased their importance as a proportion of personal savings during the 1880s. Zephyr Frank estimates that the percentage of wealth invested in

[21] For more details about the history of the Rio de Janeiro Stock Exchange and Stock Brokers Association see Mária Bárbara Levy, *História da Bolsa de Valores do Rio de Janeiro*.

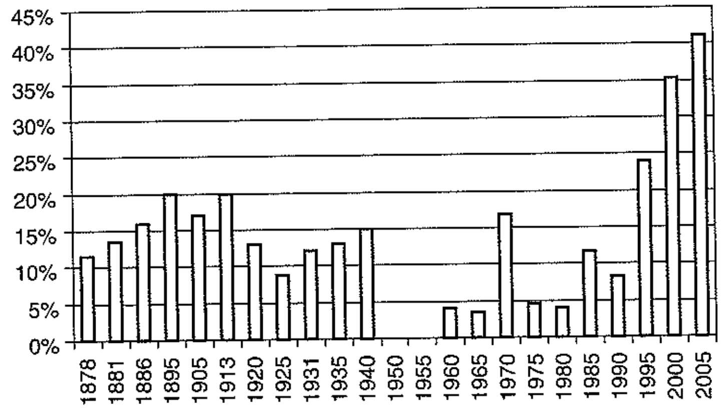

Figure 2.2. Equity market capitalization over GDP in Brazil (five-year intervals), 1878–2002

Source: See Appendix 2A.

public and private securities went from something close to 11.5% of estate valuations in Rio de Janeiro in 1868–1873, to over 32% between 1885 and 1889.[22]

As expected the boom of the 1880s in the number of stocks traded and size of the market was repeated in the 1890s. The succession of regulations that protected shareholders, bondholders, and the expansion of bank credit described in the next section provided the impetus for this latter boom. In the 1890s, the number of traded companies per million people reached, on average, 6.4. This number peaked in 1910 at 12.4 (see Table 2.2).

The rapid jump in the number of corporations registered in the Rio de Janeiro Stock Exchange at the end of the 1880s also had to do with reforms passed by the minister of finance after 1886, the Viscount of Ouro Preto, who favored a looser monetary and banking policy because the massive immigration of Europeans and end of slavery demanded that the country increase its means of payment. The end of the slave trade and pressures that had led to the abolition of slavery in 1888 prompted coffee growers in Rio de Janeiro and São Paulo to push for a massive, state-sponsored program of European immigration. According to the dominant views of the economic history of Brazil, the abolition of slavery in 1888 and wave of European immigrant workers who replaced the slaves increased the demand for cash with which to pay wages and fund transactions

[22] Zephyr Frank, *Dutra's World: Wealth and Family in Nineteenth-Century Rio de Janeiro*, Albuquerque: University of New Mexico Press, 2004, p. 88.

previously covered by trade credit. These pressures led the government to loosen monetary policy.[23]

Minister Ouro Preto responded in 1888 with a new banking law that simplified the process for becoming an emission bank. These banks were permitted to back 80% of their notes with internal debt bonds (*apólices*).[24] The chartering of new banks with rights to issue money led to a rapid expansion of the money supply and fueled speculation in joint stock companies accommodated by the 1888 law that permitted banks to invest in stocks and bonds. According to the figures of contemporary observer Liberato de Castro Carreira, in 1889 there were 35 banks in operation in Rio de Janeiro alone (up from 25 in the entire country in 1880).

THE REPUBLIC AND THE FIRST CRISIS OF CONFIDENCE IN STOCK MARKETS

This increase in the number of banks, amount of money issued, and level of bank involvement in stock market activities accelerated the growth of Rio de Janeiro's stock and bond market during the latter part of the 1880s. Then, following a coup that overthrew the monarchy in November 1889, a republican government was installed. Concerned with growing the financial sector to promote industrialization, the new government passed a series of laws aimed at further developing banking and the stock market. For example, in 1890, the first minister of finance under the republican government, Rui Barbosa, created new banks with the capacity to issue notes and increased the total emission limit. The effect was instantaneous: the money supply increased by nearly 100% in one year.

This rapid expansion of the money supply provided liquidity to investors willing to participate in stock markets and precipitated a sudden boom in the Rio de Janeiro Stock Exchange. Thanks to the liquidity and increase in the number of small investors, new firms had an easier time selling their shares to the public, and hundreds of companies registered in a matter of months. Corporations chartered in late 1889 and early 1890 had capital subscriptions that lasted a few days or just a few hours. The short stock boom from 1890 to 1891 was called the *encilhamento* (saddling) because

[23] See Gustavo Franco, "A Primeira Década Republicana," in Marcelo de Paiva Abreu (org.) (ed.), *A Ordem do Progresso: cem anos de política econômica republicana, 1889–1989*, Rio de Janeiro: Campus Editora, 1989, pp. 15–19, and Carlos Manuel Peláez and Wilson Suzigan, *História Monetária do Brasil*, p. 177.

