The establishment of railways in the Nineteenth Century Brazil and the Rothschilds' Financial Imperialism

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Abstract

This paper investigates changes taking place in institutions in Brazil in the last decades of the Empire designed to attract private investments for the railway sector. These changes, a response to demands from Government and society, opened space for investment partnerships between private and public sectors. The paper also analyses the adverse effects of such initiatives over the Government's finances. The concession of subsidies to railways is seen as partially responsible for the increasing dependence of the Brazilian Government on foreign capital and specially on capital provided by the British bank, N.M.Rothschild & Sons.

Sumário

Este trabalho investiga mudanças institucionais ocorridas no Brasil nas últimas décadas do Império que tiveram como objetivo atrair investimentos para as ferrovias.Tais mudanças, responderam a demandas do Governo e da sociedade e fizeram,do investimento em ferrovias, uma parceria entre o setor público e privado. O trabalho analisa os efeitos adversos , a curto prazo, de tais mudanças institucionais sobre as finanças do Governo. A concessão de subsídios às ferrovias é vista como parcialmente responsável pela crescente dependência do Governo Brasileiro em relação ao capital externo e, em especial, ao capital de uma casa bancária britânica, N.M. Rothschild &Sons.

Introduction.

The general purpose of this paper is to emphasize the need of economic historians to take into account the importance played by institutions in shaping the evolution of the

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Brazilian economy. A disregard for institutional variables may lead to erroneous interpretations of the factors responsible for the course of development observed in a given period. By institutions, this paper considers "the rules of the game in a society" that "structure incentives in human exchange, whether political, social or economic" and shape the path followed by an economy over time, according to definitions offered by North Douglass.[2] Considering that institutional framework signals economic opportunities to entrepreneurs and that changes in this framework over time are endogenous and incremental, the understanding of an observed pattern of growth in a certain period requires such changes, as well as their origins, to be identified.

The specific purpose of this paper, however, is much less presumptuous. In the context of the institutional view of history and using the model offered by North as reference, this paper deals with the establishment of the first railways in Brazil as the outcome of incentives given to their establishment by endogenous and incremental transformations in institutions. Considering the characteristics of the services produced by railways, such changes in institutions favoured increasing returns and shaped the future paths of development. In this context, the paper points out one of the peculiarities of the development to follow: the dependence on foreign capital, or more specifically, on capital provided by one British Bank, N.M Rothschild & Sons. Such dependence that started in the early days of the Empire should not be disregarded, for instance, by economic historians interested in the study of economic policies elaborated and enforced before the First World War.

The first three sections of the paper describe the changes in legal institutions related to the establishment of railways that took place in the Empire and summarize the main changes in institutions introduced in contracts made between Government and some private companies. Such description is expected to make clear that the institutional changes introduced in the second half of the Nineteenth Century with the purpose to stimulate investments on railways should not be seen exclusively as a by-product of exporters' interests. The Central as well as the Provincial Governments were also interested in improving the system of transport in Brazil. Also interested in such a development were the British banks in search of new profitable opportunities on which to invest European savings. As far as the Brazilian Government was concerned, the establishment of a more efficient transport network in such a large country as Brazil was

[2] Douglass North, *Instituions, Instituional Change and Economic Performance*, Cambridge USA, 1990, p.3

a necessary condition for the political and financial administration of public services as well as for the sovereignty of the Central Government.[3]The fourth section investigates the adverse effects of this police of incentives to railways on Government finances. It examines particularly the responsibility of such policies in increasing the foreign and internal Brazilian Government indebtedness that would lead to the Funding Loan of 1898, making room for an interference of the Rothschild bankers in Brazilian internal affairs.

1. Partnership between Government and private sector

Brief summaries on the evolution of the railway legislation in the Nineteenth Century are found in the literature. Most of such summaries, however, restrict themselves to describing the inclusion of government obligations to guarantee minimum interest rates: the guarantee of an interest rate of 5% introduced by the Decree N^{o} 641, June 26, 1852, and of 7% by the Decree No 2451, September 24, 1873[4]. Authorizations given to the Central Government to grant other privileges -as for instance the exemption of import tariffs over machines and materials necessary to the construction and operation of the railroads- have been overlooked. Also have been overlooked, authorizations given to the Government to interfere in rate freights and in the establishment of conditions of repayment of interests. Moreover, the advantages to be conceded to the Government by the companies have not deserved any attention, obscuring the characteristics of partnership between private and public sectors in the railway sector. This bias in the literature may be explained by the fact that such reciprocal obligations were not included in general laws and decrees related to railway construction but on specific conditions enclosed to the legal authorizations given for the constitution of railway joint stock companies.

