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Property rights and the fiscal and financial systems in Brazil: Colonial heritage and the imperial period

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# DEPARTAMENTO DE ECONOMIA **PUC-RIO**

TEXTO PARA DISCUSSÃO N°. 370

# PROPERTY RIGHTS AND THE FISCAL AND FINANCIAL SYSTEMS IN BRAZIL: COLONIAL HERITAGE AND THE IMPERIAL PERIOD

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AGOSTO 997

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# 1. Property rights in a long term perspective

Rent-extraction activities traditionally played an important role in Brazil since colonial times, witness the central role played by farmed out monopolies and tax contracts and the many restrictions affecting economic activities. Much has been written about property rights in Imperial Brazil (1822-1889) but most of it dealt with either land property rights or slave-owning during the transition to a free-labour regime. Labour policies played a major role in Brazil since colonial times as the government underlined permanently the dominance of the objective of maintaining low manpower costs throughout the period. Requiring net slave imports the Brazilian economy was particularly vulnerable to an interruption of the slave trade. Thus, in the 19th century, the commitments to cease slave imports in 1830 were openly disregarded for 20 years and enforcement came only as a direct result of British pressure through the Royal Navy, especially in the second half of the 1840s.

As the final abolition of slavery took place -- without compensation to owners -- only in 1888, the transition to free labour remained one of the important economic issues during the Empire. As free labour was attracted to Brazil, land legislation became a crucial element of wage determination of free labour. In spite of land legislation in the first half of the 1850s which would have allowed land ownership by immigrants, actual control of the land (**posse**) and the ability to preserve this control were the really crucial factors. Land ownership in the agricultural frontier was to be defined by continuous occupation and was consequently beyond the reach of most immigrants. Land was available in theory but mostly to the powerful large-scale squatter occupying the agricultural frontier and not to the immigrant. Otherwise wages would increase and could affect the long term profitability of plantation agriculture as it would be expected from the "Domar hypothesis". The legalization of land ownership was a protracted process and one in which political power and outward violence at the local level played a decisive role. As Dean (1971) puts it: "**Posse** [actual control of the land] fundamentally

denied the authority of the state. The Crown had to be able to maintain its rights over public lands and - even more important - it had to establish a legitimate means of alienating them. If most of the lands in private hands was illegally acquired, then how was the state to guarantee any individual's property rights?" There was thus no clear long term definition of property rights concerning two of the most important non-financial assets in Imperial Brazil: land and slaves. In both cases government action could (and in the case of slaves did) disregard individual and legally registered private property rights.

Both the question of labor supply, involving slavery and European immigration, and the process of occupation of new lands in the 19th century have been the object of numerous studies. However, practically nothing has been written on property rights and fiscal and financial matters in Imperial Brazil. It is thus important to underline from the start the exploratory nature of this paper. North and Weingast (1989) stress the importance of constitutional developments due to the Glorious Revolution of 1688 in England as a powerful factor in explaining the development of the capital markets due to the inducement to lend made possible by an improvement in property rights. The question at issue was the protection of private property "from the depredations of the sovereign" something which was made possible by the greater strength of Parliament and the increased independence of common-law courts. North and Weingast's analysis has been complemented in certain aspects and especially so in relation to the role of indirect debt by the sovereign through joint stock companies. But the essential link between strenghtening of property rights and consolidation of financial markets remains the main focus of interest.

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<sup>&</sup>lt;sup>2</sup> Dean (1971), p.610. See also Lago (1988). In the South of Brazil, because of specific government settlement policies, immigrants had access to landownership. This area was, however, distant from the plantation zones. In those, as a foreign observer noted in 1889, "title to land cannot legally be acquired by mere occupancy unless commenced previous to [1850] though in practice squatters cannot be removed and everyone takes and keeps what he wants, unless a stronger man comes and takes it from him." See Wyndham (1889), p.41.

<sup>&</sup>lt;sup>3</sup> Turnor (1694), quoted by Carruthers (1996).

<sup>&</sup>lt;sup>4</sup> See Carruthers (1996), chapter 5.

In Brazil the conventional analysis has to suffer significant adjustments. The idea of an evolutionary long-term strengthening of property rights, going hand in hand with the shift of political power from the Crown to Parliament, is much less clear than in more advanced economies.

In that context, it is important to define what is the meaning of property rights for the purposes of this paper. Clearly what is being examined is not the existence or absense of legislation involving private law and defining the right of individuals to own private property and to dispose of it or the security of private contracts. The notion of private property or property rights in that sense, and rules to make them enforceable in courts of law, had clearly been established to some extent in 16th century Portugal and had been inherited by Colonial Brazil, where houses, slaves, cattle, plantations and various types of assets and merchandise were the object of inheritance as well as of private contracts of purchase and sale, while bills of exchange were used in commercial transactions.

What is the main concern of this study is how the government on specific occasions might infringe those rights by undermining the value of financial assets held by individuals (in Brazil or abroad) through its fiscal or financial policies or through actions similar to outright confiscation, akin to "the depredations of the Sovereign".

In that broader view, several more advanced economies were not immune to infringement of property rights by their governments in the 19th century through such actions as the repudiation of the public debt, debasement of the metallic currency or the forced circulation of paper money and through extraordinary taxation and creation of an inflationary environment or of political instability which actually corroded the real values of assets, in spite of the existence of well-defined private ownership and the theoretical legal security of private contracts.

In contrast with former colonies of Great Britain, Brazil could never look at Portugal, and particularly at Portuguese financial institutions, as paradigms to be closely followed, since the former, even though the metropolitan power, remained a rather underdeveloped economy facing difficulties of financial consolidation akin to those faced by its former colony, in spite of some episodes of financial creativity. The paradigm was Britain, even if the institutional inheritance was strongly Portuguese. The whole institutional context including the strong powers of the king could fail, as already mentioned, to provide protection from government action to real assets such as land and slaves in real practice, even though in theory the prevailing legal system based on Roman Law clearly allowed such assets to be legally registered under the names of their owners. Property rights were fragile and constantly undermined in the colonial period and part of that fragility filtered to the 19th century. This paper is a preliminary investigation concentrating only on the projections of such characteristics on the fiscal and financial systems developed in Brazil during the Empire (1822-1889).

After this introduction, section 2 of the paper considers the colonial heritage from the perspective of fiscal and monetary regimes. A short section 3 briefly sketches the direct and indirect costs of independence from a financial point of view. The next two sections consider in succession fiscal policies and monetary aspects of Brazilian finance during the Empire. Aspects related to revenue, expenditure, public debt and the political economy of public finance are examined in section 4. The next section covers monetary issues: changing monetary standards, the several versions of a Banco do Brasil, the alternation of restrictive and lax monetary regimes, changes of policy affecting the note issuing rights of private banks. Section 6 presents the provisional conclusions.

