

## **The Funding Loan as a bailout: why did Rothschilds underwrite Brazilian bonds in 1898?**

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### **Abstract**

This paper argues that the 1898 Brazilian Funding Loan was a bailout determined by reputation and path dependence. Based on primary sources, it shows that Rothschilds' reputation depended on Brazil, as the former had underwritten all sovereign bonds issued by the latter in the four previous decades. In addition, the Funding Loan provided Rothschilds with policy ownership, with which it ensured that the government would reduce paper money in circulation, appreciate the exchange rate and improve its capacity to service the debt. The paper concludes that the bailout was the best choice available to the bank.

### **Resumo**

O artigo argumenta que o Funding Loans de 1898 constituiu-se em um bailout condicionado por reputação e *path-dependence*. Fontes primárias mostram que a reputação dos Rothscilds dependia do Brasil, uma vez que a casa subscreveu todos os títulos soberanos do país nas quatro décadas anteriores. Além disto, o bailout possibilitou que Rothscilds participassem na formulação de política econômica brasileira, o que garantiu a redução de papel moeda em circulação, e conseqüentemente a apreciação cambial e a melhora da capacidade de pagamento externo do país. O artigo conclui que o bailout era a melhor escolha disponível ao banco.

### **1 – Introduction**

Why did the Rothschild underwrite a £8.6 million loan to Brazil in 1898, in the middle of a fiscal and payment crisis? This paper argues that the Funding Loan was a bailout operation explained by special relations and long lasting relations between the bank and the country, which created mutual dependence. The claim stands as an alternative for the literature on sovereign debt, as it highlights the role played by path dependency and reputation between borrower countries and underwriters – a crucial link in major nineteenth century financial operations that the literature often neglects.

The paper is divided into four sections. Section 2 addresses the effects of Brazilian economic crisis in the 1890s. Key quantitative evidence is presented. Section 3

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uses qualitative material in order to assess the mutual dependence between the Rothschild and Brazil. Section 4 concludes the paper by proposing an underwriter-borrower game based on this case study.

## **2 – Spreads, sovereign bailout and Brazilian crisis of the 1890s**

The literature on sovereign debt presents a set of factors on which creditors infer the risk of default on sovereign bonds. Most studies assume that countries will default if the benefit of doing so (not paying services) is greater than the cost of defaulting (future lack of foreign borrowing). If a country faces increasing benefit of defaulting vis-à-vis its cost, her sovereign bonds will be considered riskier on the secondary market, and therefore their prices will be depreciated. As a consequence, risky bonds pay high spread rates, which is known as the risk premium condition.<sup>1</sup> This section shows why that this was the case with Brazilian bonds in the 1890s.

The literature The cost and benefit of default depend on a series of macroeconomic fundamentals, political institutions and conditions in world liquidity. Macroeconomic fundamentals are often the most commonly presented factors on creditworthiness. The larger is the sovereign debt stock vis-à-vis tax revenue and exports - respectively given by  $SD/T$  and  $SD/X$  - the heavier is the burden of servicing the debt, and therefore the greater is the benefit of defaulting.<sup>2</sup> Exchange rate plays a crucial role in  $SD/T$ , as taxes are collected in domestic currency and sovereign debt is denominated in foreign currency. Therefore, currency depreciation makes a default more likely.<sup>3</sup>

Moreover, countries that borrow to invest in productive infrastructure or to convert their debt into bonds quoted at better conditions improve future fiscal results. This is not the case when borrowers use loans to finance fiscal deficits or warfare.<sup>4</sup> On the other hand, governments in politically unstable countries are likely to borrow too much in order to finance military expenditure. If the enemy's victory is certain, the cost of default is zero and service will not be paid.<sup>5</sup>

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<sup>1</sup> See, for instance Eichengreen, (1991, pp. 149-69), and Bulow and Rogoff (1989, p. 10).

<sup>2</sup> Flandreau and Zumer (2004, pp. 31-39).

<sup>3</sup> That is the reason why the adoption of the Gold Standard has been presented a "seal of approval" by Bordo and Rockoff (1996). See also Obstfeld (1986).

<sup>4</sup> Fishlow (1995, pp. 37-40).

<sup>5</sup> For the nineteenth century Latin American case, see Taylor (2003, pp. 7, 8).