[24] Decree 3403 of November 24, 1888. It was complemented by Decree 10,144 of January 5, 1889.

of similarities between bets placed at the Jockey Club of Rio de Janeiro on horses while they were being saddled and the purchase of stock of new companies with no clear business prospects. Before 1888, the value of all the joint stock companies established in Brazil was something on the order of 43 million pounds sterling. Between 1888 and November 1889, the capital of just the new companies was 44 million pounds. Between November 1889 and October 1890, when Barbosa presented his Ministry of Finance report, the capital of all the new companies totaled 104 million pounds.[25]

In January 1890 Barbosa also passed Law 164, which facilitated the sale of company stocks after their creation (reducing to 20% of total declared capital the amount of paid-up capital necessary to trade shares). These legal changes, together with the expansionary monetary policy, increased the rate at which new companies were created. The ease with which corporations could pursue IPOs was an incentive to create companies and trade their shares at inflated prices on the exchange.

The number of companies traded on the Rio de Janeiro Stock Exchange jumped from four to eight per million people in 1890 alone, and the number of companies registered reached record levels of more than 100 per year between 1890 and 1891 (see Table 2.2). Stock market capitalization jumped from 15% of GDP in the late 1880s to 40% during the *encilhamento*, stabilizing at around 20% of GDP after the excitement abated (see Figure 2.2).

The *encilhamento* and the investor exuberance that sustained it created incentives for corporate fraud. Many Brazilians seized the opportunity afforded by the boom to create companies that produced nothing. With an ambitious business plan and contacts with a broker or bank, these businessmen were able to sell shares in ghost companies, for the boom of 1889–1891 had also attracted many uninformed investors looking to make a quick profit.

After the excitement declined many uninformed investors in Brazil's ghost companies lost their money. Stock prices declined rapidly in 1891 and bankruptcies multiplied. The official reaction to the *encilhamento* took the form of a series of laws regulating corporations and their public offerings that were later compiled in Decree 434 in July 4, 1891 and Decree 603 in October 17, 1891. These laws were intended to forestall corporate fraud by increasing the share of fully paid-up capital necessary to trade shares from 20% to 40% of total registered capital, thereby forcing the initial subscribers to put more of their own money at risk before getting other investors

[25] Brazil, *Relatório do Ministro da Fazenda em Janeiro de 1891*, Rio de Janeiro: Imprensa Nacional, 1891.

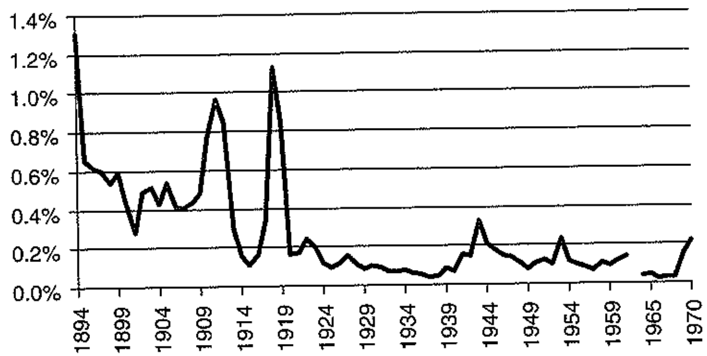

Figure 2.3. Stock turnover at the Rio de Janeiro Stock Exchange (as a % of GDP), 1894–1980

Source: See Appendix 2A.
Note: Data between 1961 and 1964 are missing.

involved in a company. These laws also increased the penalties against company founders and promoters of shares and mandated complete disclosure of information about new companies. According to Decree 603, any attempt to sell new shares required the publication in major financial newspapers of the statutes of the company, a full shareholder list, and complete information about the deal with the investment bank or broker underwriting the issue.[26] These legal proved very effective in keeping investor interest in the stock market and are discussed in more detail in Chapter 4.

TRADING AFTER THE 1890–1891 REFORMS

Figure 2.3 shows total trading of stocks relative to GDP. The trading figures mimic somewhat the findings reported in Figure 2.2. There were at least three periods of intense trading between 1890 and 1920. The first was a period of exuberance of the early 1890s (the *encilhamento* and its aftermath), and the second started after 1905 and ended in 1913. The third period was the quick recovery in trading after World War I, which declined shortly thereafter in a sustained way until at least the late 1960s.

Trading was active in the 1890s when banks were first permitted to own and manage joint stock companies and small investors increased their participation in the ownership of companies. The deflationary episode between 1898 and the first years of the twentieth century, and the banking crisis of

[26] See Decree 603, October 17, 1891, Articles 89–105.

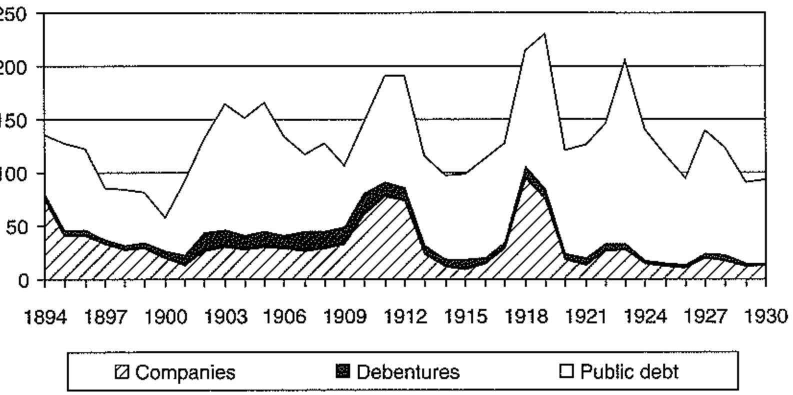

Figure 2.4. Turnover of securities in the Rio de Janeiro Stock Exchange, 1894–1930 (contos de mil reis [millions] of 1900)