### 2. The Colonial heritage

Production of sugar was the first economic activity in Brazil in the 16th century which led to the permanent settlement of the colony and which also gave rise to its first fiscal apparatus. The establishment of a royal government in Bahia in 1549 resulted in the

appointment of a **provedor-mor da fazenda**, the main fiscal crown official in the colony, responding directly to Lisbon. The main principles and "regulations of the **regimentos** of the **provedor-mor** and of the partial **provedores** of the royal treasury were maintained, with slight changes, during the whole colonial period". The provedor-mor was to establish a customs house (alfândega), with the appropriate books of revenues and expenditures, of the updated regulations and provisions for the levy of rights. He should also organize a house for the royal treasury business (casa de contos), having with that objective "all the books necessary, one to register revenues and their titles, another of forais and regimentos, provisions, salaries, contracts, rents, etc." His attributions also included the organization of customs and contos houses such as those in Bahia in all the captaincies. He should separate revenues according to branches and auction their contracts, demanding guarantees from the contractors, following the treasury regimento enforced in Portugal. He was also to demand from the **provedores** in each captancy to present annual accounts of revenues and expenditures and require that they send the balance to the treasurer resident in Bahia. The staff of the provedor-mor was to constitute the first fiscal and financial bureaucracy in Brazil, and reflected, at an early date, the objective of the Portuguese crown of guaranteeing rent-extraction from Brazil.5

The initial revenues to the crown from the colony originated from brazilwood, in the early 16th century. The cutting and exportation of that dyewood was successively the object of a monopoly contract, temporary free exploitation and again a monopoly farmed out to contractors. However, the principal economic activity developed in Brazil in the second half of the 16th century was sugar production. "From 1580 to 1680, Brazil [would be] the world's largest producer and exporter of sugar." Thus, in addition to the already existing income from brazilwood, the "most important tax [was] constituted by the **dízimo**, the tenth of the [sugar] crop that the **senhor de engenho** [had] to pay to the Order of Christ, whose estate [was] administered by the crown. Generally paid in sugar

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<sup>&</sup>lt;sup>5</sup> Garcia (1975), pp. 101-103.

<sup>&</sup>lt;sup>6</sup> Schwartz (1987), p. 67.

as it would come out of the [sugar] purging house (**casa de purgar**), it was farmed out, the price of the contract varying with the crops or expected crops."<sup>7</sup> Thus taxation was mainly on production, not on trade.

The principle of farming out tax collection in the colony through periodical auctions was established at an early date. Figures for tax farming contracts exist for given years both for Brazil as a whole and for specific captaincies from the 16th to the 18th century when that practice would continue to be maintained. The incidence of the **dízimo** (tithe of 10% on all products) was indeed comprehensive (including all types of products besides sugar, such as "manioc, bananas, potatoes, sheep, goats, chicken"etc).8 The frequently close relationship of the contractors with local public officials would be a constant cause of concern of the metropolis.9

Though the **dízimo** (tithe) was for a long time the only tax paid within the colony, there were also taxes on the entry and sale of Brazilian products in Portugal. In the late 1500s, those products were supposed to pay 10% of customs duties (**dízima**) and 10% of **sisa** (sales tax), or a total of 20% upon entry in the metropolis, though sugar mill owners, who shipped their own sugar , could obtain exemptions for a number of years.

After the union of the two Iberian crowns in 1580, a new tax, the **consulado** of 3%, was created in the 1590s, supposedly to fund the construction of warships to protect the ships trading between Brazil and Portugal. The same pretext was later used for the imposition of another tax, the **averia**. After 1630, the war with the Dutch led to an increase in taxation to finance the recovery of the Northeast as well as the new fleet system created in 1649. In Portugal, the right of **meias-anatas**, a contribution paid by all holders of public office such as judges and notary publics, was also created. The definitive peace with Holland in 1661 led to the payment of a war indemnity as well as

<sup>8</sup> Johnson (1987), pp. 37-38. For the 18th century, see Maxwell (1973), p. 261.

<sup>&</sup>lt;sup>7</sup> Mauro (1983), p. 259.

<sup>&</sup>lt;sup>9</sup> Azevedo (1973), pp. 251-252.

indemnities to persons having suffered expropriation in Pernambuco by the Portuguese in 1654, including the Jews who had left Brazil, <sup>10</sup>, part of which was borne by Brazilian colonists. The dowry of a Portuguese princess was also a pretext for additional temporary taxes, and some municipal taxes - normally excises (**subsídios**) on certain imported or local consumption goods - were levied in some cities of Brazil, even though municipalities would never have the same importance as in Spanish America.<sup>11</sup>

Agriculture was the basis of economic taxation in Brazil, but crown monopolies on certain products were also renewed or created in the early 17th century to try to bolster the crown's revenues. "A new royal monopoly on brazilwood was established in 1605... Similar monopolies were established on whaling and salt while an **estanque**, or monopoly, on tobacco sales in Portugal would be created in the 1630s." In all cases, the contracts were also farmed out to private contractors through a system of auctions held periodically.

The growing needs of labour in the colony were met by increasing imports of African slaves into Brazil. Those slaves were taxed by the Portuguese crown on embarkation in African ports increasing their final price in Brazil, even though they were often purchased in exchange for sugar cane brandy, tobacco and other Brazilian goods. "The slave trade was open to all Portuguese on payment of a due. The collection of dues was farmed out, by means of an **asiento** (contract) to a **contratador**, who delivered the **avenças** (agreements) to the traffickers."<sup>13</sup>

The direct tax represented by the **dízimo** (raised in kind as a withholding tax) was borne by Brazilian producers. It is difficult to discuss the actual incidence of the taxes imposed on Brazilian products upon entry in Portugal and to what an extent they affected the prices received by Brazilian producers or were borne by final European

<sup>&</sup>lt;sup>10</sup> See Egon and Frieda Wolff (1991), for a list of the beneficiaries.

<sup>&</sup>lt;sup>11</sup> Alden (1968), pp. 304-306.

<sup>&</sup>lt;sup>12</sup> Schwartz (1987), pp.98 and 103.

<sup>&</sup>lt;sup>13</sup> Mauro (1987), p. 52.

consumers. On the other hand the taxes charged on the embarkation of goods to Brazil, also normally in the order of 20% (plus 3% of **consulado** and 3% of **averia**), were clearly a burden on the colony's inhabitants.

The generalized system of credit granted by metropolitan and local merchants to the colonists, involving the use of letters of exchange since the late 16th century, with balances being only periodically settled in currency instead of paid in kind, as it was most frequent, coincided with a limited circulation of coins in the colony. In fact, during the 16th century barter was frequent and even the payment of pensions and salaries by the general government was often in kind, apparently as an adaptation to the scarcity of currency.<sup>14</sup>

The colonists were also on several occasions and from an early date subject to the negative impact of manipulations of the face value of Portuguese coins. For instance, in 1568 when copper coins were devalued, in 1642 and 1663 when silver coins of previous reigns were countermarked in the metropolis to increase their nominal value by 20 and 25% respectively, and in 1688 when both silver and gold coins had their nominal value increased by 20%, again with their intrinsic value unchanged. In Brazil, Spanish American silver coins were countermarked in 1643 to increase their value by 50% (the colonists of Bahia being given one month and those of the hinterland two months to present their coins to be substituted), and new countermarks were applied in 1663 and 1679, the silver 8 reales of unchanged intrinsic value being respectively valued at 480, 600 and 640 reis. In most occasions, there is evidence of complaints of the colonists against the **levantamento** of the currency, which was a clear infringement of their property rights to the extent that nominal prices for their products did not automatically increase.<sup>15</sup>

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<sup>&</sup>lt;sup>14</sup> Varnhagem (1962), tome 1, p. 343.

<sup>&</sup>lt;sup>15</sup> Varnhagem (1962), tome 1, pp 342-343; Sombra (1937), p. 74; Calógeras (1960), pp. 7-8; Boxer (1962), p. 28; Prober (1966), pp. 25-28; Coimbra (1958), tome II, pp. 136-140.