Finally, world financial crises may increase the perception of risk on all net borrowing countries, which makes investors more likely to invest in safe securities, often public bonds issued by rich countries. With less liquidity on international markets, countries are less likely to borrow abroad, which reduces the cost of defaulting.<sup>6</sup>

The historical analysis proposed in this paper may start on the last point above. Following an Argentinean default in 1890, the Baring crises caused a great fall in world liquidity, which has been referred to as the first global financial crisis ever.<sup>7</sup> For being a net capital importer such as Argentina, one would expect that the spread on bonds issued by Brazil would increase in the period, regardless of what happened within the country.<sup>8</sup> The paper argues, however, that economic and political crises caused within Brazil after the 1889 Republic Proclamation are enough to explain the perception of risk the market had on the Brazilian bonds. In other words, this section shows that Brazil was expected to default in 1898 because of domestic factors, even though she had the best record on debt servicing in Latin America.<sup>9</sup>

The politics of the first republican decade were dominated by disputes between the army and coffee growers from São Paulo over centralization of power in the hands of the president, which was defended by the former and opposed by the latter. The militaries imposed two authoritarian administrations, from 1889 to 1894, after which the *paulista* Prudente de Morais became president. The election inaugurated a civil regime that lasted for thirty five years, during which the coffee sector was politically dominant. The Morais administration, however, faced violent opposition from the army and popular urban sectors, mainly in Rio de Janeiro, which explains military indiscipline, urban riots and attempted assassination of the president, in 1897. In parallel, the government fought rebels in two costly and bloody civil wars: the Federalist Revolution, in the extreme south, and the Canudos War, in the northeast.<sup>10</sup>

Matters were also dire in relation to macroeconomic fundamentals. The first republican administration granted emission rights to different banks throughout the

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<sup>6</sup> Fishlow (1995).

<sup>7</sup> See Flandreau and Zumer (2004).

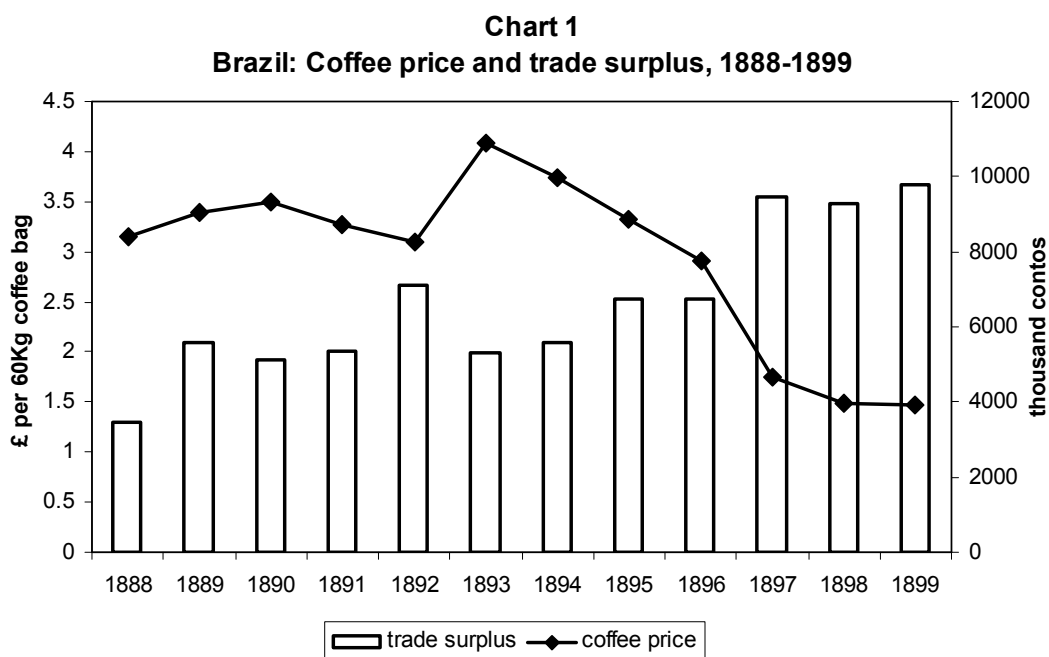
<sup>8</sup> Although this point can be accepted as a hypothesis, Mauro et al (2006) reject it, as their statistical test did not show such financial contagion significant in the first era of globalization.

<sup>9</sup> For an overview on Brazil's sovereign debt, see Abreu (2006), and Summerhill, forthcoming.

<sup>10</sup> Fausto (2002, pp. 249- 259).

country and, concomitantly, provided the system with liquidity in order to support those who lost slaves in the 1888 emancipation. The outcome was a financial boom culminating in a stock market crunch, in 1891. Monetary expansion was reduced but not controlled in the Morais administration, and, by 1898,  $M_2$  was almost four times higher than in 1889.<sup>11</sup> The exchange rate strongly depreciated as a consequence: by the time the Funding Loan was issued, in 1898, the *mil-réis* was almost four times weaker than in 1889, the last year of the monarchic regime.<sup>12</sup>

The exchange depreciation was caused by monetary expansion rather than external factors. That is so because trade surplus was not strongly compromised by the period's falling coffee prices, as reported in Chart 1 below. The exchange depreciation actually compensated low staple prices, maintaining profitability among coffee growers and stimulating production.<sup>13</sup>



Source: Estatísticas Históricas do Brasil, pp. 535-537.