Source: Maria Bárbara Levy, *História da Bolsa de Valores do Rio de Janeiro*, Tables 8, 18, 23, 24, 26, 35, 38, 41, 43, 44, 47, 57, 58, 61, and 62, and deflated using the GDP Deflator.
Note: Mortgage bonds from some banks were also traded on the Rio de Janeiro Stock Exchange, but the volume was so small as to be essentially irrelevant to the present analysis.

1900 that precipitated the bankruptcy of many companies and banks that operated in Rio de Janeiro, including the semiofficial Banco do Brasil, might have contributed to the reduction in trading. When the crisis ended, trading again picked up, reaching levels close to 1% of GDP. The volume traded increased again just before World War I and between 1919 and 1920, but these short periods of active trading were not sustained. Trading subsequently decreased to 0.1–0.2% of GDP from 1921 to 1969 (see Figure 2.3). Still, most of the trading throughout the period 1894–1930 was in Treasury bonds (see Figure 2.4).

BOND MARKETS IN BRAZIL

Bond markets, too, experienced a significant initial takeoff during the 1880s. Accounting for less than 1% of GDP in 1881, the total stock of bonds had doubled by 1882. In that year alone, the number of companies issuing bonds increased from five to eight and the number of bond issues from six to 11. This trend accelerated during the second half of the decade. In 1885, 25 companies were issuing bonds in the Rio de Janeiro Stock Exchange alone.

The market for corporate bonds had been quite thin before 1882. Three of the five companies with bonds outstanding were railways (the Leopoldina,

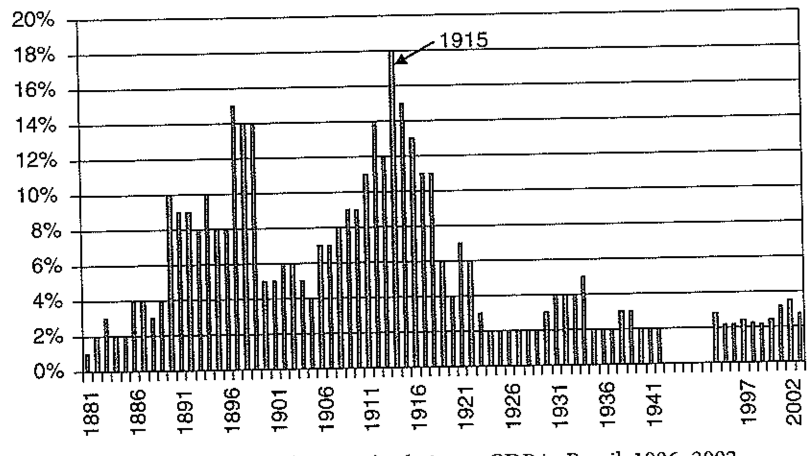

Figure 2.5. Stock of bonds (debentures) relative to GDP in Brazil, 1886–2002

Sources: Jornal do Commércio, Retrospecto Comercial do Jornal do Commércio, Câmara Sindical, *Relatorio* (1905–1926), and the *Anuário da Bolsa de Valores do Rio de Janeiro* (1926–1942). The total stock of debentures after 1990 is from *The Brazil Handbook*, 1992–2002, and the Brazilian Debenture Service. GDP data are from Raymond Goldsmith, *Brasil 1850–1984: Desenvolvimento Financeiro sob um Século de Inflação*, Rio de Janeiro: Banco Bamerindus and Editora Harper & Row do Brasil, 1986, Tables 3.1 and 4.2.

Macahé e Campos, and Sorocabana), one was a tramway (Carris Urbanos), and the other was a government-subsidized sugar mill (Engenho Central de Quisamã, in Rio de Janeiro). Railways had begun in the 1870s to trade bonds among small savers and coffee planters. In the absence of national legal provisions, the protections accorded these bondholders were detailed on the backs of their bonds. These included bondholders' rights in the event of bankruptcy, such as the right to withdraw collateral, as well as the rights to a coupon and instructions for collecting it.[27]

Figure 2.5 delineates three important jumps in total debenture capitalization, the first in the latter part of the 1880s, the second in the 1890s following the succession of laws passed in 1890, and the third in 1915 after a period of decline consequent to the wave of bankruptcies and deflation at the turn of the century. Bond market size relative to the size of the economy subsequently declined and has not been restored to its 1915 level even to this day.

[27] Some of these early bonds are available in the National Archive of Brazil in the bankruptcy files of railways discussed in Chapter 7.

