THE ESTRADA DE FERRO SOROCABANA: AN IDIOSSYNCRATIC RAILWAY COMPANY IN SÃO PAULO (1872- 1919)

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Introduction

Most of the historiography on business enterprises have focused on the analysis of successful cases, neglecting the potential contribution the study of entrepreneurial failures can provide to the understanding of a given historic context. In this respect, the untoward history of the Estrada de Ferro Sorocabana may shed light on the circumstances surrounding the early stages of railway business in Brazil.

Two major dichotomies are recurrent in the literature about the performance of the pioneering railway companies in Brazil. One relies on the form of ownership: it is often claimed that private-owned railway companies provided better services to their customers, were better run and more profitable than their government-owned counterparts. The other lies in the type of good hauled, more specifically whether or not coffee was responsible for a high volume of transport or a high fraction of the overall freight receipt.[2]

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In light of these two dichotomies, the history of the Sorocabana is peculiar since it embraced both the ends of each dichotomy. Beginning as a private company in 1872, its control was transferred in 1901, after a lengthy period of ever increasing financial distress, to a receiver nominated by the federal government, then its main creditor. In 1904, the latter purchased it on an auction, selling it shortly afterwards to the government of the State of São Paulo, which in turn rented it in 1907 to a foreign enterprise, the Sorocabana Railway Company. The foreign control lasted until 1919, when the State of São Paulo took it over again, owing to the deterioration of the company's physical capital and the worsening of the quality of services supplied. Thereafter, and until the beginning of the 1990s, the Sorocabana was both state-owned and state-run. Hence, private and state ownership as well as private – national and foreign – and state management made up its history.

As regards the goods hauled, Sorocabana was not created with the main purpose of transporting coffee, contrasting thus with other railways then operating in the State of São

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[1] For Duncan (1932), that dichotomy was straightforward: *"coffee was the only merchandise transported at a large scale and whose value supported a high freight, guaranteeing the 'coffee railway' high profitability, while the remainders were bound to suffer frequent operating deficits."*

Paulo. During the Civil War in the United States, when American cotton exports to Britain were disrupted, the cultivation of that fibre boomed around the region of Sorocaba. Almost at the same time the United States began to resume its exports, a cotton trader from Sorocaba, Luiz Matheus Maylasky, organised the foundation of Sorocabana. Among other objectives he aimed at reducing the costs of cotton freight. Later, that railway extended its operation to regions producing coffee at a larger scale. Even though at a much smaller extent than the two "coffee railways" – Paulista and Mogiana – coffee accounted for an increasingly greater share of the Sorocabana's total freight. Nonetheless, that shift did not lead it to match the profitability of these counterparts nor prevented it from dire financial stresses.

What lay behind Sorocabana's successive failures? Sanguine expectations about future cash flows, poor management, a shortage of governance that its financing structure engendered, or merely bad luck? This paper deals with these questions, focusing on two periods: one, 1872-1901, wherein Sorocabana was owned and run by Brazilian businessmen, and the other, 1907-1919, during which the company was under the control of foreign investors. The paper is structured as follows. Section 1 tries to identify at a more conceptual level the problems promoters of railways encounter in undeveloped economic environments. Section 2 and section 3 examine, respectively, the two above-mentioned periods. The last section highlights the main conclusions are allowed to derive from available evidence.

1. Some conceptual remarks on the railway business in the early stages of the economic development

The history of railway financing in many countries throughout the 19th century evidences a reasonably similar pattern. Unquestionably, these similarities stemmed from some characteristic features involving the railway business, the most remarkable of which being externalities and indivisibility of investments. The building of railways is likely to generate returns that exceed those reaped by their own promoters. That gap between social and private benefits *may* therefore provide a rationale for welfare-enhancing government intervention – subsidies, state-owned enterprises, or land grants. Moreover, in the context of incipient financial markets characterising countries in their early stages of economic development, the requirement of huge amounts of funds to finance the construction of a railway, far beyond individuals' wealth, would hardly have been fulfilled voluntarily. This also gave grounds to some form of extra-market interference – such as, for example, dividend or interest guarantees – with a view to addressing the fund-raising deadlock.

Indeed, railways in many countries in the 19th century were by and large built thanks to government support – be it subsidies, state ownership or land grants. Another way of circumventing the financing hurdle obviating railway expansion on that time was foreign capital – essentially British capital until the 1870s. In the middle of that century, London had already a relatively developed capital market. Merchants, aristocrats, and industrialists (or the heirs of pioneers of the Industrial Revolution not interested in remaining managing manufactures) sought more profitable allocation than their own businesses or public bonds for their mountainous amounts of savings. Either as direct or portfolio investments, these funds effectively contributed to set up the railway systems in a great number of countries – as in the United States, Canada, India and Brazil, all of which interested in absorbing the technology, the capital goods, and the (cheaper) finance the British could provide.

Furthermore, circumstances prevailing in the 19th century magnified the adverse effects of informational asymmetries inherent to financial transactions. The Economics of Information emphasises two types of problems: selection and incentive. Entrepreneurs seeking for money have information about their own projects that is not available to potential investors, who consequently cannot know the real *characteristics* of the various assets wherein they might invest, what prevents them from evaluating correctly actual risks and returns. That is the selection problem. The incentive (or moral hazard) problem emerges once suppliers of finance part with their money. Having large latitude for risky behaviour, the recipients of funds may act in a way that damage investors (Stiglitz, 2000; Eichengreen, 1995). These problems springing from "private information" were acute in the 19th century, exacerbating the difficulty to raise private funds for financing railway projects. Likewise, mechanisms that could obviate or at least mitigate those hurdles were blunt or did not exist at all. Perhaps apart from England, the most developed countries then lacked effective governmental oversight and regulation ensuring the disclosure of companies' financial information and protection of investor rights. Even when mandatory rules existed, enforcement was unreliable.

Against that background, how did railways' promoters manage to get large amounts of funds to undertake their investments? Shleifer and Vishny (1997) point out some reasons whereby investors are willing to provide capital to firms. First, entrepreneurs have incentives to build and maintain reputation. Second, investors may be sometimes overoptimistic, being fairly subject to manias and herd behaviour that render them strongly willing to supply money for even unsound projects in periods of euphoria. Third, investors are inclined to supply funds when they are endowed with some power, which means either legal protection against managerial expropriation or the concentration in the hands of a large investor of financial claims (shares or debt) on a firm.

Presumably reputation was not an asset to which promoters ascribed a high value at the beginnings of the history of railways – the benefits of swindles probably overcame the costs of reputation loss. Legal protection in the form of adequate regulation and effective enforcement was, as argued above, absent. Waves of overconfidence and euphoria alternated with exaggerated pessimism have been common in the history of capital markets and trading of assets (Kindleberger, 1996). Railway manias, in particular, occurred in England in the 1830s and 1840s, and in Germany and the United States in the early 1870s. Unwarranted by any economic criterion, most of those speculative investments either went bankrupt soon after realised or were not undertaken at all, in spite of enabling promoters to reap abnormal profits.