These obligations were not the same for all companies. Therefore, a complete investigation on the characteristics of this partnership would require an examination of the clauses of each individual contract. In fact, an analysis on conditions imposed to some companies by the Government shows that they were forced to render free or

[3] This point is emphasized in: Carlos Marichal and Steven Topik, "O Estado e o crescimento econômico na América Latina: Brasil e México, 1880-1920", *História Econômica e História das Empresas*, vol VI, (1) , 2003.p. 8

[4] Even if the additonal 2% was given by Provincial Laws, the Central Government was to warrant its payment

subsided services of transport to satisfy some needs of the Public Administration, such as the transport of public values, of civil servants on duty, of immigrants and prisoners. Most of all, the companies had to agree to dispose all the cars to the Government whenever they were required by the Army.

2. Evolution of joint stock company and railroad legislation in Brazil

Given the great amount of capital required to construct railways, it is quite reasonable to expect that the great majority of railway enterprises would have to be constituted as joint stock companies. Therefore, the legislation on joint stock companies, as well as that directly connected with railways, has to be examined.

Before 1849, the constitution of any joint stock company depended upon government initiative and was enforced through specific legislation. In 1849, the constitution of joint stock companies was, for the first time, regulated by law and its organization had to be authorized by the Central Government.[5]The Commercial Law of 1850 maintained the government's authorization as a necessary condition for the constitution of any joint stock company.[6] In 1860, a decree specified the criteria that should be used to decide whether an application for the constitution of a joint stock company should be approved.[7]. This legislation was enforced until a new law was passed on November 2, 1882, which dispensed with government approval with few exceptions. Among such exceptions, were the foreign joint stock companies, which remained subject to official approval[8]. However, the decree which regulated this law, even though it maintained foreign joint stock companies subject to government approval, exempted from this obligation those joint stock companies which had as their purposes the construction of railroads.[9] Such exemption reveals the awareness of the government that foreign investments in this sector were needed and should be forwarded.

The first piece of legislation enacted by the Brazilian Government related exclusively to railways was Decree N.101, of October 31, 1835, which authorized the Government to concede privileges to companies that built railways from the city of Rio

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[5] Decree number 575, January 10,1849, article 1

[6] Law number 556, June 25,1850, known as Código Comercial do Império do Brasil (Commercial Code of the Brazilian Empire).

[7] Decree number 2711 , December 19,1860 which regulated Law number 1083 of August 22, 1860

[8] Law number 3.150, November 4,1882. The joint companies to remain subject to the Government authorization were discriminated in the paragraphs 1 and 2 of the article 1.Decree No 8,821, December 30, 1882 which regulated Law No. 3,450 November, 30, 1882.

[9] Those would be allowed to work by concession from competent authorities according the stipulations of the decree n. 5561, February , 28, 1871.

de Janeiro to Minas Gerais, Rio Grande do Sul and Bahia. The privileges to be conceded did not include any interest rate guarantee. This decree could hardly be expected to attract private capital to investments in railways. The poor economic performance of the export sector in the first decades of the century did not seem to justify the establishment of railroads.[10] By 1835, gold production in the Province of Minas Gerais was in decadence and the cultivation of coffee was still mainly restricted to the regions of the valley of the Paraíba river in the borders of Minas with the Province of Rio de Janeiro. Even though sugar was still the main export product, its production was located in the Northeast regions, from where it was exported. The routes defined in the decree suggest that the government's purpose was mainly the maintenance of the sovereignty over the territory. In fact, the south region of the country (Province of Rio Grande do Sul) had been the stage of constant military disturbances since the first days of the Empire. It is at least suggestive that decree N°101 was enacted just after the revolution in Rio Grande do Sul between republicans and monarchists, known as Guerra dos Farrapos, had broken out.