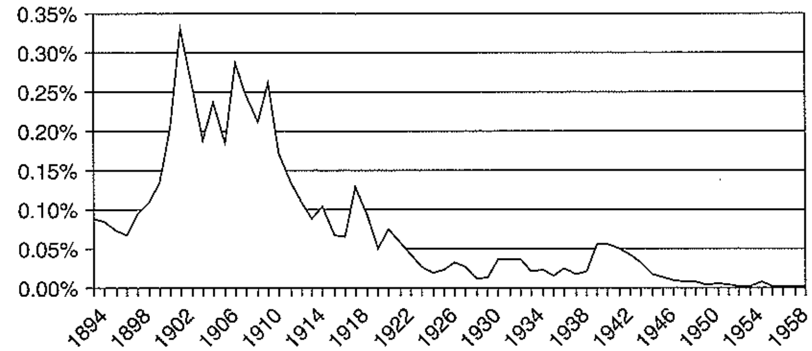

Figure 2.6. Volume of debentures traded (as a % of GDP)

Sources: The turnover of debentures is taken from Maria Bárbara Levy, *Historia da Bolsa de Valores do Rio de Janeiro*, Tables 23, 26, 35, 41, 43, 44, 58, 61, and 62. Data for the years 1934, 1935, and 1939 were corrected by the author using the reports of the stock-brokers association and the *Anuario da Bolsa de Valores do Rio de Janeiro*. GDP measures are from Raymond Goldsmith, *Brasil 1850–1984: Desenvolvimento Financeiro sob um Século de Inflação*, Tables 3.1, 4.2, and 6.2.

To measure the importance of the number of bonds issued in Brazil circa 1915 when the stock of bonds stood at 12% over GDP we could look at the size of bond markets in Brazil today. In Figure 2.5, which shows the stock of debentures from 1994 to 2003 normalized by GDP, the 1913 level of 12% looks large compared with levels of under 5% during the 1990s.[28] These latter levels seem particularly low when we take into account that the stocks of debentures in the last few years include bonds issued not only by companies but also by banks and government entities.

Figure 2.6, which plots the total volume of bonds traded relative to GDP, shows trading to have been active from 1894 through the early 1920s, but especially before World War I. The boom years in bond trading correspond with the years in which macroeconomic conditions stabilized and Brazil adopted the gold standard. The decline in bond trading and in the total stock of bonds in Brazil after 1915 is thus, as I elaborate in Chapter 9, related to increasing inflation after the 1920s and diminished capital flows following WWI.

[28] Debentures declined drastically throughout the twentieth century consequent to inflation increasing rapidly after 1920, and even more rapidly after 1940, and indexed debenture issues not being introduced until the last decades of the century. For an analysis of the debenture market after 1930, see Everett Santos, "Liquidez de Mercado Secundário para debêntures," unpublished manuscript, IBMEC, Rio de Janeiro, 1973.

The takeoff of debentures in Brazil followed the important reforms enacted in 1890. Legal provisions to protect small investors and the tailoring of joint stock company laws to facilitate entry by new entrepreneurs were among the reforms introduced in rapid succession by the newly established republican government's minister of finance. In particular, Minister Barbosa facilitated the rapid development of corporate bond markets between 1890 and 1915 by introducing four legal measures (see Figure 2.5). The first, a law passed in January 1890 accorded bondholders the status of secured creditors and gave them first priority during bankruptcy.[29] The second measure, also enacted in 1890, reduced from one-fifth to one-tenth of total capital the initial capital required to register a corporation. The number of joint stock companies formed and traded on the exchanges of Brazil subsequently grew rapidly, almost half issuing corporate bonds.

The third measure radically altered the incentives for companies to issue debt versus equity. Whereas chartered corporations generally could issue debentures only up to the value of their capital, after 1891 firms with government concessions (e.g., utilities) and those engaged in public services (e.g., railways, shipping companies, municipal markets) were permitted to issue debentures for more than the declared value of their paid-up capital. This provided a strong incentive to issue debentures because it facilitated the initial collection of funds for new ventures.[30]

Finally, Barbosa promoted rapid expansion of the money supply by establishing an official system of regional banks charged with expanding the emission of bank notes. Permitting a handful of banks to issue inconvertible notes backed by government bonds precipitated a doubling of the money supply from 1890 to 1891.[31] This, in turn, generated a short-term boom in securities markets. In 1895 these banking reforms were phased out, but the other three regulatory changes exerted a lasting effect on the bond markets.

29 For the changes in creditor priority, see Decrees 164 of January 17 and 917 of October 24, 1890 and Decrees 434 of July 4 and 603 of October 20, 1891.

30 Companies established before 1890 could operate with only 20% of the face value of their shares fully paid (called up), 40% if the company was established after 1890. Because bonds could be issued for up to 100% of the registered value of capital even if only 20% or 40% of equity had been called up, companies could effectively raise 1.4 times the value of capital (100% in debentures and 40% in equity) in little time and with little investment by shareholders. The process of raising capital was made even easier for many companies once the privilege of issuing more bonds than equity was extended to firms with government concessions or focused on public services. See Decrees 434 of July 4 and 603 of October 20, 1891.