The acute shortage of coins and the use of other goods for transactions, as well the payments of wages, pensions and other state obligations in kind (which was favored by the tithe system) are widely documented also for the 17th century. However, the Portuguese currency was the standard of value to which all goods were referred to in the case of payments in kind and Brazil was clearly a "monetary economy". <sup>16</sup>

Only in 1694 was a first mint <sup>17</sup> finally authorized in Bahia to issue coins for local use, (and with circulation forbidden in the metropolis). The law of March of that year stipulated a seignoriage of 6.66% on the coinage of gold and silver, the same observed in Portugal, supposedly to cover production costs. <sup>18</sup> The mint was later temporarily moved to Rio de Janeiro and then to Pernambuco, before returning permanently to Rio in 1703. Copper coins were also issued in Oporto between 1694 and 1699 for exclusive circulation in Brazil. The difference of 10% in the value of the colonial coinage locally as opposed to its value in the metropolis, to hinder the export of coins, which was observed in other American colonies, also prevailed initially in Brazil. <sup>19</sup> However, after 1702, the coinage of gold Portuguese or "national" coins was also allowed in the colony, most being exported to Portugal. In 1714, a second mint was created in Bahia. In Minas Gerais a third mint only issued gold coins from 1724 to 1734.

The discovery of significant quantities of gold turning Brazil into the world's largest producer would entail new regulations and fiscal controls in the gold mining regions, while the previously existing taxes were maintained in other regions of the colony. The increase in production would permit a significant increase in Brazilian coinage of gold, and to a much lesser extent of silver (after 1695) and copper (after 1729), and in spite of the concerns of the Portuguese authorities with contraband, gold

<sup>&</sup>lt;sup>16</sup> See Lago (1973).

<sup>&</sup>lt;sup>17</sup> The Dutch had made small emergency issues of silver and gold coins denominated in florins in 1645-46 and in 1654 in Pernambuco, but did not establish a mint. "**Ordenanças**" or paper bills issued in 1640 and 1643 also had had forced circulation in Recife for short periods. See respectively Prober (1966), p. 23; Calógeras (1960), p. 6; Lissa (1987), p. 13 and Trigueiros (1987), pp. 65-66, who refers to **ordens de pagamento.** 

<sup>&</sup>lt;sup>18</sup> Coimbra (1959), vol. III, pp. 66-67.

<sup>&</sup>lt;sup>19</sup> McCusker (1978) pp. 118, 282, 301; Calógeras (1960), pp. 9-10.

dust would also circulate widely (despite prohibitions). Barter and payments in kind would also continue in certain regions well into the 19th century. **Juntas da Fazenda**, independent from the **Provedor-mor** were created after 1761 in the mining captaincies to deal with fiscal affairs, and a special silver coinage with circulation restricted to Minas Gerais was issued in Rio de Janeiro and Bahia from 1752 and 1774, after another special copper issue in 1722. The issue of both "Colonial"and "national" gold coins continued throughout the century and, in spite of efforts of the colonial authorities, there are clear indications that both types of coins circulated within the colony.

Gold production was taxed on the basis of different systems at different times, and the selling price of gold was set by the crown and not through market mechanisms, a fact which was always a source of complaint of the miners. "Different forms of collection [of the **quinto** (fifth) on production]... fell into two general categories: collection by a form of capitation tax or collection in foundry houses...[where gold was cast into stamped gold bars or transformed into coin.]... In the space of 30 years the search for the perfect method led the crown in Minas Gerais to go from a quota based on a form of capitation to a foundry house (1725), to capitation (1735) and back to foundry houses (1751). Evidence of royal frustration was the proposal floated in 1730 and again in 1752 to examine tax farming as an alternative to direct collection by the crown, but this was never adopted. The advantage of foundry houses (from the crown's perspective) was ease and speed of collection, whereas collection by capitation could result in delays of two or three years. As for the colonists, they were as adamant as they were inconsistent in their public opposition to one or the other method."<sup>20</sup>

Different systems were also adopted for diamond mining, after the 1720s, when Brazilian production flooded the world market and reduced the price of the stones. The capitation tax levied on each slave employed after 1739 was changed in 1753, when two separate contracts were adopted, with little success. After 1771, a General Inspectorate

<sup>&</sup>lt;sup>20</sup> Russell-Wood (1987) p. 227. Boxer (1962), p. 199, mentions that "the capitattion tax proved highly unpopular" and that farmers and cultivators paying **dízimo** on their crops and **quinto** on their slaves were "being liable in effect to double taxation."

of the diamonds was created to administer directly the royal monopoly of mining and sale of the diamonds. But "the oppressive system of totally isolating" the diamond areas ceased. The government monopoly would however last until 1845.<sup>21</sup>

As gold production faltered after mid-century, revenues of the **quinto**, after exceeding 100 **arrobas** in the 1750s, <sup>22</sup>fell to an average of 86 **arrobas** in the 1760s and to 68 **arrobas** between 1774-85 and arrears on the annual revenue target of 100 **arrobas** developed. <sup>23</sup> In parallel, as gold production declined, the capacity to import goods from abroad and other captaincies was also reduced, and the **entradas**, the taxes levied on slaves and goods entering or leaving the gold producing region, also declined. These taxes, contrary to the collection of taxes on gold, were also farmed out to contractors and arrears also developed. For fear of contraband, the reaction of the Crown included the prohibition of the goldsmith craft in Brazil in 1766.

The supply of gold coins, especially the "Johannes" or "Joe" or **peça** of 4 escudos, equivalent to 6,400 réis, led that coin which was minted both in Portugal and Brazil to become by mid-century a "universal coin of the Atlantic World" whose purity was admired and which was often locally countermarked in the Caribbean.<sup>24</sup>

By the late 1780s, it was estimated that the arrears of the gold taxes reached 538 arrobas. The mechanism of the **derrama**, through which a capitation tax would be levied in each municipality of the mining regions to be added to the **quinto** to complete the 100 arrobas expected by the crown, and which had been proposed by the municipalities themselves in the 1750s, was never demanded by the **Junta da Fazenda** which

<sup>&</sup>lt;sup>21</sup> Silva (1987), pp. 262-3, 276. Castello and Dodsworth (1940), pp. 4-8, 11-13.

<sup>&</sup>lt;sup>22</sup> An **arroba** equalled 14.69 kilograms.

<sup>&</sup>lt;sup>23</sup> Maxwell (1973) pp. 47-48, stresses the consequent "fall-off ... of gold coin entering into circulation".

McCusker (1978), pp. 300-301. The exchange rate of the Portuguese gold coin against sterling in London did not vary significantly from 1698 to 1775. In Brazil, the "weak" provincial coins were issued at 1,760 réis per **oitava** from 1695 to 1702 and at 1777.66 réis per **oitava** from 1749 to 1822. The "strong" system of Portuguese national currency, including the 6,400 réis, was issued at 1,600 réis per **oitava**. The "Joe" was issued from 1727 to 1822, basically in the two mints of Rio de Janeiro and Bahia. The fineness of all coins was 22 **quilates** (0.91666 fineness). See Prober (1966). p. 18.

supervised tax collection in the mining region, and which was aware of the decline in gold production. The threat of a **derrama** in early 1789 in Minas Gerais helped to obtain the support of affluent people and tax farmers in arrears to a conspiracy which failed, but was supposed to separate Brazil from Portugal and create a republic (which in turn was expected to be initially supported by the **quinto**). The raising of the **derrama** as a capitation tax on the population at large and not only on gold producers would have represented an infringement of property rights and an unfair incidence on the population as a whole, but given the 1789 conspiracy, the **derrama** was never implemented.