Large creditors (banks) and holders of large blocks of equity shares might have the incentives and power to screening the quality of railway projects and monitoring their management once they begin to be built – mitigating the free-rider problem that prevents small shareholders or creditors from supplying monitoring. Nonetheless, concentrated ownership of shares in, or of debt claims on, a single or few investors may lead to inefficiency as well – the risk of large investors expropriating other stakeholders (minority shareholders, bondholders etc.). This risk appeared to be quite high in the 19th century business and financial landscape inasmuch as this period missed the regulatory underpinning that could preclude that form of opportunistic behaviour.

Taking into account all the above-mentioned difficulties to raise railway financing and the purported spillover effects railways could create, small wonder that interest or dividend guarantees were a widespread resort provided by governments throughout the world. But guarantees weakened the incentives for private investors to monitor management. Unless government undertook that task, managers enjoyed greater scope for discretion, which could be directed to exploit "private benefits" at the expense of taxpayers and/or minority

shareholders.
Financial market failures were much more severe in peripheral countries, making the financing of railways even more difficult. Low rates of savings and shallow financial markets forced by and large these countries to resort to foreign (direct or portfolio) investment to promote the construction of their railway systems. Furthermore, given that even during the Classic Gold-Standard currency devaluation was by no means a rare event in those countries, the currency mismatch between receipts and expenses caused dramatic troubles. Whereas tariffs were denominated in domestic currencies, the charge of the debt and the costs of some inputs (coal, for example) were largely denominated in foreign currency. Any external shocks – wars, changes in the terms of trade, or halt in capital inflows – represented therefore serious disturbances not only to railways' shareholders but also to their bondholders – owing the greater risk of default.

2. The ~~A~~ Sorocabana as a national private enterprise: 1872-1902
The thrust for the cotton surge around the region of Sorocaba in the 1860s came from the American Civil War, which unravelled the supply of that raw material to the European textile manufactures. The growth of cotton exports in the Province of São Paulo was tremendous, mainly around Sorocaba: from 1.3 tonne in 1862 to 2,898.6 tonnes in 1865, peaking 10,204.6 tonnes in 1871. As the United States managed to progressively resume its cotton exports, São Paulo's declined rapidly, falling to just 643.1 tonnes in 1877 (Canabrava, 1951, p. 301).
Motivated by the high level of cotton exports and the intent to reduce transport costs, a cotton trader, Luiz Matheus Maylasky, raised capital with a view to building a railway, the Estrada de Ferro Sorocabana (Canabrava, 1951: 243, 301). For this, Maylasky requested from the Province of São Paulo an "interest guarantee" at seven per cent a year on the investment to be undertaken. As seen above, this form of governmental intervention was warranted on market failure grounds – externalities and undeveloped financial markets – and was a practice widely adopted around the world in the 19th century.
Maylasky was the decisive protagonist in constituting the company, winning over, as the first shareholders of Sorocabana, some landowners from the region of Sorocaba, capitalists from the city of São Paulo (like Bernardo Gavião Peixoto) as well as some capitalists and *rentiers* from Rio de Janeiro (Companhia Sorocabana, 13/1/1881: 136). He became the company's president from its foundation in 1872 to May 1880, when a shareholder meeting ousted him.
Part of the difficulties that led to that outcome can be traced to the period of building the railway's first track, inasmuch as the logic underlying the interest-guarantee scheme was not complied with. The arrangement was supposed to function as follows: the company should raise its capital through the issuance of equity capital, which would be used to finance the building of the railway and the purchase of equipment. While the railway was not generating profit, the Province of São Paulo should provide shareholders with the payment of the seven-per-cent interest guarantee – reckoned on the basis of the authorised capital. However, the capital raised through the acquisition of equity-capital shares was not enough to cover all the outlays on the building of the railway and the purchase of machinery. As shown in Table 1, that gap widened rapidly in the first three years, being financed by debt.

Table 1

Year	Paid-in capital	Cost of the lines and equipment
1873	3,080:000$000	3,694:000$000

1874	4,000:000$000	5,463:000$000
1876	4,119:000$000	7,073:565$000
1877	4,486:000$000	7,164:764$000
1878	4,681:000$000	7,164:764$000

Source: Companhia Sorocabana (various issues)

Even before beginning to operate, the Sorocabana had already borrowed 304:573$033 from the Deutsch Brasilianische Bank, as an advance on the 10th capital call to the shareholders (Companhia Sorocabana, 15-2-1874). In 1877, the Sorocabana's overall debt achieved 2.670:113$062, of which 1.816:488$780 was due to the German bank, and the remainders being borrowings from suppliers and contractors. This remarkable increase in the level of debt to the German bank led Sorocabana to tap the bond market, where it issued 4,600 bonds – each worth £50, at a fifteen per cent discount – at six per cent interest a year to be paid every six months and amortisation at one per cent (Companhia Sorocabana, 17/3/1878). Sold to the public at an exchange rate of 24 1/8 pence/mil-réis, those bonds yielded 1,944:870$660, allowing Sorocabana to liquidate its debt to the German bank. The New London Brazilian Bank was elected as the bondholders' banker.

The outstanding symptom that reveals the degree of financial distress Sorocabana already faced in the 1870s was the utilisation often given to the guarantees of interest advanced by the Province. Instead of ensuring shareholders a minimum return on their invested capital, the guarantees of interest were usually shifted to finance the building of prolongation of lines and the purchase of rolling stock, or even to pay the debt service.[2]

What gave rise to Sorocabana's financial problems in its first years of existence? Several hypotheses can be put forward: a) they were inescapable in the early stage of any railway project; b) they were the result of unrealistic expectations about potential demand; c) the outcome of embezzlement; d) or of inefficient management; e) or merely bad luck? Although the available evidence prevents a definitive conclusion, some remarks can be made.

First, the average costs per kilometre built for Sorocabana and Paulista were, respectively, 56 contos de réis and 74 contos de réis in 1878. Both traversed fairly similar topographic regions and Paulista was then one of the most profitable railway in Brazil (Summerhill, 1998). Notwithstanding differences in their gauges and perhaps in the qualities of the inputs they used,[3] that rough comparison does not support the view that the costs for building the Sorocabana were too exaggerated. If they were, therein would lie the reason for the insufficiency of new equity capital as well as for the absorption of interest guarantees into expenditures other than dividends, making investors even more reluctant to provide further capital.