<sup>11</sup> Estatísticas Históricas do Brasil (1987, pp. 535-537).

<sup>12</sup> The exchange rate between *mil-réis* and pence decreased from 27.2, in 1889, to 7.20 pence in 1898. *Estatísticas Históricas do Brasil* (1990, pp 522-523).

<sup>13</sup> See Peláez and Suzigan (1976, pp. 78-81) and Fritsch (1988, pp. 2-8).

In contrast, fiscal policy was extremely unsound in the 1890s. Warfare increased military expenditure from 27 thousands contos to 143 thousand contos (the equivalent of 18.20% and 38.35% of total federal expenditure) between 1888 and 1893, at the end of the Federalist Revolution. Although warfare expenditure decrease after the war in the South, it did not go back to the level of the 1880s.<sup>14</sup>

Moreover, in spite of high inflation the income from customs - the main source of federal government revenue – only doubled in nominal terms from 1888 to 1898. As a result, the share of customs collection in total revenue decreased from 72.02%, in 1888, to a low of 46.65% three years afterwards, after which it did not fully recover.<sup>15</sup> Such poor collection two main explanations: exchange depreciation compromise the increase in imports, which remained relatively constant in the decade;<sup>16</sup> and the 1891 republican constitution devolved export duties to the states.<sup>17</sup>

In order to finance recurrent fiscal deficits, Brazil borrowed around £11 million in London, in 1893 and 1895.<sup>18</sup> This contributed to the increase in sovereign debt stock, whilst the value of tax revenue in British pounds was drastically reduced by falling exchange rate. As a consequence, *SD/T* more than doubled in the decade, as reported in Chart 2. The only fundamentals that did not deteriorated (although it did not improved) was *SD/X*.

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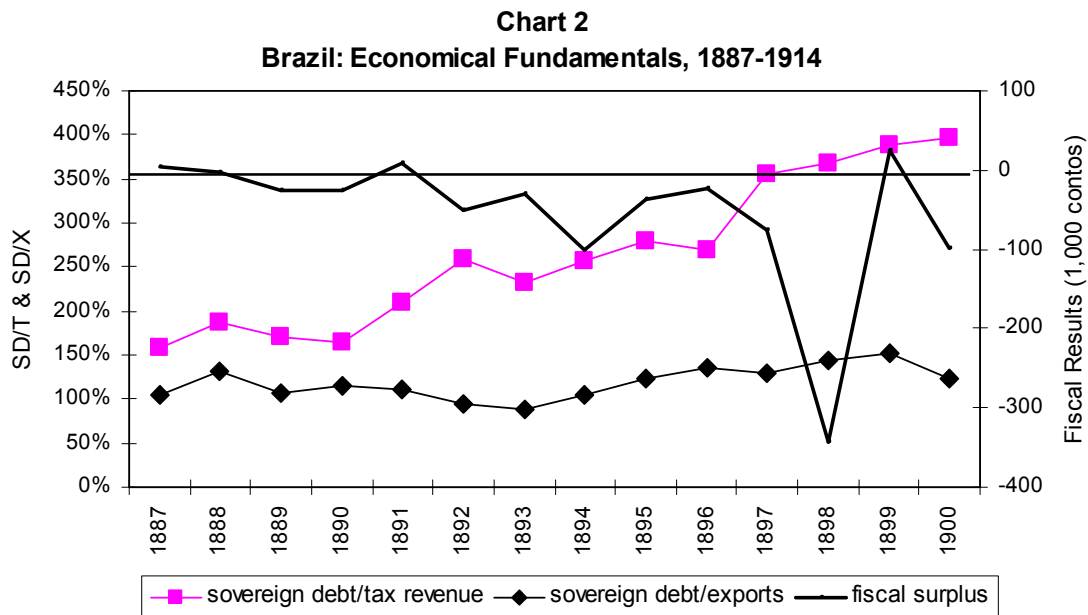
<sup>14</sup> Balanço da Receita e Despesa do Imperio; and Balanço da Receita e Despesa da República, various years.

<sup>15</sup> *Ibidem*.

<sup>16</sup> *Estatísticas Histórias do Brasil* (1990, pp. 569, 570).

<sup>17</sup> Balanço da Receita e Despesa da República, various years.

<sup>18</sup> See Franco, 1990, pp. 23-25; and Bouças (1955, pp. 91-94).



Source: Bouças (1955); *Estatísticas Históricas do Brasil* (1987, pp. 570, 571).