By that time, coins were already comparatively scarce in the colony and the certificates issued by the General Inspectorate of Diamonds (bilhetes de extração) became in practice the first paper money in Brazil. They were complemented in 1803 by the bilhetes de permuta of the foundry houses, issued against the Juntas da Fazenda and the Treasury, which also circulated as currency.<sup>25</sup> Once the government ceased to honour the commitments represented by those certificates, they began trading at a discount, involving losses to their holders.

Through taxes, prohibitions and monopolies, as well as through the fleet system implemented in 1649 and maintained until 1765, the Portuguese crown restricted economic freedom within the colony and its commerce, as well as a full exercise of property rights of the colonists. An Edict of 1785 also prohibited more sophisticated textile manufacturing in workshops, excepting rough cotton to clothe the slaves.

But government action through legal instruments could also favor some groups to the detriment of others within the colony, interfering in private contracts. "The planters' habit of buying necessary equipment on credit for 20-30 per cent above the Lisbon price by mortgaging the next harvest at a set price below its market value was the cause of endless acrimony and remonstrance to the crown. In 1663, and periodically thereafter, planters managed to stop engenhos and canefields from being sold piecemeal

<sup>&</sup>lt;sup>25</sup> Simonsen (1967), pp. 408-409, Calógeras (1960), pp. 27-28, and Trigueiros (1987), pp.66-68.

to satisfy debts, but the mercantile interest was always strong enough to prevent the realization of the planters' dream - a complete moratorium on debts.".26 This "right" was later extended to the **lavradores de cana** (sugar cane planters without a sugar mill) as confirmed by legal rulings in the 1720s and would result in legislation protecting the sugar mills from seizure well into the 19th century.

On the other hand, while new regular taxes on production besides the **quinto** were not implemented in the 18th century, additional fiscal exactions also took the form of extraordinary taxes such as the aids asked from Brazilian municipalities for the reconstruction of Lisbon destroyed by an earthquake in 1755. This resulted in increases in the already existing municipal taxes.<sup>27</sup>

Exactions also resulted from the attacks of foreign powers, as exemplified by British privateers in the late 16th century and the expropriations carried on by the Dutch in Northeast Brazil. An 18th century episode is the attack of Rio de Janeiro by the Breton corsar Duguay-Trouin in 1711. Nicknamed the "parfait gentilhomme", he found considerable booty in the abandoned city and received a substantial sum in coins, sugar and cattle, as ransom for the city and the forts that he threatened to level to the ground. The money was taken from the fifth, the mint, and a forced and substantial contribution by the wealthiest citizens.<sup>28</sup>

<sup>&</sup>lt;sup>26</sup> Maxwell (1987), p. 133.

<sup>&</sup>lt;sup>27</sup> See Alden (1968), pp. 305-307. See also pp. 279-352 for an extensive discussion of fiscal matters in 18th century Brazil, including the reorganization of the royal fisc, Portuguese revenues from the colony, government expenditures, local government debt, and the expropriation of the "extensive urban and rural properties of the Society of Jesus" expelled from Brazil in 1759-60. Among other taxes, Alden mentions the creation of a quinto (fifth) on cattle hides at the end of the 17th century, the collection of a 10% ad valorem tax on imports between 1699 and 1719 established by maritime municipalities to support local military garrisons, a guard tax levied by the municipality of Rio de Janeiro for the "maintenance of the guard ship off the Brazilian littoral." He also gives details on the **entradas** established between 1710 and 1714 and levied on goods entering Minas Gerais as well as on the interior customs stations (registros) raising transit tolls (passagens) along the trails between various captaincies and the mining region. These interior taxes, however, would never have the same relative importance as **alcabalas** in Spanish America. On "local dues levied by town councils for the upkeep of roads and bridges and other municipal services" and on taxation in general, see Boxer (1962), pp. 187-191. For contracts of the royal **dízimos** and tolls in the 18th century see Boxer (1962), pp. 347-350.

The arrival of the Portuguese Court in Brazil in 1808, fleeing Napoleon's armies would change the nature of taxation in the colony, as the ports of Brazil were opened to direct foreign trade with other nations and as some taxes raised in the mother country were transplanted to the colony. The landing of the court resulted in a clear infringement of the rights of urban property owners in Rio de Janeiro, as in order to accommodate thousands of courtiers and civil servants who had accompanied the royal family, the government requisitioned many private houses for their use.

By the second decade of the 19th century when the Brazilian colony was elevated to the status of United Kingdom with Portugal (1816), the main existing taxes in Brazil were: the **dízimo**; export duties differentiated by ports; import duties; transit taxes between captaincies; the royal **quinto** on gold production; the royal or national subsidy, levied on meat, hides, sugar cane brandy and rough woollens manufactured in the country; the literary subsidy to fund schools, charged on heads of cattle in slaughter houses, brandy, or **charque** (jerked beef); a tax on most shops and on carriages, to fund the Banco do Brasil; a tax on each sugar mill or distillery; a tenth of the income of urban rented property; the **sisa** of 10% on the sale of houses and other urban property; the **meia-sisa** of 5% levied on the sale of slaves with a profession; the so-called **novos direitos**, a 10% tax on the salaries of employees of the Finance and Justice departments (as the Portuguese **meia-anata**). Several other taxes and levies including the stamp tax, chancery rights, salt, and port taxes were also charged on certain transactions.

Some of these taxes would remain in force until late in the 19th century, though the **dízimo** was finally abolished in 1821. Tax farming of the salt tax and of whale fishing was definitively abolished in 1801. <sup>29</sup>

The immediate revenue needs of the court had led to the opening of Brazilian ports in 1808, and to the levying of tariffs on imported goods, which were initially

<sup>&</sup>lt;sup>29</sup> Varnhagem (1962), tome V, pp. 102-103; Simonsen (1967), pp. 413-415; Viana (1922), p. 192; Calógeras (1960), p. 31.

regulated in the Treaty of 1810 with Britain. From then on, the road to political independence was open and the practice of basing the government revenues on the taxation of international trade (rather than on production through the **dízimo**) was firmly established.

The end of the colonial period was marked by further manipulation of the currency. In the 1790s copper coins of reduced module and copper content were issued for circulation in the mining region. The so-called **escudete** countermark was applied to the existing copper coins in 1809, doubling their value, and to the previous century special silver coinage for Minas Gerais increasing its value by 15% <sup>30</sup> Spanish American silver pieces of 8 reales were acquired in large quantities by the Portuguese treasury in Brazil for a value around 800 réis, and countermarked or recoined with the value of 960 réis after 1809 and until the 1820s. <sup>31</sup> Soon the little gold which remained in circulation disappeared. A final blow on the circulation of precious metals was the emptying of the Treasury coffers by the Portuguese King D. João VI when he returned to the metropolis in 1821. <sup>32</sup> By then, circulation of copper and paper money (the notes issued by the first Banco do Brasil created in 1808) was already predominant.

### 3. The costs of independence

In 1822, the crown Prince D. Pedro, the older son of the Portuguese King, declared the independence of Brazil, as the **cortes** of the metropolis were trying to

<sup>30</sup> See Coimbra (1959) tome III, pp. 159-160.

<sup>&</sup>lt;sup>31</sup> See, for instance, Walsh (1830), vol. I, p. 456 and Coimbra (1959), tome III, pp. 158-166. Silver coins had been previously issued at 7,600 réis per mark (of 229.450 grams) from 1695 to 1758 (and in Bahia from 1799 to 1810, but only the 640 réis coin) and at 8,250 réis per mark from 1768 to 1802, with a 0.91666 fineness. From 1809 to 1834 they would be issued at 8,192 réis per mark. However the fineness of the 8 reales pieces on which the 960 réis were recoined was 0.903 or 0.896 as opposed to the 11 **dinheiros** silver (0.91666 fineness) used in the other Brazilian colonial coins. See Prober (1966) p. 17.