Second, in comparison with Paulista and Mogiana, revenue per kilometre of line for Sorocabana was much lower, as shown in Table. Insofar as the superior operating performance

[2] In August 1875 part of the interest guarantee was spent on general expenditures rather than to pay dividends. In the following year, the interest guarantees were used to meet the debt service and to buy trains while dividend payments were postponed at the expectation that the railway was going to be sold to a foreign company, since shareholders were not willing to put additional money to finance the conclusion of the railway. The transaction ended up not being realised because of a squabble around the level of exchange rate to be adopted to calculate the interest guarantee the Province would have to provide (the guarantee was denominated in mil-réis). See Companhia Sorocabana (3/9/1876).

[3] The Sorocabana had a one-meter gauge while Paulista's was 1.60 meter.

of Paulista and Mogiana cannot be assigned to learning-by-doing gains arisen from a longer period of operation,[4] either the potential of freight was really limited around the region the Sorocabana served or there was some type of mismanagement. The first possibility is somewhat underpinned by the huge reduction in the cotton exported by the region while no other agricultural commodity could generate demand for railway services at a scale sufficiently large to improve the performance of the Sorocabana. Over the period 1876-1879, the Sorocabana transported on average 14,750 tonnes a year, whereas transport by the Mogiana and Paulista averaged, respectively, 32,732 and 87,229 tonnes a year. Coffee freight was immaterial for the Sorocabana, be it in total volume (averaging only 306 tonnes a year over the same period) or relatively to its total freight.[5] Differently, the Mogiana hauled on average 14,587 tonnes of coffee a year. Unlike Paulista and the Mogiana, the Sorocabana did not yet run regions where coffee crop was important. Therein might lie the investors' unwillingness to subscribe thoroughly the new capital shares offered by the Sorocabana, forcing it to resort to debt finance.

Table 2
Revenue (in contos de réis) per kilometre of line

ANO	PAULISTA	MOGIANA	SOROCABANA
1876	10:624$	4.609$	2:362$
1877	9:965$	4.798$	2.142$
1878	11:868$	4.155$	2.547$
1879	11:264$	4.646$	2.530$

Source: Saes (1974, p. 13; 66-68)

As regards managerial quality and integrity, it can be noted that the way funds were channelled into the Sorocabana might imply a number of agency problems. The first opposed outside shareholders' interest to management or controlling shareholders. Inasmuch as ownership appeared to be concentrated and composed by informed investors (bankers and capitalists), the scope for expropriating that class of investors seems to be small. Concerning creditors, it is highly probable that banks, contractors, and suppliers were endowed with information and power to supervise the company, contrasting with bondholders whose incentives to monitor were relatively weak, given the free-rider problem. Notwithstanding, as above-indicated, a bank, the New London Brazilian Bank, had been ascribed the task of looking after bondholders' interests. Finally, the governance coming from the Province of São Paulo upon the Sorocabana's managerial decisions appeared to be weak and vulnerable to conflicts of interest. Albeit the guarantees of interest were tantamount to a subsidised credit – since their repayments, if made, would be interest-free – provincial authorities supposedly controlled railways enjoying that kind of fiscal transfer by simply appointing a "fiscal engineer", who would have the duty of supervising their accounting, physical installations, safety procedures, and maintenance. The same fiscal engineer monitored the Paulista and the Mogiana while there was one exclusive fiscal engineer to supervised the Sorocabana, which moreover paid him. With the advent of the Republic, it was created the "*Inspetoria das Estradas de Ferro*",

[4] Paulista began to operate in 1872 and the Mogiana and the Sorocabana in 1875.
[5] Out of the total volume (in tonnes) transported by the Sorocabana over that period, cotton represented nearly seven per cent.

responsible for the same function.
Maylasky was dismissed by a shareholder assembly on May 15th 1880. Besides accusing Maylasky of illicit behaviour, including embezzlement, the new management, headed by Francisco de Paula Mayrink, blamed in its first report both the debt burden and the small flows of transport for the Sorocabana's financial distress.[6] Mayrink envisaged as the only way to boost the company its extension to areas where coffee production was expanding, like the region of Botucatú, (Companhia Sorocabana, 11-12-1882). Thus, the original plan of setting up a "cotton" railway was relinquished, hopes of recovery being shifted to coffee.
Mayrink's ascent also reflected a rearrangement in the Sorocabana's ownership composition. Whereas Maylasky's presidency represented the predominance of investors from São Paulo, mainly from commercial and financial sectors, Mayrink expressed the growing power over the company of investors from Rio de Janeiro – city to where the Sorocabana's headquarter was moved. Thus, at the end of 1881, aside from older investors from São Paulo (embracing merchants, bankers, and landowners like Maylasky, B. A. Gavião Peixoto e Nicolau Vergueiro), the Sorocabana's shareholders included Mayrink, the Banco Comercial do Rio de Janeiro and the Banco Industrial e Mercantil. In 1888, out of a total of 60,000 shares, Mayrink held 17,000 and the Banco Comercial do Rio de Janeiro owned 6,000. The third largest shareholder, B. A. Gavião Peixoto, held only 3,700 shares. It should be noted that when Mayrink became the Sorocabana's president he was director of the Banco Comercial do Rio de Janeiro.[7] Consequently, Mayrink had the virtual control over Sorocabana.
The large block of Sorocabana's shares in the hands of the Mayrink's group suggested that he was actually confident of its potential profitability. Outside investors however seemed to have a different view. In 1880, out of an authorised capital of 7,200 contos de réis, 4,718 contos de réis had been realised, whereas in 1888, already under Mayrink's management, despite the increase in the authorised capital to 12,000 contos de réis, the paid-in capital reached only 5,846 contos. The accomplishment of the Sorocabana's extension plan proposed by Mayrink required therefore additional borrowing. Indeed, the Sorocabana's length increased from 132 km in 1879 to 332 km in 1889, leading its debt to jump from 3,917 contos de réis in 1880 (of which 1,918 contos de réis as £50 gold-bonds) to 8,328 contos de réis in 1887 (of which 1,648 contos de réis in £50 gold-bonds). Nominal revenues also increased over that period, endorsing Mayrink's 1882 forecast over the potential for exploiting new, coffee-producing regions. On the other hand, net revenues were probably not enough to match the increasing debt servicing. Consider for the sake of the argument that the debt service was at a 7% average rate (interest plus fees). Given that the value of the debt in 1880 was 3,917 contos, it would entail 270 contos de réis worth of service; the same reasoning implies an estimate of 582 contos de réis for the debt service in 1887. Suppose still that these two estimates represented the average amount spent annually as debt service over, respectively, 1880-1884 and 1885-1889. The Sorocabana's reports allow us to calculate the net operating revenue:

Table 3

[6] According to the company's report of 11-12-1882), the debt load resulted from the gap, reckoned to be 3,262:916$, between the cost of building the railway to Ipanema, the main trunk (7,262:916$) and the paid-in capital. The low volume of freight in turn was attributed to the low level of output produced in the region served by the Sorocabana.
[7] The Banco Comercial do Rio de Janeiro was the oldest private bank of the Rio de Janeiro, and Mayrink's father was one of its largest shareholders. See Levy (1980).