31 See Maria Bárbara Levy, *Historia da Bolsa de Valores do Rio de Janeiro.*

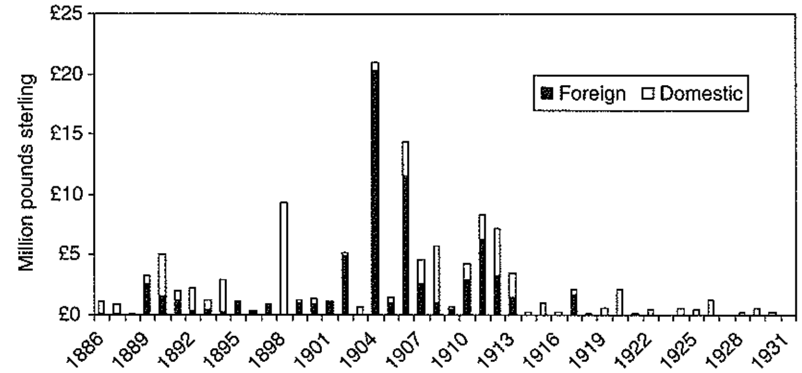

Figure 2.7. Corporate bond issues per year, Rio de Janeiro Stock Exchange, 1890–1930
Sources: Jornal do Commércio, Retrospecto Comercial do Jornal do Commércio, Câmara Sindical, *Relatorio* (1905–1926), and the *Anuário da Bolsa de Valores do Rio de Janeiro* (1926–1942). Exchange rates are from the *Brazilian Year Book 1909.*

The fact that all of these reforms were passed at the same time obscures the net effect that the changes in the priority of bondholders during bankruptcy had on the level of bond market activity. Even if we know these rights must have mattered to convince investors to buy bonds, we do not know their precise effect. Still, the golden era of corporate bond markets ushered in by the legal reforms of the early 1890s saw the largest bond issues placed in the Rio de Janeiro Stock Exchange between 1898 and 1915. This boom in bond issues is depicted in Figure 2.7, which distinguishes domestic annual bond issues denominated in domestic currency from those denominated in foreign currency and converts all figures to pounds sterling to facilitate comparisons across time.[32] It shows that most domestic bond issues during this time were denominated in sterling, francs, and other European currencies to facilitate sale to European investors. Not coincidentally, this was also the period (1906–1914) during which Brazil, to contain the appreciation of the local currency, the mil reis, first adhered strictly to the gold standard.

Among the reasons debenture issues denominated in foreign currency were so successful outside Brazil was that they had a low exchange rate risk and foreign bondholders could, in event of default, appeal to Brazilian courts (with a good chance of recouping some of their investment). After 1897, foreign bondholders could initiate bankruptcy proceedings against

32 All of the bonds accounted for in my estimates were issued by companies chartered in Brazil. That is, none of my estimates include bonds issued by foreign companies operating in Brazil.

Brazilian firms in the Rio de Janeiro courts. (See The *Moniteur des Interets Materiels*, a financial newspaper published in Brussels, also lists tens of bonds and stocks with government guarantees for many countries in continental Europe.)

FINANCIAL DEVELOPMENT UNDER FAVORABLE MACROECONOMIC CONDITIONS

Again, it is hard to know precisely how much of the initial boom in bond and stock markets was due to the effects of changes in investor protections because these changes coincided with changes in macroeconomic conditions, yet using a simple counterfactual we may be able to discern better how important both the legal reforms of the early 1890s and the strong company bylaws protecting shareholders were to the stock and bond market boom in Brazil.

Important contributing factors in the growth of Brazil's equity and bond markets at the end of the 1890s were the stabilization of the exchange rate after 1898 and adoption of a gold exchange standard in 1906. In 1898, after 70 years of a relatively good administration of public debt, the central government of Brazil suffered a major setback.[33] The excessive money issues of the early 1890s increased inflation and contributed to the rapid depreciation of the currency relative to the pound sterling. Both public and private debts suffered during this period. Many private corporations defaulted on their corporate bond issues (see Chapter 7) and the denomination of a large share of public debt in foreign currency mired the government in serious financial difficulty.

In 1898, the government negotiated a debt consolidation loan, or funding loan, with the Rotschilds that included strict conditions such as a reduction of the money supply in the exact amounts of credit received. The drastic decrease in the money supply exchanged for credit and an extension on government outstanding-debt service payments occasioned a recession between 1898 and 1900, but also stabilized the exchange rate. The stability of the exchange rate from 1898 to 1913, together with the adoption of the gold standard in 1906, provided a platform for stable growth and fostered the development of active bond and equity markets.[34]

[33] Brazil is perhaps the only Latin American country that did not default on its debt in the nineteenth century. See Summerhill III, "Political Economics of the Domestic Debt in Nineteenth-Century Brazil," p. 3.

[34] Excellent summaries of the terms of the funding loan of 1898 and terms of the debt restructuring are provided by Marcelo de Paiva Abreu, "Os *Funding Loans* Brasileiros," *Pesquisa e Planejamento Econômico* 32–3 (2002): 515–540, esp. pp. 521–523.