Decree N° 641 of June 26, 1852 modified the previous Decree of 1835 and introduced new dispositions. By its first article, Government was authorized to give concessions to companies to build, partially or totally, a railway from the city of Rio de Janeiro to the Provinces of São Paulo and Minas Gerais and not to Rio Grande do Sul Bahia and Minas Gerais as had been established in the previous decree of 1835. Contrary to the previous decree, which fixed the maximum price to be charged by all companies, the 1852 Decree established that prices would be fixed by the Government in accordance with the company and should not surpass the prevailing costs of transport.[11]However, the most important innovation to the legislation was introduced by paragraph 6th of article 1:"The Government will guarantee to the company an interest rate up to 5% on the capital employed in the construction of the railway, and will decide how and when such interests would be paid." The following paragraph established that the company should started repaying the interests received after reaching dividends of 8 % and that that a ceiling rate of dividends should be established in accordance with the company above which the freight rates charged should be reduced. Even though the first article of the decree authorized the Government to allow the construction of railroads

[10] In fact from 1821 to 1835, a period of fifteen years, the Balance of Trade presented insignificant superavits only in three years. Instituto Brasileiro de Geografia e Estatística, Repertório Estatístico do Brasil, Quadros Retrospectivos, N° 1 (Rio de Janeiro, 1941) p.68

from the city of Rio de Janeiro to Minas Gerais and São Paulo, article two extended the possibility of concession of such subsidies to railroads anywhere in the Empire. In such cases, however, the contracts should be submitted to Congress.

The alteration in the destinations of the routes to receive official privileges suggests a change on demands from the government and society derived from a better performance of the export sector in the second half of the century. Revenues from exports had doubled from 1833-1834 to 1850-1851 and, since 1830, the percentage of exports earnings derived from coffee were the highest.[12]By 1852, coffee was being cultivated in the provinces of Rio de Janeiro, Minas Gerais and São Paulo. This change does not allow the conclusion that the legislation intention was exclusively to attend coffee growers' interests. On one hand, the expansion of coffee plantations brought about a general increase on Government and private demand for transports in those coffee regions, which had to be attended. On the other hand, coffee growing activities, as well as the expansion of other economic activities directly or indirectly induced by coffee, increased the potentiality of some areas of the provinces of Minas Gerais, São Paulo and Rio as sources of income for the government. Consequently, the development of railways in export regions would allow government to keep its authority on the most promising regions of the country, as well as to assure the collection of taxes.

Decree No. 2450 September 24, 1873 introduced some modification on the previous Law of 1852. By this decree, the Government was authorized to grant a maximum interest rate of 7% over the capital employed, even though the total amount of capital subject to guarantee rates should not exceed one hundred thousand contos. Government was also only authorized to grant such guarantees to railways that were to serve as the main mean of transport between producer and export centres and only to one company in each province. Moreover, the Government should underwrite the guarantees conceded by Provincial authorities. Decree No 6995, August 10, 1878 specified in detail the conditions for the concessions of railways with guaranteed interested rates. As to the amount of capital to receive interest rate guarantees, it would be restricted to the fixed capital recognized by government as necessary for the establishment of the railroads.

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[11] Ibid. paragraph 5th

[12] Data on exports and imports in : IBGE, *Estatísticas Históricas.*

3. The emergence and expansion of railroads in the Nineteenth Century Brazil

The first railway to be opened to traffic in Brazil had its establishment authorized by a concession from the Province of Rio de Janeiro a few months before Decree No 641of June 26, 1852 was promulgated. After the 1852 Decree allowed the Central Government to assure interest rates guarantees up to 5%, and before the decree of 1873 increased such guarantees to 7%, eighteen companies were authorized to be constituted to establish new railways: thirteen under the guarantee system and five without guarantees. Even though Decree No 641 allowed Central government to guarantee dividends of 5%, in most cases Provincial Laws in fact increased such guarantees to 7% through an additional rate of 2 percent. Therefore, the increase on guarantee rates authorized by the 1873 decree only transferred the burden of the 2 per cent additional guarantee expenses from the Provinces to the Central administration.

The extension of railways opened to traffic increased from 15 km in 1854 to 9,973 km in the last year of the Empire, 1889. During the first decade of the Republic, it increased to 14,916 km.[13] It cannot be denied that the incentives policy implemented by the Imperial Government succeeded in creating a transport system which benefited the export sector, as well as production for the domestic market, and therefore had a significant role in the economic growth of the country. Besides, as a partnership between private enterprises and public sector, it certainly brought about important advantages to the public sector as communication between the Central government and Provincial authorities was made easier. On the other hand, one has to bear in mind that such policies increased public expenses significantly and were in part responsible for a huge foreign debt to be faced by the Republican Government.