In face of such policy misstatement, the British press informed readers that the worst was yet to come as long as Brazilian sovereign debt was concerned. For instance, *The Investor's Monthly Manual* expected a “*fin-de-siècle* expedient of a moratorium,” for:

“The Brazilian Government has got to the end of its tether, and (...) further borrowing upon a sufficient scale has become practically impossible.”<sup>19</sup>

Similarly, *The Investor's Review* reported that “the rate of exchange barometer (...) points straight to national insolvency.”<sup>20</sup> Meanwhile, *The Economist* asserted that “the recent mails to hand from Brazil shows that default in the service of the foreign debt is regarded locally as only a matter of time.”<sup>21</sup>

As expected, foreign bondholders responded to the crisis by adjusting the perception of risk on Brazilian bonds, whose prices quoted on the London Stock Exchange slumped in the 1890s. The average of spreads on such bonds, weighted for

<sup>19</sup> *Investor's Monthly Manual*, vol. 28, n. 5 (31<sup>st</sup> May 1898), p. 225.

<sup>20</sup> *The Investor's Review* (29th of April, 1898), p. 599.

<sup>21</sup> *The Economist*, p. 8, vol 56, Issue 2852, (23<sup>rd</sup> of April, 1898), p. 8.

their market capitalization, increased from around 1% in the 1880 to 6.47% in July 1898, the month the Funding Loan was issued.<sup>22</sup> The striking point, however, is the funding bonds were floated on the market at 2.53%: two times and a half lower than the average spread paid by old Brazilian bonds. This odd difference and the increase in spreads on Brazilian bonds in the first republican decade are showed in Chart 3 bellow. The spreads for loans are the ones arranged in their contracts, and therefore have been plotted in the months they were signed. The chart reports data for a wide period, from 1886 to 1914, which enables a long term analysis.

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<sup>22</sup> The methodology used to calculate the average spread on Brazilian bonds is based on the following formula:

$$\rho_{c,t} = \sum_{i=1}^n \left( \frac{Y_{i,t} K_{i,t}}{\sum_{i=1}^n K_{i,t}} \right) - B_t$$

where:  $\rho \equiv$  spread in period  $t$ ;

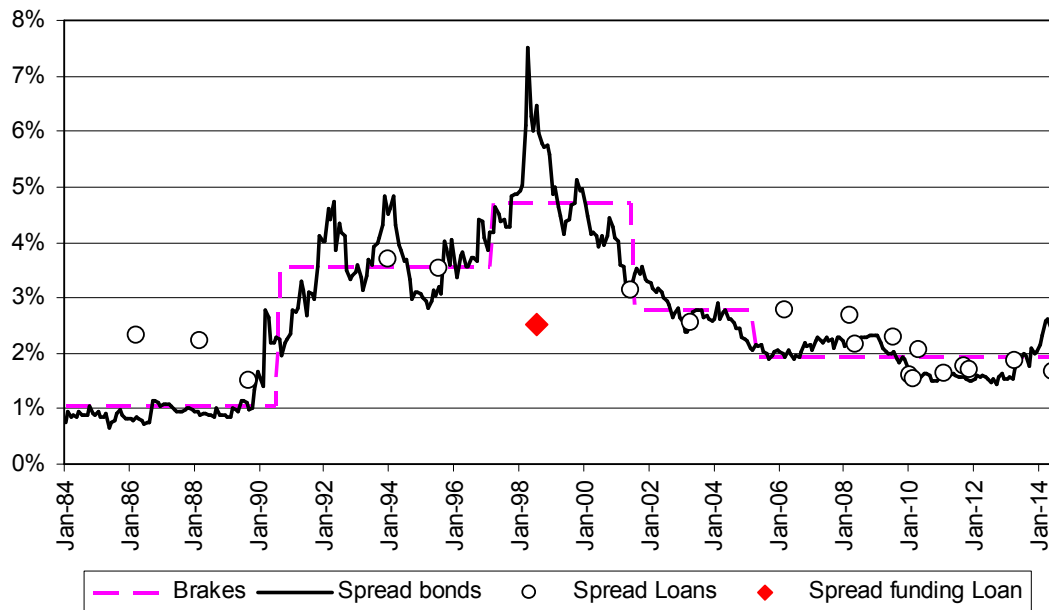
$Y_i \equiv$  yield to maturity of the chosen representative bond  $i$  in period  $t$ ;

$B_i \equiv$  benchmark yield in period  $t$ .

$K_t^i \equiv$  market capitalization of bond  $i$  in period  $t$ .

The series for yield to maturity has been calculated from the price of bonds quoted in the last day of each month, as quoted in *The Investor's Monthly Manual*. This methodology consists in an original contribution to the literature, for previous work, such as Tomz and White (2007) and Flandreau and Zumer (2004), calculate country's spreads from "representative bonds", which disregards peculiarities of different securities. Mauro *et. al* (2006) have improved such methodology by weighting bonds according to their market capitalization. However, these authors calculate spreads from coupon yield rather than yield to maturity, and therefore disregard differences in maturity term.