The adoption of the gold standard in 1906 was a product of intense negotiation between coffee exporters and the government. The government wanted a stable exchange rate in order to be better able to service its debts; coffee exporters wanted to stabilize their coffee export income in domestic currency. The interests of coffee producers dominated the political scene in Brazil during the republic, and exchange rate stability was crucial to reducing fluctuations of their incomes in domestic currency.[35]

Brazilian coffee growers faced two problems after the currency was floated in the early 1890s. First, because Brazilian coffee exporters controlled such a large share of the world market, if too much were exported the international price and their total export income would fall. Indeed, the main source of price fluctuation was believed to be overproduction in Brazil. Second, because coffee exports were the Brazilian economy's main source of foreign exchange, higher coffee prices or higher total export income denominated in foreign currency (price × quantity) exerted pressure on the exchange rate to appreciate, with terrible consequences for coffee growers since an increase in the exchange rate increased the price paid by international buyers.[36]

The 1906 coffee valorization program was conceived to solve these two problems. First, because coffee producers maximized their income in domestic currency, the program aimed to reduce excess supply and exchange rate fluctuation through a program based on purchasing coffee bags to be stocked and sold only during times of short supply and keeping the price stable by regulating the international supply of coffee. The program also involved the adoption of a gold exchange standard. The treasury was in charge of neutralizing the entrance of foreign currency (from coffee sales) in order to keep the exchange rate from appreciating. Given Brazilians' propensity to consume imports, a stable exchange rate also implied lower inflation.

Together, the coffee valorization program and gold exchange standard effectively stabilized coffee growers' real income, improved the government's ability to pay its foreign debt, facilitated the importation of industrial

[35] Robert Bates, *Open Economy Politics*, Princeton: Princeton University Press, 1997, Chapter 2.

[36] For details of the workings and politics of the coffee valorization program, see the classical works of Antônio Delfim Netto, "O problema do café no Brasil," in Carlos Manuel Peláez (org.), *Ensaios sobre café e desenvolvimento econômico*, Rio de Janeiro: Instituto Brasileiro do Café, 1973, pp. 41–160, and Carlos Manuel Peláez, "Análise Econômica do Programa Brasileiro de Sustentação do Café, 1906–1945: Teoria, Politica e Medição," *Revsita Brasileira de Economia* 25, 4 (1971): 5–211. In English, the best discussion of the political economy of the valorization program is Bates, *Open Economy Politics*, Chapter 2.

inputs, and benefited foreign investors into the bargain. The coffee growers' real income denominated in domestic currency was rendered more stable and predictable. Reducing exchange rate fluctuations served the interests of the government, which had to service its debt in pounds sterling. The stable exchange rate benefited industrialists because issuing debt denominated in foreign currency enabled them to plan more accurately when to import machinery and other raw materials and helped them to issue bonds denominated in foreign currencies. This is why foreign investment increased in the period during which Brazil operated under the gold exchange standard.

This stage of prosperity did not last long, however. World War I interrupted the coffee valorization program and precipitated a permanent decrease in the total level of foreign investment in Latin America.[37] The decline in capital flows and coffee exports during the war disrupted the stability that had promoted the boom in stock markets. Later on, the decline in financial market prosperity was accentuated by the post WWI world movement toward the imposition of capital controls (see Chapter 9).[38]

Does all of this evidence on the improvement of macroeconomic conditions imply that changes in company laws and having strong protections for investors in company bylaws were relatively unimportant to fuel the stock market boom? The answer can be elucidated if we think about a counterfactual case in which the same macroeconomic stability was achieved without any major legal changes in company laws and with companies that did not respect small or outside investors. The case of Mexico offers this counterfactual, even if some institutional differences complicate a perfect comparison. Mexico was industrializing rapidly after the 1890s, mostly because it was exporting mining commodities (silver), attracting foreign capital in large amounts and enjoying relative political and economic stability, at least until 1910. Moreover, the Mexican government performed a series of debt renegotiations, the last of which took place in 1899, and in 1905 adopted the gold standard (one year earlier than Brazil). Yet the Mexican stock and bond market did not take off as fast as did that of Brazil. In fact, no bond market was developed in Mexico during this time, and stock markets were relatively thin, with only a handful of industrial companies being traded

[37] See Barbara Stallings, *Banker to the Third World: U.S. Portfolio Investment in Latin America, 1900–1986* (Studies in International Political Economy), Berkeley: University of California Press, 1987, and my own estimates of capital flows from England reported in Chapter 9.

[38] Alan Taylor, "Foreign Capital Flows," in Victor Bulmer-Thomas, John Coatsworth, and Roberto Cortes-Conde (eds.), *The Cambridge Economic History of Latin America*, vol. 2, 2006, pp. 57–100.

on the Mexico City stock exchange every year. Most stock market activity focused on mining ventures, but most of the highly traded mines were foreign companies (e.g., British) with better protections for investors than those offered by Mexican companies.[39]

In sum, if the macroeconomic conditions aided the development of Brazilian stock and bond markets, they were definitively not sufficient. Similar macroeconomic conditions existed in Mexico and the development of Mexican stock and bond markets was diametrically different. It seems that both the legal framework and the existence of bylaws protecting investors were the real triggers of investor interest in equity and bond markets. The following chapters examine in more detail the developments of stock and bond markets and the laws and company bylaws that allowed such developments.