Period	Average annual net operating revenue
1880-1884	45:791$
1885-1889	308:078$

Source: Saes (1974, p. 66-68; 159-161)

Consequently, on average terms, the amount paid as debt service far exceeded the net operating revenue over 1885-1889. Even in 1989, the year when net operating revenue peaked, reaching 579 contos de réis, average profits were negative.

In the 1890s, the Sorocabana's management made some decisions that worsened its financial accounts. Together with the macroeconomic shocks that battered the Brazilian economy throughout that decade, these decisions ushered in the process that culminated in the transfer of control over the Sorocabana to its main creditor. Firstly, the Sorocabana merged with the Estrada de Ferro Ituana in 1892 – a middle-sized railway company whose operation zone partly overlapped Sorocabana's, giving rise to the Companhia União Sorocabana e Ituana (CUSI). The merger was undertaken aiming at expanding their operation without harmful competition. The Ituana's financial accounts seemed then to be fairly good, notwithstanding its external liability (in the form of bonds), which was added to the Sorocabana's debt.

Also in 1992, the CUSI agreed with the State of São Paulo to renounce to the right of guarantees of interest – apparently because its management expected to increase operating revenues in the near future (CUSI, 18/3/1893). That agreement established in addition that the CUSI should reimburse its debt to the government of São Paulo, paying for the sake of amortisation 100 contos de réis a year (totalling 2,200 contos de réis). Hence, that financial burden added to those related to servicing the internal and external debt.

The third event that heightened even more the financial pressure on the new company was the contract with Banco Construtor do Brasil whereby the bank would be responsible for constructing new tracks, extensions and branches as well as for providing funding for these infrastructure works through tapping capital markets. Clashes marked the relationships between the bank and the CUSI, leading ultimately the latter to the breach of contract. The resolution of the litigation set down that CUSI owed to Banco Construtor an amount worth 17,600 contos de réis, that could be paid through bonds at six per cent a year. Curiously enough, among Mayrink's investment portfolio, there was a stake in Banco Construtor.

Finally, Brazilian currency underwent recurrent and large depreciation throughout the nineties,[8] affecting adversely the CUSI, notably its external debt service. Part of the debt denominated in pounds was contracted by the "seção Sorocabana", which in 1898 was comprised of 3,590 bonds (each worth £50), and the remainder was the liability brought by Ituana to the new merged company – 1,500 bonds, each worth £100. According to the company's management, the continued depreciation had caused "calamidade" (calamity) to its relationships abroad. A company's report asserted in 1898 that the London & Brazilian Bank, as the representative of holders of bonds denominated in pounds, had required the foreclosure on the mortgage – its rails – on the grounds that the interest and amortisation had not been paid back (CUSI, 2-5-1898:12-14). The CUSI's managers argued that the depreciation of the mil-réis made it impracticable to maintain the debt service. In fact, even though tariffs were tied to

[8] Two major views can be identified in the literature about the ultimate reason triggering the currency devaluation. One assigned it to the expansionary monetary policy undertaken by the first republican government. The other associates it with the halt in foreign capital inflows to peripheral countries the Baring crisis sparked off in 1890.

exchange rate movements, the "tarifa cambial", there was a cap of 12 pence/mil-réis on it (Pinto, 1903: 161-162).[9] Inasmuch as the exchange rate had already plummeted to 7 pence/mil-réis, freight revenues coupled with the burden of pound-denominated debt were hugely mismatched.

The table below shows the CUSI's financial accounts in 1896:

Table 4
The Companhia União Sorocabana e Ituana's financial accounts (1896)

Bond-related interests		2,926:270$000
Floating-debt interests (*)		394:000$000
Debt amortisation paid to the State of São Paulo (payments related to the Companhia Ituana and reimbursement of interest guarantee received)		220:000$000
Total financial expenditure		3,540:000$000
Net operating revenue	2,179:654$000	
Deficit		1,360:616$000

Source: CUSI (10-12-1897)
(*) Debt not funded on bonds

Exchange rate depreciation also hit Sorocabana by dint of higher input costs. As the CUSI's report of February 1897 underlined: "*In an unprecedented manner, exchange rate has been maintained at levels so low for a so long time that causes the ruin of the public and private fortune and our company has been one of the most charged since, compelled to import inputs and coal, it is obliged to pay for them almost the triple they could cost if the exchange rate were at a reasonable level*" (CUSI, 10/2/1897: 15).

In spite (or because) of the mountainous debt burden, another group of investors took over the company in the middle of the nineties. In 1892, out of 350,000 shares (of which 175,000 bearer shares), 33,550 belonged to Mayrink, 53,000 to João Pinto Ferreira Leite, and 50,000 to a syndicate the latter represented. At his first report as the company's president in 1897, Mr. Leite pointed out that Mayrink had been neglectful regarding the way he had dealt with the Banco Construtor, and that the breach of contract had damaged severely the railway. Nonetheless, the new board maintained the former strategy of expanding the lines in the hope of making the company profitable through enhancing freight revenues.[10] Indeed while the CUSI's lines totalled 340 km in length in 1890, the merger with Ituana resulted in an overall extension of 598 km in 1892, increased to 704 km in 1896 and to 893 two years later.

Despite the huge increase in the transport of coffee (that leapt from 16,000 tonnage in 1893 to 53,000 tonnage in 1899), the company failed to prevent from going into receivership. Again

[9] Introduced in 1892, the "tarifa cambial" laid down the exchange rate of 20 pence/mil-réis as the base on which tariffs would be adjusted. Every fall of one penny in the ratio pence/mil-réis, up to the limit of 12 pence/mil-réis, would entail a 5% increase in the tariffs contractually determined. For example, if the exchange rate fell to 16 pence/mil-réis, tariffs would be increased by 20%, but if the exchange rate dropped to 10 pence/mil-réis, the total rise would not exceed 40%.

[10] In this respect, the above-mentioned report revealed some optimism: "*The flow of revenue is stimulating, notwithstanding the strong reduction in the coffee harvest and other causes brought about by the irritating crisis affecting the whole economic relationships of the country. Had they not existed, revenue would be much more higher*".

the origin lay in the debt overhang: the net operating revenue unceasingly fell behind the amount paid as interest, fees, and commissions. The floating debt (debt owed to contractors and suppliers for financing the construction of the railway prolongation) demanded interest rates ranging from 1.5% to 5.0% a month. The progressive loss of creditworthiness in turn increased the guarantees required, which were partly met by Ferreira Leite himself and a bank to which he was linked – the Banco do Brasil e Norte América. In additon, Ferreira Leite had acquired bonds and shares issued by the company, what apparently suggests that he envisaged good perspectives for the CUSI.