<sup>&</sup>lt;sup>32</sup> Viana (1922), pp. 185 and 195-205; Calógeras (1960) pp. 22, 26-27, 35; Coimbra (1959), tome III, pp. 158-160. The royal **quinto** had declined from 70 arrobas of gold in 1777 to 24 in 1811, 12 in 1818 and only 2 in 1820, according to Eschwege (1899), p. 752, reducing substantially the supply of metal to the Bahia and Rio de Janeiro mints.

reestablish the colonial status and economic and political subjection of Brazil to Portugal. In this he was assisted by some Brazilian politicians with Portuguese university education such as José Bonifacio de Andrada, but there was no group of thinkers with a strong background in political economy to assist the new government in formulating the new country's economic policy.

José da Silva Lisboa, Viscount of Cairú, who had read Adam Smith and supported the liberal trade policy inevitably adopted after 1808, was not succeeded by knowlegeable civil servants and much less by figures of the stature of Hamilton in the United States. The conduct of government matters would therefore suffer no abrupt change from Portuguese practices.<sup>33</sup> The new emperor Pedro I (1822-1831) also took power in a country with an extremely high illiteracy rate (probably 85 to 90% of a population of some 4 million) a fact which unfavourably affected the spread of information, the adoption of new practices, innovations and institutional change.

Independence was a costly process in Brazil. Recognition by Portugal with the intermediation of Britain involved important concessions to both countries. In the case of Portugal this involved payment of indemnities basically through the transfer of responsibility for the service of foreign loans contracted in Britain. D. João VI on leaving Brazil in 1821, as parting gesture on the stance of the Portuguese Crown on property rights, not only paid no more than lip service to the need to protect the Banco do Brasil from the cash drain provoked by the decision to return to Portugal but took over assets held by the bank, as already mentioned.<sup>34</sup>

But much more important in the long-term was the renewal by Brazil of treaty obligations entered between Portugal and Britain concerning both the slave trade and Brazilian commercial policy. By a convention of 1827 Brazil agreed to discontinue the

<sup>&</sup>lt;sup>33</sup> The most striking illustration of how slow changes could be in the former colony is the observation of the Minister of Finance in his report of 1828 that that customs houses were still regulated by a **foral** of 1587. See Veiga Filho (1898), p. 113.

<sup>&</sup>lt;sup>34</sup> See Franco (1979), ch. IV. See also Viana (1922), pp. 195-205 on the report of the commission created to study the reorganization of the treasury and the debt and currency problems created by D. João VI's departure and on the "independence loan."

importation of African slaves in three years. While this commitment remained a dead letter until the 1840s, it provided a sound legal basis for the Britich onslaught on slave trade activities which culminated with Brazilian legislation finally outlawing the trade in 1850 and leading to its definitive interruption. More immediately important was the renewal in 1827 for fifteen years of the commitment entered by Portugal with Britain that the Brazilian import tariff would not exceed 15% ad valorem.<sup>35</sup> Due to the lack of alternative sources of revenue in a primary exporting economy, and given the increased expenditure generated by the many regional political troubles from Independence to the early 1840s, such a decision was tantamount to a situation of persistent fiscal imbalance and led to large fluctuations of the exchange rate which plagued the Regency government during the minority of the new Emperor D. Pedro II (1831-1889) and persisted for a few years after he finally took power directly in 1840. The return of freedom to tax after some British procrastination and the consequent increase in the share of import duties in total revenue led to a marked improvement in public finances and to a less unstable exchange rate regime from the mid 1840s. So much for the alleged lack of involvement of the Foreign Office with business interests in Latin America.<sup>36</sup>

## 4. Fiscal issues in the Imperial Period (1822-1889)

The basic elements of the fiscal apparatus inherited from colonial times were preserved during the first years of the Imperial period. The Public or National Treasury, which had been established as "**Erário Régio**" in 1808, continued to be subject to the instructions of the Lisbon **Erário** dating from 1789, until a decree was issued with new instructions in 1829. The **Juntas da Fazenda**, established in some captaincies after 1761, were also in most cases maintained in the newly created provinces, also using

<sup>&</sup>lt;sup>35</sup> See Manchester (1933), chapter 8. This rate was extended to other nations in 1828. See Fontoura (1921), p. 29, who presents a detailed description of tariff legislation and of all the changes in import duties and exemptions in the Imperial period, as well as the contemporary justifications for those changes.

<sup>&</sup>lt;sup>36</sup> Brazil is a major counterexample for most of the points raised in Platt (1968) about the stance of the British government in Latin America. See pp. 312-6. Platt also repeats the often raised but never proved point about the damaging impact of the 1827 Commercial Treaty on Brazilian "manufactures". Its much more important fiscal impact is disregarded.

regulations of the past until 1831, when **Tesourarias da Fazenda** were created (which would last until 1891). The law of October 4, 1831, containing instructions to the provincial **Tesourarias**, still referred to the practice and responsibilities involved in the farming out of taxes through auctions, but given the changes in the nature of taxation, with the elimination of the **dízimo** and the growing relative importance of taxes on foreign trade, tax farming tended inevitably to lose its importance.<sup>37</sup>

The monopoly of the brazilwood was maintained well into the second Empire and that of diamond production until 1845. The taxation of gold according to a fraction of production also continued in the 1830s. A law of October 8, 1833 created a new tax on urban slaves, excluding those below twelve years of age. There was thus substantial continuity in the fiscal area and even the organization of the **alfândegas**, in spite of their accrued importance, did not suffer initially any significant changes.<sup>38</sup>

Central government revenue in the early 1830s relied heavily on duties collected on foreign trade: import duties, export duties and related taxes such as those relative to docking and lighthouse. This was so in spite of the constraints imposed by the British treaty. This is in line with predictions based on marked differences between taxes on trade and internal taxes from the point of view of collection costs. These costs are much lower for taxes on trade, especially so if waterborn. The much higher internal tax collection costs lead to tax monopolies while taxes on trade are rarely farmed out. The political resistance of land-owners to taxation of land, which in many cases they occupied rather than owned, was well known. The so-called interior taxes and duties affected many transactions not directly related to foreign trade such as transfer of real estate, contracts, inheritances and property of urban slaves. From the mid-1840s freedom to tax

<sup>&</sup>lt;sup>37</sup> See Almeida (1922), pp. 8,14,18-20,33.

<sup>&</sup>lt;sup>38</sup> Showing a recovery with respect to the **quinto** in the late 1810s, the tax of 25% levied on the gold produced with more advanced technology by the British mining company of Gongo Soco yielded some 128 arrobas between 1828 and 1834, according to a table of the **Contadoria de Fazenda** of Minas Gerais, reproduced in **Revista do Arquivo Público Mineiro**, IV, 1899, p. 293. In the 1830s, import duties were levied by the **Alfândegas** and the export duties by **Mesas do Consulado**, which were reformed in 1836-1837.

<sup>&</sup>lt;sup>39</sup> See North and Thomas (1973).

imports at more than 15% ad valorem was recovered and there was some increase in import duties. There were no significant changes in the structure of revenue until the end of the Empire. A slave emancipation fund was created so that, together with legislation ending slavery for newly born Brazilians (1871), the slave population could be gradually reduced. By the 1880s some new interior taxes had been created but revenue still depended basically on taxation of foreign trade. See table 4.1 for a breakdown of central government revenue by types of duties and taxes.