**Chart 3**  
**Brazil: Spread on old bonds and on new loans, 1884-1914**



Source: *The Investor's Monthly Manual*

The disproportionately low spread at which the Funding Loan was granted is in odds with the *Initial Public Option* condition. The condition proposes new bonds should be floated on the market at spreads higher than those paid by old bonds, which compensate the lower risk on old bonds, explained by seniority.<sup>23</sup> This explains why the spreads on seventeen out of the twenty loans granted to Brazil in the whole period are above the curve for average spread. The fact that the Funding Loan was arranged at such good conditions has only one reasonable explanation: Rothschild was keen to provide Brazil with money at more favourable rate in order to allow the country to pay services on the old bonds. In fact, the contract that arranged the operation specified that services were to be paid with funding bonds rather than cash until 1901.

Chart 2 also shows that the crises of the 1890s disturbed the long term trend on Brazilian spreads. In other words, the Funding Loan was granted in an uniquely bad period. This is confirmed by a structural brake test on the curve for average spread, which

<sup>23</sup> Flandreau and Flores (2007, pp. 10, 11).



reports two brakes just before and after the operation. This is presented in the chart by the dotted line, which reports the average spread between structural brakes.<sup>24</sup>

The fact that Rothschild underwrote the Funding Loan at disproportionately low spread when the risk of default on Brazilian bonds was at its long term highest has only one explanation: the bank was avoiding a default by bailing the country out. The following section provides qualitative evidence to support this bailout explanation.

### **3 – The Rothschild, Brazil and the Funding Loan**

Besides arranging generous lending, the Funding Loan's contract set important agreements on debt servicing and policymaking. It was agreed that the interest on all Brazilian bonds had to be paid with funding bonds until 1901, when the country would resume the payment with cash backed by a newly established 25% gold import duties. In addition, amortization on the new and old sovereign bonds was suspended until 1911.<sup>25</sup> Therefore, the Funding Loan was not only issued at a rather low premium, it also arranged a relief in service payment and prevented a default on Brazil's sovereign debt. This section explains such an improbable operation based on the relations between the Rothschild and the Brazilian government.

The history of the English Rothschild's businesses in Brazil dates from early nineteenth century. After being involved in the then Portuguese diamond trade, the bank started to underwrite Brazil's bonds in 1825, three years after Independence. The Rothschild was appointed the government's financial agent in London in 1856, making it in charge of paying services and issuing sovereign loans. Such lending monopoly remained unchallenged until 1908.<sup>26</sup>

As the Rothschild became important for Brazil, so the country became important for the bank. Chart 4 shows that Brazil was amongst Rothschild's main three clients by the time the funding loan was granted. That is, a Brazilian default would damage the house's reputation as an underwriter in a level comparable to a Russian (or even an unthinkable British) default.

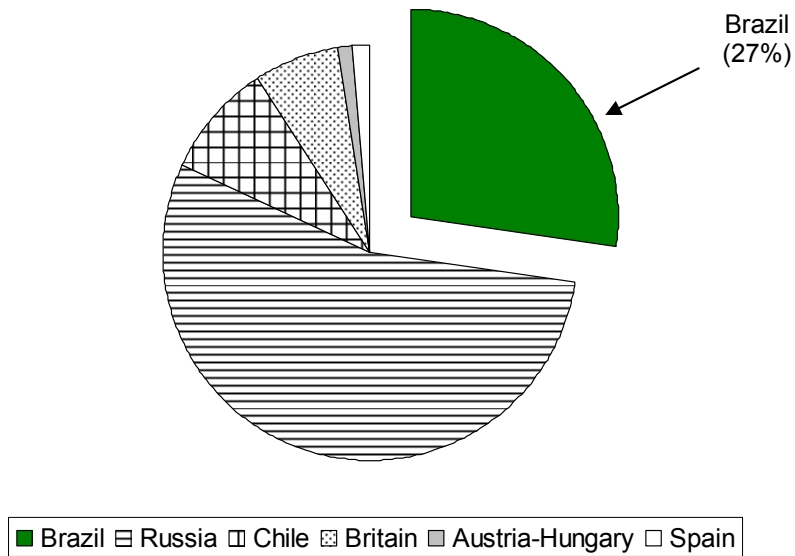
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<sup>24</sup> The structural brake test follows the methodology in Perron (1998). The brakes presented in the chart have been calculated using the LWZ test. The results from the BIC test is practically the same as the LWZ, with one extra brake for February 1910. For simplicity, this paper disregard this extra suggested brake.

<sup>25</sup> Brasil, 1909, pp. 15, 20.

<sup>26</sup> Ferguson, 1998.