4. Adverse effects of the Brazilian policy of incentives to railways on government financial administration.

Considering the general decrease in production costs brought about by railways it is certainly reasonable to expect that an increase in total output would have followed their establishment. In fact, not only an increase in output, but a large spectrum of political, social and economic consequences derived directly and indirectly from this improvement should be expected. Many of such consequences have been investigated

[13] IBGE, *Estatísticas Históricas do Brasil*, p. 411.

by Summerhill.[14] This paper, however, deals with one only of these effects, which has not yet been properly investigated: the impact of expenses with the guarantee of interest rates to railway companies on Central Government expenses and on Brazilian foreign and internal debt in the last decades of the XIX Century.

In fact, remittances of foreign currency had to be made by Brazilian Government in order to pay the guaranteed dividends to foreign shareholders. Foreign currency was bought in national currency at its market price. Considering deficits already presented by the Central Government Accounts before the sixties one should expect the payment of guaranteed interest rates to railways to become an additional burden to an already difficult financial situation. In fact, even if in the long run the public revenues were expected to grow as a result of the establishment of railways, payments of interest rates had to be made in the short run.

Difficulties in raising additional funds to cover recurrent deficits through the issue of internal public bonds and political restrictions to large issues of paper money forced the Government to resort to new foreign loans. Expenses associated to such debts as well as to guarantee interest rates to foreign capital implied increasing demand for foreign exchange and consequent adverse effects on the external value of the local currency. Devaluation of the exchange rate increased expenses in local currency with the payment of external debts, intensifying Central Administration's financial problems.

Law No 912, August 26, 1857 authorized the Government to contract loans for the following railway companies: Estrada de Ferro D. Pedro II, Estrada de Ferro de Recife a São Francisco(Recife and São Francisco Railway Company). The first foreign loan was contracted to finance part of the Brazilian Government expenses in the process of taking over the Railway Company D. Pedro II which had been initially owned by private Brazilian investors under guarantees. The contract for a loan of £1,526,500 with N.M. Rothschild's & Sons was signed on May 19, 1858. Other foreign loans were raised by the Brazilian Government with N.M. Rothschild & Sons with the specific purpose of attending the financial needs of construction and extension of railways as well as the payment of guaranteed interest rates. The foreign loans contracted with the

[14] William R.Summerhill, *Order Against Progress*: *Government, Foreign Investment, and Railroads in Brazil, 1854*-1913, Stanford, California, 2003 and W.R. Summerhill, "Market Intervention in a Backward Economy: Railway Subsidy in Brazil, 1854-1913, *The Economic History Review*, New Series, Vol 51, No 3 (Aug,, 1998), 542-568.

explicit purpose of attending railways before 1898 are presented in the Appendix,Table 1.

The increasing foreign indebtedness of the Brazilian Government in the second half of the Nineteenth Century certainly may not be explained exclusively by the foreign loans asked to attend directly the railway sector. Old debts inherited from pre-railways era were still being paid. Besides, new loans were asked with the purpose of repaying old debts and covering the deficits in National Accounts' Balance. Even though public expenditures certainly contributed to the increase of such deficits, one has to take into account that, in the future, better means of transportation would allow for an increase on production and consequently on the collection of taxes.

The share of the expenses incurred by the government with the payment of interest rate guarantees in relation to its total expenditure increased significantly during the second half of the nineteenth century, as shown by data on Table 3. If, in the 1860's this share was only 1,7%, in the first Republican decade, 1890-1899, it reached 7,4%. Even though guarantee interest rates were paid also to Brazilian companies, the percentage paid to foreign companies was substantially greater as shown by data on Table 2. From 1855-1856 to 1860-1861 all the interest rates guarantees to railways were paid to Brazilian companies. In 1861-1862 interest rates guarantees started being paid to British companies. From 1867-1868 to 1873-1874 there is no record of any interest guarantee rates being paid to railways in Brazil. In 1874-1875, remittances to London accounted for 82.6% of all interest guarantee payments. This percentage decreased to an average of 68.4% in the second half of the seventies and started increasing significantly in the eighties. [15]

That the concession of guaranteed interest rates to railways had a significant impact on Brazilian external debt is shown by data on table 4. In the 1880s, the average annual expenses with guaranteed interest rates was responsible for 40% of the annual