The share of import duties in ordinary revenue after 1833 was always above 50%. It rose to nearly 60% in the late 1830s and to almost 70% in the mid 1850s, then it fell. But it remained around 50-60% for the rest of the Empire. Export duties collected by the central government corresponded to slightly more than 5% of ordinary revenue in the early 1830s. Their share then rose rapidly to almost 25%, fell to 12% in the 1850s and stabilized at 15-17% for most of the end of the Empire. By the late 1880s it was back to 12-13%. Interior taxes made up 25% of revenues in the early 1830s and, after declining to almost 10% in the early 1840s, rose to stabilize around 22-29% in the last decades of the Empire. 41

Table 4.1 Brazil: Revenue structure, 1833-34 to 1888, % of total revenue

	Import duties	Export duties	Interior taxes	Maritime taxes
1833-34*	53.4	6.4	38.0	2.1
1834-35	50.7	5.7	41.7	1.9
1835-36	52.9	6.4	38.8	1.9
1836-37	61.5	17.6	18.4	2.5
1837-38	59.6	19.6	17.2	3.6
1838-39	60.5	20.1	15.3	4.1
1839-40	54.6	24.8	17.2	3.5
1840-41	65.3	19.0	11.9	3.8
1841-42	66.5	18.4	11.4	3.7
1842-43	59.5	19.6	17.0	3.9
1843-44	60.4	17.8	17.7	4.0

<sup>40</sup> See Carreira (1980), passim. New taxes included those on railway tickets and on the consumption of tobacco. See Mello (1984), p.249 and Veiga Filho (1898), p. 90.

<sup>&</sup>lt;sup>41</sup> Raw data from Carreira (1980), passim.

1844-45	60.6	16.8	20.0	2.7
1845-46	59.8	19.3	18.7	2.3
1846-47	60.2	17.6	20.0	2.1
1847-48	57.2	20.4	19.8	2.5
1848-49	61.7	15.3	20.7	2.3
1849-50	65.3	14.3	18.3	2.1
1850-51	65.7	15.1	17.5	1.7
1851-52	72.2	13.2	13.0	1.6
1852-53	69.1	13.9	16.4	0.6
1853-54	69.6	11.3	18.5	0.6
1854-55	68.4	12.9	17.9	0.7
1855-56	67.0	12.3	20.1	0.7
1856-57	67.6	14.2	17.7	0.5
1857-58	66.0	13.6	19.8	0.5
1858-59	62.7	15.9	20.7	0.6
1859-60	63.1	12.9	23.4	0.7
1860-61	61.1	14.8	23.6	0.4
1861-62	61.0	16.0	22.4	0.5
1862-63	58.3	17.7	23.4	0.6
1863-64	59.5	17.6	22.4	0.5
1864-65	61.9	17.3	20.3	0.5
1865-66	59.6	19.6	20.3	0.5
1866-67	60.3	17.2	22.0	0.5
1867-68	52.2	22.4	25.0	0.4
1868-69	54.2	22.2	23.1	0.5
1869-70	56.4	19.2	24.0	0.5
1870-71	57.8	16.3	25.5	0.5
1871-72	59.3	17.4	22.8	0.5
1872-73	57.1	18.3	24.1	0.5
1873-74	56.5		25.5	0.6
1874-75	54.3	18.4	26.9	0.4
1875-76	56.0	16.6	27.2	0.3
1876-77	55.7	16.8	27.4	0.1
1877-78	55.9	16.1	27.9	0.1
1878-79	54.2	16.6	29.1	0.1
1879-80	55.1	15.8	28.9	0.2
1880-81	54.3	16.3	29.1	0.3
1881-82	56.9	15.3	27.5	0.3
1882-83	58.2	13.1	28.4	0.3
1883-84	61.2	12.8	25.6	0.4
1884-85	55.5	14.2	29.9	0.4
1885-86	58.0	12.3	29.4	0.3
1886-87**	59.4	13.4	26.9	0.3
1888	63.2	10.4	26.1	0.3

\*Fiscal year beginning July 1st. \*\*Three semesters.

Source: Raw data from Carreira (1980).

The level of import duties showed an increasing trend during the Empire. The average tariff measured by the ratio between collected duties and the value of imports remained around 17% in the ten years before 1843. It then increased rapidly to reach 30% in 1848-49, remaining roughly between 25 and 30% until the late 1860s. It then was increased to 35-40%, until further rises in the late 1880s to almost 50%.

Brazilian preeminence as a coffee supplier to the world market<sup>12</sup> had important consequences from the point of view of tax incidence, especially so as the price elasticity of demand for coffee was low. It was recognized already in the 19th century that taxation on coffee exports was likely to result in increased world coffee prices.<sup>43</sup> Moreover, Abreu and Bevilaqua (1996) have shown that there is an optimal tariff mechanism at work in Brazil with increased production costs caused by increased protection being transmitted to world coffee prices due to Brazil's dominant position in the world coffee market. The foreign consumers ended by paying through higher coffee prices the increased coffee costs of production. The argument, of course, applies only to coffee. Taxes on foreign trade unfavourably affected the income of exporters outside the core of coffee producing regions. The effect of high export and import taxes on regions outside the coffee core was to reduce the competitiveness of Brazilian non-coffee exports and reduce their shares of the world markets in the long-term (see table 4.2 for the share of different commodities in total exports).

Provincial taxation was important: fragmentary and inadequate data on provincial and municipal finance indicate that such revenues were roughly 25% of central government revenues from the mid-1840s to the mid-1880s.<sup>44</sup> Due to the lower

<sup>&</sup>lt;sup>42</sup>In the six decades or so after independence the value of coffee exports increased at 3% a year and the share of coffee exports in total exports rose to more than 60%.

<sup>&</sup>lt;sup>43</sup> See Ridings (1994), p. 195, quoting Relatório do Ministério da Fazenda 1872, p.75 and 1879, Anexo B, p. 5-6.

<sup>&</sup>lt;sup>44</sup> See Carreira (1980) and Straten-Ponthoz (1854).

collection costs provinces also relied on taxes on trade, including foreign trade. Though provincial taxation of foreign imports was illegal according to the 1824 Constitution, changes in legislation in the 1830s and various subterfuges created in the following decades resulted in its widespread adoption.

According to the 1824 Constitution, it was the attribution of the legislative chambers to "annually establish the amount of public expenditures and to distribute the direct contribution... to authorize the government to contract loans... to establish the adequate means for the payment of the public debt...to regulate and administer the "bens nacionais" [basically property expropriated from the Jesuit order in the 18th century]..to determine the weight, value, inscription, type and denomination of coinage, as well as the standard of weights and measures..." It was the exclusive attribution of the Chamber of Deputies to take the "initiative regarding taxes".

However, the "Additional Act" of 1834 allowed provincial legislative assemblies to legislate on the "establishment of the municipal and provincial expenses, and the taxes necessary to meet them, provided they do not harm the general impositions [taxes] of the Central Government."<sup>45</sup> Consequently, the initial exclusive constitutional attribution of the Chamber of Deputies of the Empire to create taxes was circumvented and what taxes would not negatively affect the revenues of the Central Government became a matter subject to interpretation.

As a 19th century observer noted, article 12 of the "Additional Act", by "forbidding [explicitly] the provinces to decree import taxes 'a contrario sensu' seemed to concede [implicitly] that faculty relatively to export taxes." <sup>46</sup> However, it was apparently well perceived in the provinces of the Northeast that "in face of the competition suffered by [their] sugar and cotton [exports] in international markets, taxes on exports could not be raised [without a negative impact on production] contrary to the

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<sup>&</sup>lt;sup>45</sup> Nogueira (1987), pp. 64-65 and 86-88.