The wave of lawsuits requiring the CUSI's liquidation led its control to be transferred to the National Treasury and to the Banco da República do Brasil (under government's surveillance) – respectively, its largest creditor and its largest shareholder. In February 1901, CUSI's president, João Pinto Ferreira Leite, was replaced by Francisco Casemiro Alberto da Costa, nominated by Joaquim Murtinho, then Minister of Finance. The appointee found a number of unorthodox practices on the company's accounting, estimating its total liability to nearly 117,000 contos de réis in 1901 (see Table 5). This was an overtly underestimate, since his calculations of the external debt were based at an exchange rate of 27 pence/mil-réis while its market value oscillated around 7.5 pence/mil-réis.

There was a foreign bid for CUSI of £1,750,000 – 56,000 contos de réis at the exchange rate of 7,5 pence/mil-réis. That amount was insufficient to cover even the debt funded on gold-bonds and paper-bonds (and the unpaid interests), not to say the remaining creditors and shareholders.

Table 5
Sorocabana: liability at the end of 1901

Gold-bonds	2,802:222$220
Paper-bonds (in circulation)	48,015:122$220
Paper-bonds (to be redeemed)	16,757:700$000
Gold-bond interest	1,671:864$410
Paper-bonds interest	48,360:798$000
Interest guarantee reimbursement to the Federal government	1,600:704$468
Interest guarantee reimbursement to the State of São Paulo	5,358:797$585
Banco do Brasil e Norte-América	2,425:850$980
João Pinto Ferreira Leite	2,426:710$100
Bills to be redeemed	21,298:320$000
Obligations to creditors from the Rio de Janeiro	5,528:625$652
Total	117,030:130$279

Source: CUSI (1901)

In light of these circumstances, the CUSI was liquidated. At an auction in 1904, the Treasury, its largest creditor, purchased it for 60,000 contos de réis. Shortly thereafter, on April 18th 1905, the company was sold to the State of São Paulo for £3,250,000 (nearly 65,000,000$000). It financed the purchase borrowing an amount of £3,800,000 from the Dresdner Bank. There is some evidence suggesting that the price it paid for the CUSI was not excessive.[11]

3. A state-owned enterprise run by a foreign holding company (1907-1919)

In 1906, the railway was rented as a by-product resulting from the Coffee Support Program promoted by the state government. The rents to be received from leasing the Sorocabana would be used as guarantees to the £2,000,000 loan needed to acquire the excess of coffee output. On 22nd May 1907, the Government of the State gave Percival Farquhar (from New York City) and Hector Legrû (from Paris) the right of exploiting the Estrada de Ferro Sorocabana on a lease contract. Both were represented on the occasion of the contract signature by Alexander Mackenzie, who was superintendent of the São Paulo and of the Rio de Janeiro Tramway, Light and Power Co Ltd. Farquhar himself had run the latter at its beginning.

The lease contract laid down several rights and duties to both parties, the most important of which were: 1) the lease included the Sorocabana's all lines and the rolling and fixed stock, as well as the exploitation of the navigation services over Piracicaba and Tietê rivers; 2) the government had not only to conclude the construction of the branches from Itapetininga to Itararé and from Cerqueira César to Salto Grande do Paranapanema, but also to provide them with the rolling stock; 3) the lessee was allowed to build new lines, which could be added to the lease contract, if wished, under the terms it had established; 4) the lease period was 60 years from July 1st 1907; 5) the lessee had to pay for the lease: 4.1) the debt service related to the borrowing from the Dresdner Bank; 4.2) annual interest payments at 6 per cent on the capital spent by the government on rail prolongation and other improvements; 4.3) 25% of the contractual net revenue (tantamount to the net operating revenue less the debt service to the Dresden Bank, the interest on Government's capital, and the interest on the lessee's capital acknowledged as such; 5) the lessee was authorised to issue gold-bonds at 6% interest rate a year in order to finance new investments in infrastructure (Primeiro Traslado de Escriptura de Arrendamento, 1907). Furthermore, the government consented the transfer of the right of lease to the Sorocabana Railway Company Ltd (SRCL), a public limited company founded in the United States by the two original lessees.

The lease might have ushered in a new phase for the company: free of its former debt overhang it could have become buoyant. Clodomiro Pereira da Silva, Professor at the Transport Engineering School and the railway inspector nominated by the government, foresaw that promising scenario in 1903, when the company had gone into forced liquidation:

"*For the company's current situation contributed its management's incompetence, notably the latter. Liquidation saved the railway from its annihilation. However, its economic conditions are excellent and its future will be of the most prosperity providing there is a good management. It is enough to look at its revenue exceeding 10,000 contos and the net balances above 4,000. In the respective zone's conditions the revenue can reach 12,000 contos, and yield, with a high quality service, balance of 5,000, but it is necessary sufficient rolling stock and capable management*" (Silva, 1903: 554).

Albeit Pereira da Silva was right with respect to the Sorocabana's growth of the revenue and the operating balance, his prediction about its buoyant future failed thoroughly. The government of São Paulo in 1919 had no alternative other than rescinding the lease contract.

[11] In 1902 a manager of the CUSI reported that a foreign company had offered £2,500,000 for it, while another source mentioned that the S.Paulo Railway had bid it for £3,500,000.

2.1 The Sorocabana Railway Company: operating revenue and transport flows

The period over which the Sorocabana was under foreign control was highly favourable for the coffee railways – at least up to the start of the First World War. According to the Companhia Mogiana's management:

"*The first year of the new century showed a record of traffic and profit until then. In that year, the dividend was 12% a year. The period so auspiciously started represents, from the economic viewpoint, the Mogiana's apogee. Indeed, for nearly thirteen years, the Company maintained a high level of return on its capital, at a chronometer's regularity*" (A Companhia Mogiana no seu 75º aniversário, p. 19).

How was the SRCL's performance in that period? It is worthwhile to begin comparing the total revenue of the three most important railway companies operating in São Paulo (bearing in mind that the SRCL started his operation only in 1907):

Table 6

Total revenue (contos de réis) and revenue per kilometre of line (contos de réis per km): Sorocanaba, Mogiana and Paulista

Year	Sorocabana		Mogiana		Paulista	
	TR	TR/km	TR	TR/km	TR	TR/km
1907	12,697	12.2	19,231	14.2	24,541	23.2
1908	12,320	10.8	18,244	13.4	22,219	21.0
1909	14,506	11.1	20,265	13.8	26,349	24.3
1910	13,785	10.5	17,907	12.0	22,330	19.3
1911	14,189	10.8	20,345	13.4	26,655	23.2
1912	16,486	12.6	24,146	15.0	30,149	26.2
1913	18,640	14.1	25,994	15.0	33,597	28.9
1914	15,749	11.0	21,883	12.1	25,625	22.1
1915	18,028	12.3	24,227	12.8	30,022	25.9
1916	19,136	12.3	23,229	12.3	31,330	25.4
1917	20,977	13.0	24,742	13.1	32,941	26.5
1918	21,954	13.6	22,289	11.8	30,581	24.6
1919	24,545	14.7	26,102	13.6	32,484	26.1

Source: Saes (1974: 66-68).