[15] Sources: *Balanço da Receita e Despesa do Império* (various years) and *Balanço da União* (various years) Data for expenses with railway guarantee rates are given in the national balances of revenues and expendi tures published yearly by the Imperial and Republic governments. It is important however to observe that the values given in those balance for expenses in sterling were calculated according to the legal exchange rate between sterling and the mil-réis. As such expenses were in fact made in mil-réis bought at their market value, there was an item in the Balances that accounted for differences between the official and market rates. In order to obtain the expenses made in Brazilian currency, the values for guarantees paid in sterling were transformed in mil-réis values according to the market values of the sterling. The legal parity of 27 pennies for one mil-réis was fixed by Law No 401, September 11, 1846. The annual averages of the sterling value in mil-réis in the exchange rate market of Rio de Janeiro were used for such conversion. IBGE, *Estatísticas Históricas*.

average of total expenses in foreign currency. In the following decade, such percentage increased to 64%. The burden of the expenses with debts in foreign currency created difficulties for the financial administration of the country. Expenses increased with the devaluation of the exchange rate. In spite of the legal parity fixed by law, foreign exchanges had to be bought according the rates prevailing in the market. In the First Republican decade, the external value of mil- réis decreased significantly. The value of one mil-réis in pennies, which was 26,44 and thus quite close to the legal parity of 27 in 1888, started decreasing. In 1898, it reached its lowest value, 7.19 pennies.

As shown by data presented on tables 1, 2 and 4 the establishment of the railways in the nineteenth century in Brazil increased the debt of the Brazilian Government in relation to London and more specifically in relation to one British firm, the N.M. Rothschild & Sons. In fact, Rothschild & Sons was the greatest provider of foreign funds to Brazil in the last decades of the Empire.

Conclusions

Changes in institutions related to investment in railways were incrementally introduced in the last decades of the Empire. They did not result from outside imposition but respond to demands from the Central Administration and private producers. Considering the services produced by railways such changes certainly favoured increasing returns. These changes in institutions introduced by the Empire Government shaped the path of Brazilian economic development in the following periods. In fact the establishment of railways, cutting down production costs, increased the competitiveness of Brazilian exports reinforcing the path of development towards commodity exports. However, this reduction of transport costs also favoured the growth of the incipient domestic industry by enlarging their markets. As to the industrialization is concerned it is important to notice that inasmuch as the changes in institutions were mainly devised to attend the coffee areas, they were in part responsible for the emergence of inequalities to be observed in the different regions of the country from then on.

On the other hand the adverse effects of the policy of incentives to railways on public finances should not be overlooked. In the short run, the payment of guaranteed interest rates increased the expenses of the Central administration without providing a compensatory increase of revenues. Thus, the introduction of the guarantee interest rates

to railways was in part responsible for the financial difficulties faced by the Republic in its first decade as well as for the recessive monetary policies enforced in the Twentieth Century before the First World War. In fact, one may not ignore the influence of the Rothschilds in the elaboration of the policies enforced in this period. This influence of the Rothschils over the Brazilian internal affairs was certainly based upon the role played by the London firm N.M.Rothschild & Sons in financing the policies enforced by the Imperial Government .

Appendix

Table 1

Foreign loans contracted to attend railways in Brazil in the XIX Century

Year	Issuing Bank	Nominal Amount	Interest Rate	Destination
May 19 1858	Rothschild & Sons	£ 1,526,500	4 ½	D.Pedro II railway (1)
April 10,1860	Rothschild & Sons	£ 1,373,000	4 ½	Recife São Francisco Railway (2)
Feb.23 ,1871	Rothschild & Sons	£ 3.459.600	5	D.Pedro II Railway and others (3)
1875	Rothschild & Sons	£ 5,301,200	5	Government debts related to railways (4)
January 23,1883	Rothschild & Sons	£ 4,599,600	4 ½	Railways and others (5)
1893	Rothschild & Sons	£3.710.000	5%	Estrada de Ferro Oeste de Minas Railway (6)