<sup>46</sup> Veiga Filho (1898), p. 112.

situation in the coffee provinces which, in view of the dominant position of Brazilian production, could transfer to the foreign consumer the burden of the increase in export taxes on coffee." <sup>47</sup>

On the other hand, the word "importation" in the same article was itself the object of discussion as to whether it included "merchandise from one province which entered another province," which led to a clarification by the Council of State in 1861, forbidding the taxation of interprovincial imports. But even this was not an absolute ruling as, when the political issue of the transfer of slaves from the Northeast and other areas to the coffee regions became more serious in the early 1860s, the interprovincial slave trade was burdened with both provincial export and import taxes.

Early in the Imperial period, from 1837-38 to 1850, in view of the insufficient provincial revenues of many provinces, <sup>48</sup> the central government granted them special aids (**suprimentos**). The Imperial government also assumed some expenditures of a local nature, such as those related to lower courts and the Clergy. "The Imperial government thus posed as the magnanimous and understanding father" of the prodigal provinces, when actually it was the main beneficiary of a system that deprived the provinces of revenues which, in the view of many, belonged to them. It should not be surprising, therefore, that given their budgetary difficulties, some provinces resorted to "consumption taxes which in reality increased the taxation on imports, either coming from abroad and from other provinces." Since the 1840s, this expedient was adopted "at first infrequently and timidly" by Pernambuco and other provinces, mainly in the Northeast, with the understanding that there were constraints on provincial taxation of exports.

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<sup>&</sup>lt;sup>47</sup> Melo (1984), p. 250.

<sup>&</sup>lt;sup>48</sup> See Veiga Filho (1898), pp. 112-113, who lists the few local taxes left to the provinces and municipalities, the scope of which was further reduced when the central government adopted the "Tax on Industries and Professions" in 1867.

"In view of the favorable overall economic situation in the 1850s and 1860s, especially for cotton, provincial import taxes remained unnoticed, except for occasional consultations to the Council of State or in one or another **aviso** of the Ministry of Finance. Things would change during the recession in the 1870s [when the price of cotton fell abruptly] and complaints against [provincial import] taxes would increase, culminating with the 1882 episode [when, after a "strike" of the local merchant community, Pernambuco was forbidden by the Head of the Cabinet in Rio to levy import taxes]."

The imperial and provincial taxes levied in the Northeast declined 30% in the 1870s. Several provinces had serious problems to face their current expenses and were unsuccessful in floating internal loans. The decline in the international price of cotton and sugar prompted those provinces to reduce or eliminate export taxes on those products. Among other provinces, "Paraíba had to create a series of new [local] taxes, the heavy incidence of which on the free population of the interior created the climate of popular revolt which [would] explode in the revolt of the **Quebra-Quilos**." In such a context, interprovincial trade of both imported and Brazilian products was also taxed in the provinces of the Northeast, at rates varying from 3 to 30%, and creative denominations such as "disembarkation tax" were imagined to legitimize that practice.

In the early 1880s, in spite of lengthy discussions in the legislative chambers, the central government did not establish a new criterion of distribution, in favor of the provinces, of the general taxes raised by the Empire. Therefore, from 1885 to 1889, ignoring its previous firm statements as to their illegality, "the Imperial government closed its eyes, as it had done until 1882, and accepted provincial import taxes as a lesser evil". In the early 1880s, these unconstitutional import taxes corresponded to about 1/3 of the provincial revenues in Pernambuco and Alagoas, to slightly less in Rio Grande do Norte, to ¼ in Ceará and to slightly less than 1/5 in Bahia. <sup>49</sup>

<sup>&</sup>lt;sup>49</sup> Melo (1984) respectively pp. 249-250, 258-260 and 278-281. On p. 267, he notes that the coffee provinces did not impose consumption taxes.

Given those developments, the question remains as to what an extent the solvency of the central government was maintained at the cost of a fiscal imbalance of the provinces, through the persistent refusal of greater participation of the provinces in the revenues raised as general taxes by the Imperial government in the various regions.

The Imperial export tax after fluctuating between 5 and 7% in the 1850s and early 1860s, rose to 9% during the Paraguay War and returned to 7% in the mid-1870s.<sup>50</sup> Provincial export taxation was rather heavy in some provinces, reaching 13% on rubber in Pará. Export taxation by coffee-producing provinces was much lower, typically 4%,<sup>51</sup> but in 1888 provincial taxes added to the tax charged by the central government resulted in total export duties of 13%. In Rio Grande do Sul, in that same year, exports of meat and hides paid 4% to the provincial government and 9% to the central government.<sup>52</sup>

The following comments of the British secretary of legation referring to the decline of cotton exports of the Northeast in 1874 illustrate how the taxation of exports could hinder exports other than coffee: "this great reduction arises from prices realized leaving no margin to the planters, as more than half the value is absorbed in the expense of carriage, provincial duties and storage and export duty of 9 per cent." More than two decades later, also illustrating the combined negative impact of local taxation and Imperial and provincial export taxes, "a deputy for Pará complained [in 1888]...of the heavy export duties to which his constituents [were] subject, namely 9 per cent on the

<sup>&</sup>lt;sup>50</sup> The provincial export tax was often added to the imperial export tax. Thus, according to the British consul in Rio, in 1869, "the export duty on cotton amounts to 13 per cent and 40 réis...per arroba...at Rio de Janeiro; at Pernambuco 14 per cent and 20 réis per arroba; coffee pays 13 per cent and 40 réis per bag. Sugar pays 13 per cent plus 90 réis additional at Pernambuco. Minor articles also pay heavy export duties. These duties are calculated on the market prices of the respective articles at the port of shipment, so that the planter is also taxed 13 per cent on the cost of the conveyance of his product to the market." See Report by Mr. Consul Lennon Hunt on the Trade and Commerce of Rio de Janeiro during the Year 1869, in British Parliamentary Papers ( from now on quoted as PP), 1870, Vol. 64, p. 232. In the early decades of the Empire, export taxes were specific, that is defined as fixed sums in milréis per unit of weight or length, also differentiated per product and per province. For several examples, see Onody (1953), p. 62.

<sup>&</sup>lt;sup>51</sup> See Ridings (1994), p. 197.

<sup>&</sup>lt;sup>52</sup> Wyndham (1889), pp. 18-19 and 59.

<sup>&</sup>lt;sup>53</sup> See Report by Mr. Drummond on the Trade of Rio de Janeiro, PP 1875, Vol. 74, Part III, p. 205.

value of the rubber as a state tax, 13 per cent as a provincial tax, and 2 per cent as a municipal tax, making together 24 per cent of export tax on its value, besides the cost of packing, freight, insurance and commission."<sup>54</sup>

The characteristics of the Brazilian coffee export economy only assured that the income of coffee growers was relatively unaffected by increased import duties but these increased duties had quite a regressive effect on the income of the urban population which depended on the supply of imports. The effects of exchange rate devaluation which generally followed downturns in the world economy were partly absorbed by coffee growers. Devaluation involved an increase in costs of production denominated in domestic currency and thus a rise in world coffee prices in the long run. In the short run there was a weakening of world coffee prices as coffee stocks tended to be dumped in the market following devaluation. There was still on balance a significant increase in the income of coffee growers in domestic currency.<sup>55</sup>

While it is clear that the political role of the planters' class as a whole was absolutely predominant during the Empire, there were regional cleavages associated with different agricultural specialization and economic interests, notably between the Northeast (which produced sugar, cotton and tobacco) and the coffee regions. This issue became particularly clear when, after the interruption of the African slave trade, export of slaves from the Northeast to the coffee provinces increased considerably.