The SRCL's operating revenue per kilometre of line over the period 1907-1919 was slightly smaller than Mogiana's but almost half Paulista's. Since Mogiana was a profitable railway, these ratios do not indicate any major handicap for the SRCL that could lead it to failure.

Table 7 compares the same three companies as regards the volume of coffee transported (in thousands of tonnage) as well as the fraction of the overall revenue coffee freight represented. Differences were great. Despite the SRCL could be considered a coffee railway over the period 1907-1919, its coffee freight as a percentage of the total revenue was much smaller vis-à-vis Mogiana and Paulista. Coffee was responsible on average for 10% to 20 % of the transported tonnage while materials for construction ranged from 35 to 47% of the total.

Some authors contend that this composition of freight was the Sorocabana's Achilles' heel, what led it to persistent underperforming. Duncan (1932: 103), for example, asserts that "*part of the difference in freight receipts, however, may be ascribed to the change in the relative percentages of coffee hauled. The lower percentage of coffee naturally cause the average receipts per ton kilometer to go down*". Notwithstanding, the expenditure/receipts ratios for these three railways did not display significant disparity, at least up to 1917 (see Table 8).

Table 7
Volume of coffee hauled (thousands of tonnes) and percentage of coffee in the overall receipt of the Sorocanaba, Mogiana and Paulista

Year	Sorocabana		Mogiana		Paulista	
	VCH	C/OR	VCH	C/OR	VCH	C/OR
1907	107.6	41.2	325.3	50.3	527.1	60.3
1908	82.6	32.2	290.2	48.9	474.1	57.8
1909	112.1	36.8	371.1	53.0	629.7	61.0
1910	74.1	24.2	251.1	41.9	437.2	47.7
1911	70.9	22.2	276.4	40.8	489.7	46.2
1912	67.7	18.3	312.7	39.0	479.5	37.4
1913	92.7	21.6	334.1	36.3	532.9	39.5
1914	77.2	21.8	308.7	38.3	425.9	38.3
1915	109.1	26.5	414.0	44.9	601.0	48.2
1916	103.3	24.3	324.9	36.0	510.0	42.4
1917	90.0	19.9	340.6	35.9	526.3	41.6
1918	73.2	18.3	268.0	32.9	415.5	36.9
1919	39.2	6.8	171.8	20.2	235.4	20.1

Source: Saes (1974: 66-68).

Table 8
Traffic coefficient (expenditure/receipt ratio)

Year	Sorocabana	Mogiana	Paulista
1907	60.09	52.05	39.90
1908	56.25	54.35	44.57
1909	46.67	52.56	44.10
1910	49.14	62.31	45.02
1911	48.28	58.52	42.28
1912	52.06	54.98	44.70
1913	57.35	57.08	48.56
1914	58.60	67.81	50.36
1915	45.64	52.81	43.49
1916	53.55	56.59	47.38
1917	60.88	56.20	48.44
1918	70.79	65.48	57.53
1919	80.61	61.21	62.58

Source: Saes (1974: 186-188).

These figures, if accurate,[1] support the view that the company did not incur operating deficits and, besides, that its traffic coefficient (the operating costs/operating receipts ratio) was much the same as Mogiana's and smaller than, but not far from, Paulista's. Bearing in mind that Paulista was then one of the most profitable railway companies operating in Brazil (for Summerhill, the most profitable of all), it seems persuasive that the SRCL had no very serious problem at the operating level. The contract cancellation in 1919 relied therefore on other reasons.

2.2 The Sorocabana Railway Company's capital structure

The SRCL's capital structure was far more complex than an ordinary public limited liability company. The company was one of the many stakes of Brazil Railway Co. Ltd. (BRCL) – a holding Farquhar had incorporated in the United States in 1906. On top of various railway companies in the South of Brazil, the holding had acquired other transport enterprises and operated in the livestock and the railway building businesses. Farquhar also had organised the Companhia do Porto do Pará, which in turn had business interests in navigation through the Amazonas river and in the Madeira-Mamoré railway. That intricate web of businesses in Brazil suggested that Farquhar's intention when he rented the Sorocabana went far beyond the business itself, probably being part of a more ambitious business strategy.

As any other holding company, the BRCL had most of its assets concentrated on equity stakes in other companies. The BRCL's diversified portfolio was financed by dint of "capital-ações" (share-capital) and the so-called capital-obrigações, which were bonds yielding fixed interest and annual amortisation of the debt. Thus, capital-ações' dividends and capital-obrigações' interest and amortisation were expected to spring from dividends paid by the companies whose shares made up the BRCL's portfolio. Earnings also came from building the prolongation of railways belonging to companies wherein BRCL had stakes.

When BRCL attained a new railway's concession, that "asset" was ascribed a value (often the present value of its net future revenues) that needed not maintain any strict correspondence with the actual expenditures spent to get it. Converted into capital-ações, these were granted to the BRLC's founders, who could keep them or sell them on the market. It is noteworthy that although the BRLC was founded with a registered capital worth US$ 40 million, the actual capital realised by its founders was just US$ 900 – a procedure that was in accordance with Maine's corporate law, the state wherein the holding had been incorporated. As a French Plenipotentiary Minister on mission in Brazil, M. Wiener, pointed out in 1910:[13]

"*Or, la Brazil Railway Co. procedera dans l'espéce comme l'a fait en maintes circonstances la Light and Power dont elle est l'une des créations: le groupe Mackenzie, Corthell, Farquhar, etc, formera, avec un capital-actions insignifiant, réservé aux fondateurs, une société ayant son siége dans une ville quelconque des Etats-Unis. Cette société demandera alors six ou sept cent millions à notre épargne contre la délivrance d'obligations ne conférant à leurs porteurs nul droit d'intervention dans la diréction de l'affaire*" (France, Archives Nacionales, F-12, 9201).

Amaral (1915) also threw light on Farquhar's strategy on the BRCL:

[12] Gauld (1964, chapter XIV), Farquhar's biographer, claims that since 1913 Farquhar had been deliberately misinformed by the SRCL's manager in São Paulo, who tried to prevent Farquhar from stopping the capital inflow.