**Chart 4**  
**Sovereign bonds underwritten by Rothschild floating,**  
**London in June 1898**

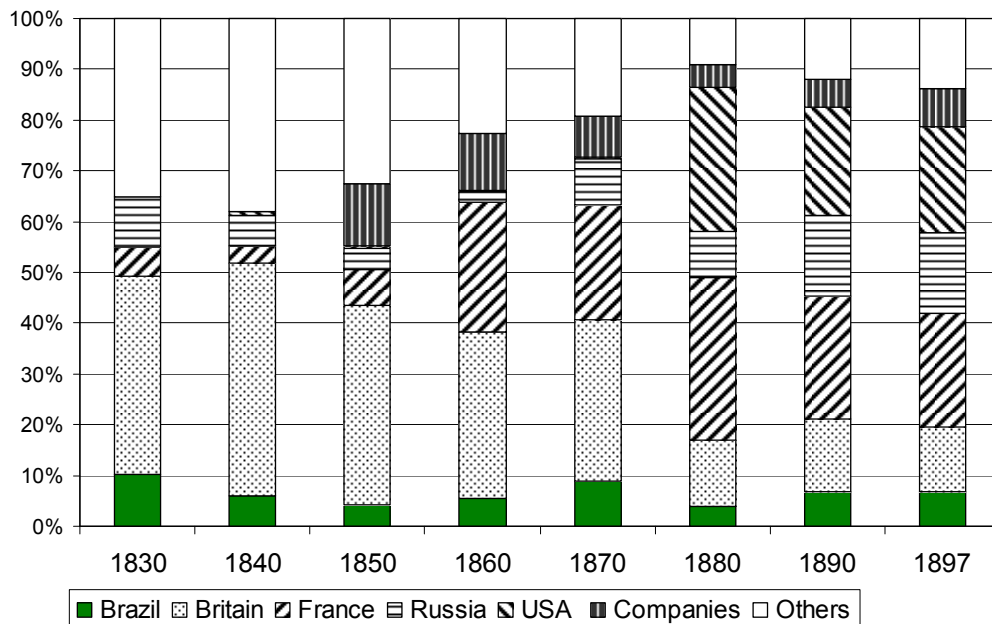


Source: Source: *Investor's Monthly Manual*, n. 7, vol. 28, (30th July, 1898), pp. 396-397.

Besides being deep by the time the Funding Loan was granted, the relationship between the Rothschilds and Brazil was also old. It started in early nineteenth century, when the bank financed some diamond trade of what was then still a Portuguese colony. Rothschilds were among the first house to underwrite Brazilian bonds in 1820s, and in 1855 it was appointed the country's financial agent in Europe. Between that year and 1908, all sovereign bonds issued by such special client was underwritten by the bank.<sup>27</sup> This long term relations appear clearly in the Chart 5 bellow, which reports all the securities underwritten by Rothschilds, alone or with other houses. Brazil holds between 5% and 10% of the total securities throughout the whole 19<sup>th</sup> century.

<sup>27</sup> Ferguson (1998).

**Chart 5**  
**Total securities issued by London Rothschild, 1818-1897**  
**(cumulative shares at constant prices)**



Source: London House of Rothschild, *A century of finance: 1804-1904*. London: Neely, 1905.

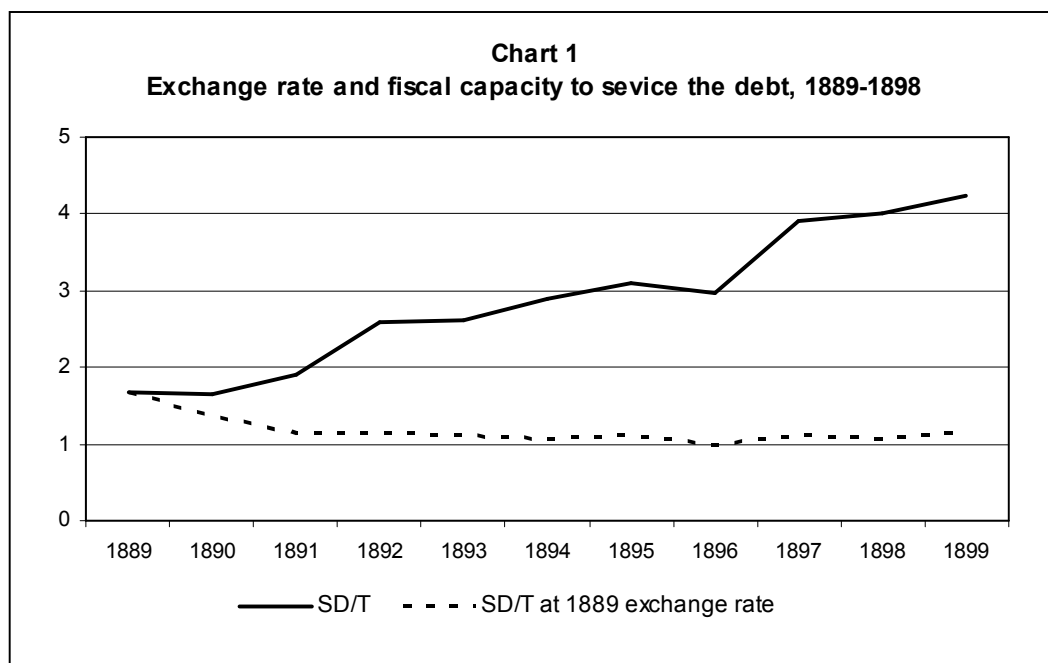
In fact, the Rothschild was directly connected to high officials in Rio de Janeiro. Such special relations provided the bank with inside information, which is particularly clear from the Funding Loan correspondence. The operation's contract established that Brazil would burn national currency in an amount equivalent to the bonds issued, implying a fall in monetary stock and the straightening of the national currency.<sup>28</sup> The operation was established at 18d. per *mil-réis*, although the Rothschild proposed to lower the rate to 16d., which would force Brazil to withdraw more liquidity from circulation. The government was inflexible, though, as the 16d. rate would decrease the monetary stock far too much, causing "embarrassments to the National Treasury."<sup>29</sup> The episode shows that the Rothschild interfered in monetary policy, although Brazil was strong enough to negotiate the "ownership" of policymaking with the bank. Secondly, it seems