APPENDIX 2A: SOURCES FOR ESTIMATING STOCK AND BOND MARKET DATA

METHODOLOGY FOR ESTIMATING EQUITY MARKET CAPITALIZATION

This chapter's analysis of the size of Brazil's financial system relies on estimations of equity and bond market capitalization from the Rio de Janeiro Stock Exchange annual summaries published in *Jornal do Commércio, Retrospecto do Jornal do Commércio* and the reports of the Rio de Janeiro Stock Brokers Association (*Relatorio da Câmara Sindical de Corretores Públicos da Bolsa de Valores do Rio de Janeiro*) from 1878 to 1931 and from 1944 to 1947. Additional capitalization data are from the Rio de Janeiro Stock Exchange annuals from 1932 to 1942 (*Anuário da Bolsa de Valores do Rio de Janeiro*). Information for São Paulo was added to the total estimations of stock market capitalization when available. Most of this information is from Anne Hanley, "Capital Markets in the Coffee Economy" (1995) and the *Anuário da Bolsa de Valores de São Paulo*, 1932–1950 (the 1940

[39] This comparison is drawn from the research done for Chapter 8, from Aldo Musacchio and Ian Read, "Bankers, Industrialists and Their Cliques: Elite Networks in Mexico and Brazil During Early Industrialization," *Enterprise and Society* 8, 4 (2007): 842–880, and from research in process co-authored with Aurora Gómez-Galvarriato. Stephen Haber developed a more detailed comparison between the development of textile corporations in Mexico and Brazil in Stephen Haber, "Industrial Concentration and the Capital Markets: A Comparative Study of Brazil, Mexico and the United States, 1830–1930," *Journal of Economic History* 51 (September 1991): 559–580.

observation is proxied with the 1939 book value observation from this publication). I did not count equity market size twice for companies that cross-listed their shares in São Paulo and Rio. Because data for the São Paulo Stock Exchange is missing for 1920, 1925, and 1935, I assume capitalization in São Paulo to have moved in line with that in Rio, which biases the estimates downward as São Paulo has grown faster than Rio since the 1920s. The data for 1947–1964 were excluded because legislation that forced all joint stock companies to register at the stock exchange rendered the data not comparable to that for other periods and other countries.

In my estimates, I use the market value of companies reflected in their last trading price, when possible, to adjust equity market size. The stock prices used to estimate registered equity at market values are from *Jornal do Commércio* and *Retrospecto do Jornal do Commércio* from 1879 to 1895 and from the annual reports of the Rio de Janeiro Stock Brokers Association (*Relatorio da Câmara Sindical de Corretores Públicos da Bolsa de Valores do Rio de Janeiro*) for 1894–1925. Stock prices for 1926 to 1942 were copied from the Rio de Janeiro Stock Exchange annuals from 1932 to 1942 (*Anuário da Bolsa de Valores do Rio de Janeiro*). This database contains thousands of trading observations with minimum and maximum prices for each year. I used the average of these prices.

The database enabled me to value companies using the last trading price for each company. I assumed the many companies for which this was not possible to have been traded at par (using the value of the fully paid up share rather than the share's registered value).[40] With the São Paulo data, I did the same for companies for which I did not have trading information. This might have caused an overestimation of the total value of some companies, but is the best that can be done with the available data. As I explain below, I made an effort to bias the estimates of stock market capitalization downward by using the largest possible GDP figures available.

Stock market capitalization data for the 1960s and 1970s are from Goldsmith (1986), Table 6.45. Stock market capitalization estimates between 1946 and 1964 were excluded from most of the graphs and tables to avoid

[40] Brazilian companies, following the practice in other countries, did not require that investors pay up front for their shares. Even when the full value of shares was not called up, the paid-up value up to that point was reported separately in the stock exchange annual summaries. For instance, shares usually had a face value of 200$000 (two hundred mil reis), but when only 60% of face value was fully paid (*integralizada*) the newspaper listed the face value in one column and the fully paid-up value in another (as *entradas*). Rather than use face value, I use only the paid-up value for all calculations of company capitalization when market prices are not available.

inflation of stock market capitalization occasioned by Decree-law 9,783, September 6, 1946, which mandated that all joint stock companies in Brazil register with the local stock exchange. The number of companies registered at the exchange grew rapidly after 1946 for this same reason. Between 1946 and 1947, more than 1,000 companies registered with the Rio de Janeiro Stock Exchange alone.

Finally, data for stock market capitalization after 1989 are from *The Brazil Company Handbook*, 1992–2002.

Methodology for Estimating the Stock of Bonds

To estimate the stock of bonds I used a similar methodology. I did not use market values because the companies owed the full face value of the bonds and to do so might bias my estimates upward. Instead, I estimated the stock of bonds from the Rio de Janeiro Stock Exchange annual summaries published in the *Jornal do Commércio* and the *Retrospecto Comercial do Jornal do Commércio*, the city's most important financial newspaper (see Figure 2.2). Information for São Paulo, when available, is added to the total estimations of stock market capitalization. But the source of most of the data is the Rio de Janeiro Stock Exchange, which was until the 1920s Brazil's largest financial center and the principal center for bond trading for most of the twentieth century. Data for the total stock of debentures after 1990 are from the Brazilian Debenture Service.[41]

Description of Gross Domestic Product Figures Used to Normalize the Stock Market Data