[13] Recurrent assessments of the BRLC's situation were made by French officials, inasmuch as a sheer bulk of its securities had been placed on the French capital market.

"*What the Revue Franco Bresillienne reports us about the Brazil Railway Company gives a good idea of the modern processes undertaken by the Farquhar Syndicate. That company, which today monopolises a huge network of railways in Brazil, raised 420 million French francs in France in just four years and half – 181 millions of which were channelled into its founders as 'special payments' to which they were entitled, according they themselves say*".
Other sources report the SRCL's actions aiming at watering capital.
Turn on to the capital structure of the SRCL and its links with the Brazil Railway Company. In 1915 the SRCL had the following capital structure:

20,000 preference shares: overall realised capital	US$500,000
80,000 ordinary shares: overall value	US$8,000,000
1st mortgage bonds (1910): interest rate at 4.5 %	£4,000,000
2nd mortgage bonds (1911): interest rate at 5%	£660,000

To pay the dividends to the shareholders and to service the debt to the bondholders, SRCL depended not only on its net receipts (deducted the rents paid to the lessor – the state government) but also on the earnings stemming from its portfolio of shares and bonds of other companies. Predominant among those stakes were:[14]

20,087 shares of the Companhia Paulista de Estradas de Ferro;
50,000 shares of the Companhia dos Grandes Hotéis de São Paulo (Guarujá);
£287,500 worth of the 1st mortgage bonds issued by the Brazil Land, Cattle and Packing Co;
16,132 preference and ordinary shares of FF 500 of the Cie. du Port de Rio de Janeiro;
11,220 preference shares of the Cie Auxiliaire de Chemins de Fer du Brésil;
14,000 shares of the Cie de Chemins de Fer du Sud Ouest Brésilien.

The BRCL also had stakes in some of these companies. In 1910 its asset portfolio embraced the following investments:[15]

20,000 preference shares of the Sorocabana Railway ;
79,800 ordinary shares of the Sorocabana Railway;
£175,000 worth of claims on the Sorocabana Railway;
55,000 shares of the Cia Paulista de Estradas de Ferro;
24,000 preference and ordinary shares of the Cie Auxiliaire de Chemins de Fer;
36,000 ordinary shares of the Cie Chemins de Fer Sud Ouest Brésilien;
42,700 ordinary shares of the Estrada de Ferro São Paulo – Rio Grande;
48,750 ordinary shares of the Estrada de Ferro Madeira-Mamoré;
2,500 preference shares of the Estrada de Ferro Madeira-Mamoré;
The whole capital of the Brazil Lumber Co.

Returns on these assets were the sources from which the BRCL's capital-obrigações as well as capital-ações should have to be remunerated. In 1913 that liability comprised the following items:

Ordinary shares	US$32,000,000
Preference shares	US$20,000,000
Claims yielding 4.5%	£9,475,000

[14] See France, Archives Nationales – Serie 65 AQ – E 676.
[15] See France – Ministére des Affaires Etrangéres – Correspondence Politique et Commerciale – Vol.29- p.46-48.

Claims yielding 4.5%	FF86,500,000
Claims yielding 5%	US$1,510,500
Convertible bonds yielding 5%	£2,000,000
Overall capital (FF)	FF653,000,000

Of that total, 31% were securities placed in the French capital market, 52% in England, 16% in Belgium, and 1% in other countries (France-Ministère des Affaires Etrangères – Correspondence Politique et Commerciale – 1897-1918 – Volume 30 – Carton 150).

Even though the dates for which information about assets and liability for both the SRCL and the BRCL is available are distinct, that set of information testifies the BRCL's overarching interests and helps to make it clear how SRCL was linked to that holding. The SRCL' stock capital belonged almost altogether to the BRCL. Thus, the SRCL' dividends – corresponding to the net operating receipt less the leasing contract's overall burden – were part of the BRCL's receipts, a fraction of which in turn was needed to meet its obligations related to the bonds and shares it had issued. However, the holding's scheme was complicated because of the cross-shareholdings among its various affiliates. SRCL, for example, had issued liability to acquire equity stakes in other companies wherein BRCL also held investment– such as Paulista, Auxiliaire, and Sud-Ouest Brésilien.

Table 9

The Sorocabana's receipts net of the cost of the leasing

Year	(A): Operat. receipt (A)	(B): Oper. expenditure	(C) = Op. balance = (B) - (A)	Charge to DB (£) (*)	(D): Charge to DB (mil-réis) (*)	(E):Net income= 3/4(C-D)(**)
1906				228000	3218824	
1907	12696599	7629310	5067289	228000	3576471	1118114
1908	12319958	6930095	5389863	228000	3609499	1335273
1909	14506106	6769454	7736652	228000	3619048	3088203
1910	13784962	6773695	7011267	336000	5071698	1454677
1911	14938527	6850629	8087898	330600	4928199	2369774
1912	16485729	8582914	7902815	325200	4838686	2298097
1913	18639883	10689279	7950604	319800	4749505	2400824
1914	15748727	9228887	6519840	314400	4736723	1337338
1915	18027576	8228140	9799436	309000	5555056	3183285
1916	19135671	10247253	8888418	303600	6031788	2142473
1917	20976708	12770338	8206370	298200	5644264	1921580
1918	21953562	15540170	6413392	292800	5405538	755891

(*) Expenditures on servicing the debt to the Dresdner Bank

(**) Income net of the debt service to the Dresdner Bank and of the payment to the state of São Paulo (25% over the difference between the operating balance and the debt service to the Dresdner Bank)

Although the SRCL's receipts net of the cost of the leasing can be estimated[16] – and Table 9 shows that they were significant over the period 1907-1917 – it is very difficult to reckon both the returns on its portfolio of securities and the burden associated to service its liability. Be that as it may, the sustainability of the highly leveraged scheme of expansion underlying the SRCL and the BRC hinged on their rates of return, which should exceed the interest rate, and the continuous availability of outside finance. Given the concentration of their investments on railways, the benefits coming from diversification were paltry.