<sup>28</sup> Brasil, 1909, p. 20.

<sup>29</sup> Ibid, p. 29.

that the house understood the need for improving the exchange rate in order to avoid a default.

The bank had actually been informed by the finance minister Bernardino de Campos (1896-1898) about the role played by the weak *mil-réis* in the Brazilian crisis. In a letter sent to the Rothschild in early 1898, the minister declared that depreciation was a “bottomless pit without which Brazil would already have converted the 1890s fiscal deficits into surpluses”.<sup>30</sup> Although Campos’ point goes too far, exchange rate did deteriorate service capacity. This is shown in Chart 6, according to which *SD/T* would have actually decreased had the exchange rate remained stable at the 1889 level.



Source: *Estatísticas Histórias do Brasil* (1987, pp. 570, 571).

The Rothschild was aware of Brazil’s future monetary policy, and therefore expected an improvement in the country’s capacity to service the debt. One can assert that the access to inside information convinced the bank to issue the Funding Loan, and perhaps even made it influence bondholders to purchase the bonds. Nevertheless, evidence shows that the Brazilian government pressured the underwriter in order to grant the loan. By early 1898, a letter from president Morais to minister Campos reported that

<sup>30</sup> Ibid, p. 17.

the Rothschild was pessimistic about the availability of credit. The bank suggested the leasing of Central do Brazil, the country's main state railway line, as a solution to the crisis. The president then determined an aggressive strategy: the minister was to oppose the railway leasing and to "insinuate that (the government would) be fatally forced to suspend payments abroad if (it) does not obtain the loan."<sup>31</sup>

Such a blackmail strategy worked, as the Funding Loan was arranged two months later. The Rothschild then agreed to "immediately communicate with the Council of Foreign Bondholders" and to "use our best endeavour to induce them to accept the propositions contained in your message".<sup>32</sup> The bank was forced to bailout Brazil, moving "heaven and earth to protect the issues for which they are responsible," as was published in an English periodical at the time.<sup>33</sup> Once agreed to launch the loan, the Rothschild made sure that the client would improve its foreign credit through orthodox monetary policy. In summary, the sequence of correspondence shows that the Funding Loan is explained by path dependency and reputation; inside information played a subsequent role in improving the operation's expected profitability.

#### **4 – Conclusion: the underwriter-government game**

The fundamentals proposed in the literature on sovereign debt do not explain why the Rothschild underwrote the Funding Loan. The operation can only be understood if one bears in mind that the banker and the country had a well established relation that created mutual dependence. Brazil needed the Rothschild to borrow abroad, whilst the latter would suffer a serious reputation loss if the bonds it had underwritten went into default.