To normalize stock market and debenture stock data over Gross Domestic Product (GDP), I used the estimates of GDP from 1861 to 1947 of Raymond Goldsmith based on the original estimates of Cláudio Contador and Cláudio Haddad.[42] I do not use the original figures published by Haddad

[41] São Paulo data are from Anne Hanley, "Business Finance and the São Paulo Bolsa, 1886–1917," in John Coatsworth and Alan Taylor (eds.), *Latin America and the World Economy Since 1800*, Cambridge, Mass.: DRCLAS and Harvard University Press, 1998, pp. 115–38, Table 4.4, and the *Anuário da Bolsa de Valores de São Paulo*, 1932–1950. The omission of bond data for São Paulo introduces a bias against what I am arguing (that bond markets were large before 1930 when creditor rights were stronger). I was careful not to double count equity market capitalization for companies that cross-listed in both the São Paulo and Rio exchanges.

[42] Claudio Contador and Claudio Haddad, "Produto Real, Moeda e Preços: A Experiência Brasileira no Período 1861–1970," in *Revista Brasileira de Estatística* 36, 143 (1975): 407–440,

and Contador in 1975 because their nominal values for GDP are lower than Goldsmith's. Using Goldsmith's estimates biases my normalized estimates of stock and bond market size to GDP downward. Other GDP data are taken from the web page of the Instituto de Pesquisa Econômica Aplicada (IPEA, www.ipeadata.gov.br). Whenever I had to deflate data, I used the GDP deflator used by Goldsmith, which starts in 1851, and merged it with the deflator published by IPEA in 1910.

VOLUME OF SECURITIES TRADED AND NUMBER OF COMPANIES TRADED

Information on numbers of companies traded and total volume of shares and debentures traded comes from Mária Bárbara Levy, *História da Bolsa de Valores do Rio de Janeiro* (1997), Tables 23, 26, 35, 41, 43, 44, 58, 61, and 62. Her series was incomplete for the early 1880s and for 1934, 1935, 1939, 1941, and 1946. For the 1880s, I completed the data using the annual stock market summaries published in the *Jornal do Commércio* and *Retrspecto Commércial do Jornal do Commércio*. For later periods, I used the information on traded companies published in the *Anuário da Bolsa de Valores do Rio de Janeiro*, 1932–1942, and the *Relatorio da Câmara Sindical de Corretores Públicos da Bolsa de Valores do Rio de Janeiro*, 1947. Population data used to estimate the number of traded companies per million inhabitants is from Cláudio Contador, *Mercado de Ativos Financeiros no Brasil* (1974), Table A.1, which includes estimates of population by year since 1861.

The data on total traded shares after 1939 are not comparable to earlier observations because Law 1,344 of June 13, 1939 required that companies repurchasing stocks and doing private IPOs do all trading through the stock exchange. This inflated the data on total volume traded, making comparison with pre-1939 information difficult.

Detailed Note on the Brazilian Currency

Between 1850 and 1994, Brazil changed the name of its currency and unit of account at least eight times. During the period 1833–1942 it was called mil reis (thousand kings). I generally present the data in contos of mil reis (thousand mil reis), which is equivalent to one million reis.

and Raymond Goldsmith, *Brasil 1850–1984: Desenvolvimento Financeiro sob um Século de Inflação*, Rio de Janeiro: Banco Bamerindus and Editora Harper & Row do Brasil, 1986, Tables 3.1 and 4.2.

All data in nominal terms between 1942 and 1970 were denominated in cruzeiros. One cruzeiro was equivalent to one mil reis. Accelerated inflation caused accounting problems because all figures began to include too many zeros. As part of the stabilization program of the military government (1964–1985), the currency unit was changed in 1970 to the cruzeiro novo, equivalent to 1,000 cruzeiros, and renamed cruzeiro in 1984. By the time democracy was reinstated in Brazil in 1986, the accelerated inflation necessitated changes in the unit of account.

From 1986 to 1994, struggling to stabilize inflation, the first three democratic presidents of the new republican era changed currency units repeatedly. The first change was the introduction in 1986 of the cruzado, equivalent to 1,000 cruzeiros novos. In 1989, the stabilization program based on the cruzado having failed, the first democratic government of the new republic reduced three zeros in the unit of account and called the new currency the cruzado novo. The cruzado novo was renamed the cruzeiro in 1990, and in 1993, forced by rapidly increasing inflation to again eliminate three zeros, the government created yet another new currency called the cruzeiro real. When the stabilization plan begun in 1994, the Plano Real, finally reduced inflation, the unit of account was changed again and the currency of Brazil became, after July 1, 1994, the real, equivalent to 2,750 cruzeiros reais (the plural for cruzeiro real).

Exchange Rates

Many stock and debenture and equity issues were denominated in foreign currency, and there were companies and banks with capital denominated in pounds sterling, French francs, Portuguese escudos, U.S. dollars, German marks, and even Swedish Krona. All the exchange rates needed to convert these values to mil reis are from either the *Brazilian Year Book 1909* or the reports of the brokers association, using the average of the daily quotations in the month of December of the relevant year. When exchange rates were necessary after 1942, I used the annual exchange rate to the U.S. dollar from IPEA.