Sources and notes: (1)Valentim F. Bouças, *História da Dívida Externa*, 2nd ed. Rio de Janeiro, 1950, p.92 (2) According to Bouças, *História da Dívida Externa,* p.93 out of this loan only £ 400,000,00 went to the Recife São Francisco Railway .(3) According to the Minister of Finances, Francisco de Salles Tôrres Homem, one of the purposes of this loan was to finance an extension of the railway Estrada de Ferro D. Pedro II. Bouças, *História da Dívida Externa*, p. 109.(4) The date this contract was signed is not available(5) This loan was said to be necessary considering that the revenues expected for 1882/1883 and 1883/1884 "were not enough to cover the expenses with studies, constructions and extensions of railways, interest rates payments to the respective companies" and other expenses .Reasons presented by the Minister of Finances, Martinho de Campos, are reproduced in Bouças, p. 114.(6) The Brazilian government kept the loan in pounds paying the equivalent amount in mil-réis to the railway Estrada de Ferro do Oeste de Minas

Table 2

Minimum interest rate guarantees paid to railways by the Brazilian Government in Brazil an in London : 1874-1889 (in mil-réis ouro)

Years	Brazil (1)	London (2)	Remittances to London Total payments (2)x100 / (1) + (2)
1874-1875	277:180$200	1.320:374$852	82.6%
1875-1876	604:140$228	1362:511$296	69.3%
1876-1877	732:496$899	1224:194$371	62.6%
1877-1878	516:745$235	1155:341$851	69.1 %
1878-1879	785:949$075	1582:115$185	66.,8%
1879-1880	649:397$364	1855:249$370	74,1%
1880-1881	525:168$904	3067:562$260	85.4%
1881-1882	Na	Na	-
1882-1883	796:676$469	5785:562$260	87.9 %
1883-1884	700:713$975	6526:057$299	90.3%
1884-1885	883:106$278	7156:090$516	89.0%
1885-1886	1166:024$026	7000:127$934	85.8%
1886-1887	Na	Na	-
1887-1888	Na	Na	-
1888	389:695$613	6324:751$563	94.2%
1889	193:955$513	6525:933$658	97.1%

Sources: Percentages calculated from data in *Balanço De Receita e Despesa do Império* (various issues)

Table 3

Interest Guarantees as Percentages of total Central Government Expenses

Years		Years	
1861-1862	1,41%	1876-1877	1.54%
1862-1863	2.11%	1877-1878	1.19%
1863-1864	2.88%	1878-1879	1.52%
1864-1865	1.62%	1879-1880	1.95%
1865-1866	1.84%	1880-1881	3.05%
1866-1867	1.36%	1881-1882	na
1867-1868	1.51%	1882-1883	5,29%
1868-1869	1.99%	1883-1884	5.82%
1869-1870	1.66%	1884-1885	6.92%
1870-1871	2.07%	1885-1886	7.28%
1871-1872	1.95%	1886-1887	na
1872-1873	1.15%	1887-1888	na
1873-1874	1,15%	1888	4.85%
1874-1875	1.29%	1889	3.58%
1875-1876	1.61%		

Sources: Percentages calculated from data in : *Balanço da Receita e Despesa do Império* (various issues) and *AnuárioEstatístico do IBGE*.

Table 4

Payments of external debts and interest rate guarantees as percentages of total remittances to London: 1874 to 1889

Years	Payment of foreign loans	Payment of interest rate guarantees	Years	Payment of foreign loans	Payment of interest rate guarantees
1861-1862	83.65%	16.35%	1876-1877	90.83%	9.17%
1862-1863	77.45%	22.55%	1877-1878	91.80%	8.20%
1863-1864	73.01%	26.99%	1878-1879	88.97%	11.03%
1864-1865	73.08%	26.99%	1879-1880	88.55%	11.45%
1865-1866	81,74%	18.26%	1880-1881	80.27%	19.73%
1866-1867	84.40%	15.60%	1881-1882	Na	Na
1867-1868	79.96%	20.04%	1882-1883	72.16%	27.84%
1868-1869	81.46%	18.54%	1883-1884	66.83%	33.17%
1869-1870	83.09%	16.91%	1884-1885	65.09%	34.91%
1870-1871	81.74%	18.26%	1885-1886	67.89%	32.11%
1871-1872	84.34%	15.66%	1886-1887	Na	Na
1872-1873	88.08%	11.92%	1887-1888	Na	Na
1873-1874	88.15%	11.85%	1888	73.51%	26.49%
1874-1875	89.35%	10.65%	1889	73.02%	26.98%
1875-1876	90.05%	9.95%			

Sources: *Balanço da Receita e Despesa do Império* (various issues)