This conclusion suggests an agent-principal game that addresses relations between governments and underwriters, a crucial link in the nineteenth century sovereign debt market that the literature often neglects. The game can be proposed as follows: (1) the government decides whether to default based on the cost and benefit of doing so, such as proposed in the literature; (2) the underwriter decides whether to bailout regarding the reputation costs of having some of its bonds in default, as well as possible gains created

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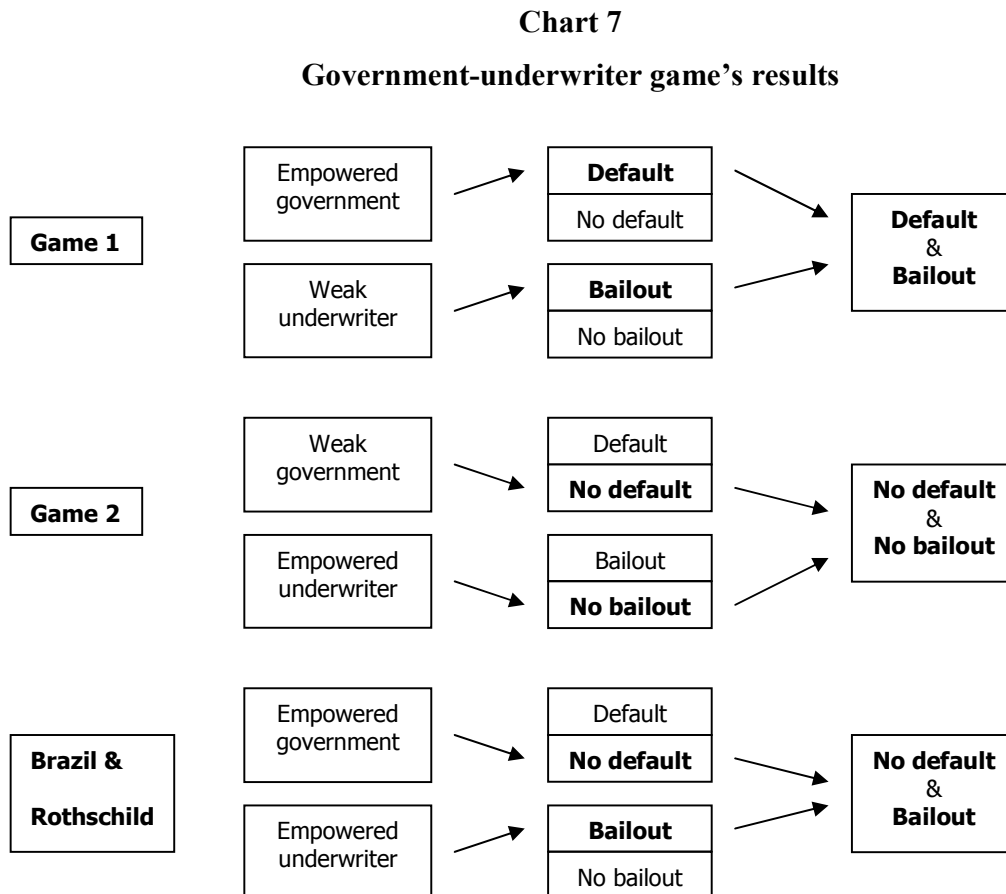
<sup>31</sup> IHGB, ACP66, DL1592,45

<sup>32</sup> RHA, XI/65/6.

<sup>33</sup> *The Herapath's Railway*, vol. 59, n. 3048 (15<sup>th</sup> October, 1897), p. 1054.

by inside information. The game's main contribution is that it considers not only the borrower's but also the underwriter's choices.

In one extreme situation, represented in game 1 in Chart 7, the underwriter has only underwritten bonds of a certain government that, for some reason, will always be able to borrow through other source. The government would count on a bailout, which incentives bad policymaking and increases the benefit of defaulting vis-à-vis its cost. The debt will eventually be defaulted. The other extreme case, represented in game 2, happens when the country is unimportant for the underwriter, although the latter is the only source of credit to the former. The underwriter would never bailout the government, which would face too high a cost to default.



The results of the 1890s Brazil-Rothschild case is represented by game 3, in which both parts have considerable power over each other. Brazil was able to threaten the

Rothschild with a default, although highly dependent on the house to borrow abroad. This situation created the incentive for bad policymaking, which increased the benefit of default. However, the dependence on the underwriter guaranteed high defaulting costs and prevented the suspension of services payment. The Rothschild had two reasons to bailout the government. Firstly, the operation improved the government's finance and decreased its incentive to default. Secondly, inside information seems to have made the bank expect an improvement in the bonds' rating, which actually materialized as shown in Tables 1 and 2.

The government-underwriter games proposed in this paper do not distinguish the "carrot" and "stick" reasons underwriters consider when launching a bailout - respectively preventing a default and capturing gains from inside information. In the Funding Loan case, the Rothschild firstly agreed to launch the operation in order to prevent a default. Once the deal was arranged, the bank used its participation in the ownership of Brazil's monetary policy to insure the *mil-réis* appreciation, which increased the country's rating and made the 1898 bonds profitable. In short, the stick rather than the carrot moved the bank. Nevertheless, game 3 explains the main outcomes assessed in this paper: the deterioration of Brazil's fundamentals, the lack of default and, mostly important, the Rothschild decision to underwrite.

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