[16] The estimate is calculated subtracting from the SRCL's net operating receipt the debt service paid to the

That arrangement unravelled with the First World War, which brought to bear intense pressure on the SRCL and the BRCL. The collapse in the international trade as well as in the international capital flows led to a devaluation of the mil-réis and forced the Brazilian government to default on their external debt. In 1915, the SRCL just met the service of its 1st mortgage debt, failing to pay dividends and the services of both the other mortgages and the floating debts. In other words, its operating balance added to the earnings coming from some of its stakes in other companies were insufficient to cover its debt obligations as well as the dividends for its shareholders (that is, for BRCL's shareholders). Failing to pay dividends, the SRCL aggravated the BRCL's financial situation, then already strongly hit by the bad performance of other companies under its control. No wonder that the BRCL went into receivership, a process whose solution, its disintegration, came out only in the 1930s.[17]

The SRCL's dire financial straits affected dramatically the company's operations: the maintenance of the machinery, tracks and general infrastructure became increasingly poorer, giving rise to a high number of accidents in its lines (unlike Mogiana, which had almost none). Further evidence on the worsened quality of the SRCL's services was the low replacement rate of rails and crossties vis-à-vis what would be technically recommended (Duncan, 1932). The awful conditions to which SRCL had been left were clearly portrayed by C. de Paula Souza, the Sorocabana's General Inspector nominated by the Government of São Paulo after the friendly abrogation of the lease contract (agreed on September 9th 1919):

"*The conditions of the Estrada de Ferro Sorocabana in August 1919, when it became to be run by the State, were as follows: warehouses replete with goods awaiting transport; houses close to the stations overloaded with staples to be dispatched; frequent interruptions owing to the bad state of the locomotives; trains halted for a long time at stations because of lack of water; a large number of vehicles put aside for not being in conditions of use; buildings without maintenance; the bed on which the railway track laid missing the requisite safety; bad and deficient distribution of water tank. The Sorocabana Railway's managerial neglect had gone so far that, besides the large number of vehicles awaiting to be repaired at the workshops' neighbourhood, there was a large quantity of iron pieces and parts, which helped to set up two locomotives and sixty wagons*" (Companhia Sorocabana, 1920, p. 3-4).

Notwithstanding some rhetorical excess, this description is in accordance with other contemporaneous reports concerning the carelessness of the lines and the fixed and rolling stock, jeopardising the railway's own capacity of transport. The SRCL's desperate financial situation coupled with the absence of effective lessor's monitoring gave ample room and incentives for managerial moral hazard.

Dresdner Bank and the amount of 25% over that receipt paid to the government of the State of São Paulo.

[17] Duncan (1932: 76) traces back the BRCL' distress to an earlier period. As he put it, "*In 1914 the Brazil Railway Company, a holding and operating company which held all the capital stock of the Sorocabana Railway Company, went into the hands of a receiver. The company was chartered in Maine in 1906 and paid its first dividend on its preferred share in 1910. This shows that it had been in difficulties prior to the World War*". Nonetheless, according to a report made by the Ministère des Affaires Etrangères (1914, vol. 32, p. 115), the BRCL's financial situation had been of increasing progress over the period 1909-1913, net receipts leaping from FF 2.3 million in 1909 to FF 9.5 million in 1912.

A question that remains to be unravelled is the motivation behind the wide and somewhat intertwined portfolios held by SRCL and BRC. Would it ultimately be the building up of a complex network of transport in Brazil (maybe in South America) with a view to exploiting monopolistic rents?[18] That strategy could be reached by the greater capacity of the SRCL and BRCL to tap international capital markets vis-à-vis those companies wherein they SRCL themselves invested. In this respect, one conceivable interpretation of the fact that SRCL continued to service its 1st mortgage debt even after the start of the World War is that it wished maintain creditworthiness in order to raise new debts. Their broad (and to some extent overlapping) portfolios could also be a mechanism to expropriate uninformed European savers whose fascination then to the thriving international capital markets rendered them willing to part with their money to promoters of any projects in distant and exotic regions. In this respect, any new undertaking could proportionate high gains for their founders (Farquhar and his associates) inasmuch as they could thereafter sell it for a value several times the costs they had effectively run. However these hypotheses' plausibility, available evidence precludes an accurate appraisal of them, calling for further investigation.

Concluding remarks

As regards the question raised at the beginning of this paper – namely, *why was the Sorocabana, unlike Mogiana and Paulista, in dire financial straits almost throughout the period 1872-1919?* – our main findings can be summarised as follows. First, there always prevailed highly optimistic expectations with respect to the Sorocabana's prospects, not least because the "coffee railways" (Paulista and Mogiana) signalled that the railway business might be very profitable. Nevertheless, failing to convince other investors to provide the amount of equity capital needed to undertake their ambitious project, the Sorocabana's keen founders began to rely on debt finance. However, operating balances did not keep pace with the growing extension of the lines and the soaring costs of debt service, deepening the reliance on borrowings and leading to a debt overhang. Thus, it is unequivocally a telling fact to understand the recurrent failures the Sorocabana underwent that it was overburdened with debt during the whole period under analysis.

[18] BRC controlled railways in Uruguay and Bolivia, besides those in Southern Brazil. It is worth noting that the Banque de Paris et de Pays Bas, then under Farquar's control, owned a 25% stake in Mogiana in 1911 (its largest shareholder) and 11.25% of Paulista's overall capital shares in 1909. At a general meeting of Mogiana's shareholders on 28/6/1911, one same proxy, Paulo Bozzano, was there on behalf of the Banque de Paris et de Pays Bas, the BRCL, the Sudameris, the Caisse Generale, and the Banque de Reports et de Dêpots.

As for the explanatory power of bad governance, the lack of mechanisms that could contribute to alleviate the selection and incentive problems evidently provided ample room for managerial inefficiencies or outright investors' expropriation. The institutional environment was highly biased in favour of managers and controlling shareholders: very low or no legal protection for non-controlling shareholders and bondholders, trifling disclosure requirements of companies' financial information, unreliable enforcement of contracts and so forth. Monitoring by those supplying finance or guarantees or by the lessor appeared to be poor, if any. Conceivably, the obscure balance sheets (assets and liability) of both the SRCL and the BRCL gave huge latitude for managerial moral hazard at the expense of bondholders and shareholders, notably those residing in distant countries. Surely, opportunistic behaviour prevailed regarding the maintenance of the railway once BRCL was under receivership after 1915. Notwithstanding, no clear-cut evidence to endorse the mismanagement view as the cause of the Sorocabana' dismal performance for the whole period is available. As Duncan (p. 64) puts it for the period prior to 1902: "*there is no sufficient evidence on which to decide whether the management of the Companhia União Sorocabana e Ituana was inefficient*".

Finally, the Sorocabana's difficulties could have sprang from bad governmental policies or still from unforeseeable external shocks – such as sudden stop of foreign capital inflows, changes in the terms of trade, wars, and so on. Although this paper has not centred on these issues, it seems unquestionable that undertaking business in peripheral countries was much riskier, since these countries were highly prone to macroeconomic turmoil. In this respect, devaluation placed further financial burden to the Sorocabana inasmuch as there was a currency mismatch between its receipts (in mil-réis) – occasionally imperfectly indexed to exchange rate movements – and its liability.[19]

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[19] The controversy on the roots of the devaluation in the 1890s might also be regarded as bad policy (excessively loose monetary policy) versus bad luck (the "contagion effect" produced by Argentina's default.

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