<sup>&</sup>lt;sup>54</sup> Wyndham (1889), p. 18. The same report contains the following information on export duties: "the state export duty on sugar, which produced  $\approx 80,000$  a year, has lately been abolished [1887], but 9 per cent is charged on india-rubber, cacao, Brazil nuts, hides, hair, spirits, tobacco, timber and Brazilwood, 7 per cent on coffee and 5 per cent on other things not enumerated. The export duties gave the State ≈ 885,400 during the first half of 1887; ≈ 561,900 in the first months of 1888, of which 60 per cent from coffee, 16 per cent from india-rubber and 4 per cent from tobacco. 5 per cent has for three years been charged over and above other export taxes to promote emancipation but Senator Christiano Ottoni stated on October 27, 1888, that not one slave had been emancipated with the money so received. In addition to this, the individual provinces raise considerable export duties on the identical articles which pay the State export duties; for instance, Santa Catarina is now raising export duties on Mandioca flour 6 per cent; prepared mate, sugar, coffee & c 4 per cent; beans, maize and tapioca 8 per cent; rice 10 per cent." Subterfuges were also used by some provinces to raise disguised import duties which, as the British diplomat recalls, were illegal. Examples included "200 réis per ton on sailing ships and steamers" entering the port of Sergipe and an import duty of 3 per cent established in Pernambuco in 1885 "on the officially-declared values of imports under the name of 'giro comercial'." Ibidem. <sup>55</sup> See Abreu and Bevilaqua (1996), passim.

Christie, the British Minister in Rio de Janeiro, in a report of 1862, gave emphasis to a speech of Senator Silveira da Motta in 1861 who mentioned the dangers of secession associated with the interprovincial slave trade.<sup>56</sup> After some tension, the issue was gradually solved through the imposition by the coffee provinces of prohibitively high taxes on the importation of slaves.

In general, however, the political class and "the deputies shared a common social background", converging interests and represented the landed interests which strongly opposed ideas such as a land tax.<sup>57</sup> A common objective of politicians was the patronage of local chiefs and control over positions of authority. As noted in a recent work, " even if the revenues from which local appointments were paid went first to the central government before returning, that would not disturb the local boss, whose power did not depend on a constituency politically unhappy with the level of taxation (which fell mainly on imports anyway). As long as he could name his clients to all the posts in the public service and there was no rival font of placement, he did not demand an increase in positions and thus an increase in revenue. Moreover, he and many of his clients were interested in such positions more because of the authority they conferred than because of the salaries they brought." Thus there does not seem to have been large scale emblezzlement of local revenues nor widespread corruption to the detriment of a majority of the population. <sup>59</sup>

The annual "net income" required for qualification to being a voter was relatively high, excluding a large part of the population and particularly the poor from direct participation in political affairs. This was not a particularly atypical situation in the 19th century. In 1881, with some 12 million inhabitants, Brazil had 150 thousand electors and

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<sup>&</sup>lt;sup>56</sup> See Christie to Lord Russell, Rio, sept. 30, 1862, in PP 1863, vol. 71, pp. 115-116. See also Lago (1988) pp. 345-347 on the speech of Silveira da Motta and for partial data on the interprovincial trade from 1850 to 1880.

<sup>&</sup>lt;sup>57</sup> A land tax was included in the 1843 project of a Land Law but was rejected when it was finally passed in 1850. It was adopted in 1880 by the Chamber of Deputies only to be rejected by the Senate. See Veiga Filho (1898), p. 99.

<sup>&</sup>lt;sup>58</sup> Graham (1990), p. 180.

<sup>&</sup>lt;sup>59</sup> There are however references to "more corruption than in any part of the world" in the Rio customs house in the late 1820s in Walsh (1830), vol. I, p. 447.

some 200 thousand in 1889. In 1848 France, with a population almost three times larger, had less than 250 thousand electors before the revolution in that year which established universal male suffrage and which resulted in 9 million voters.<sup>60</sup>

A rare manifestation of inconformity and protest of the free poor occurred in 1874-75 in the Northeast, the so-called revolt of the **Quebra-Quilos**, which occurred "when a new tax imposed on the foodstuffs that peasants sold on market day, their still present fear that the national census was designed to enslave free men of color, and the use by merchants of the newly adopted metric system to cheat them of their due sparked a major revolt that lasted several months."

A major exception to the general lack of emphasis on policies directed towards the free poor was the attention given by the Central government to the Northeast when a prolonged drought caused a public calamity after the mid-1870s. The number of casualties may have reached 200 thousand. Thus between 1877 and 1880 the government spent almost 74 thousand contos (of which 50 thousand in 1878-79) to alleviate the effects of the drought. (30 thousand contos were spent in Ceará alone). In that case the population of the country as a whole contributed to the relief of a region.<sup>62</sup>

As regards legislation towards the urban poor, another rare occurrence was the consideration by the imperial government of tax concessions to companies willing to construct "reasonably priced, sanitary worker housing in Rio de Janeiro". After detailed proposals for houses called **evaneas**, "the imperial government approved proposals... in the 1870s and 1880s, and granted concessions [but] no projects were completed during the empire."<sup>63</sup>

<sup>61</sup> See Graham (1990), p. 38 and pp. 103-105 on qualifications for voting.

<sup>&</sup>lt;sup>60</sup> Nogueira (1987), p. 37.

<sup>&</sup>lt;sup>62</sup> Figures from a table in the report of the Minister of Finance José Antonio Saraiva of 1880, reproduced in Bahia (1978) p. 265. According to a British Secretary of Legation, "during 1877 to 1879 tens of thousands of inhabitants died or disappeared [in Ceará] and ⋄ 6,000,000 was lost - i.e to say the public exchequer granted ⋄ 400,000 for their succour soon after the commencement of the calamity". See Wyndham (1989), p. 31.

<sup>&</sup>lt;sup>63</sup> See Hahner (1986) pp.132-133.

The government was more generous in giving subsidies, advantages and tax exemptions, especially after the 1840s, to manufacturing establishments of various types, as listed in reports of the Ministry of Finance, and which in the case of Mauá's Ponta de Areia large foundry and shipyard included both import tax exemptions and government orders. The importation of machinery during the Imperial period was often exempted of tax or subject to reduced rates.<sup>64</sup>

Table 4.2
Brazil: commodity export shares in total exports, 1850-59 to 1880-1889, %\*

	Coffee	Sugar	Cotton	Rubber	Total
1850-59	48.7	21.3	6.3	2.2	78.6
1860-69	45.9	12.3	17.7	3.1	79.0
1870-79	56.3	11.8	9.7	5.5	83.3
1880-89	60.5	10.6	4.4	7.6	83.1

\*10 year-average of yearly shares. 1850-51 to 1887-88: fiscal years.

Source: Computed from **Anuário Estatístico do Brasil**,1939-1940, p.1380.

It was internal and external warfare that defined the basic features of central government expenditure under the Brazilian Empire. First there were the hostilities related to independence in the early to mid-1820s. Then the Cisplatina wars in the late 1820s for control of what was to become Uruguay as a British-designed compromise with Argentina. Separatist movements trying to exploit the weakness of the central government led to civil war in the South in the 1830s and in the core of the economy in the Southeast in the early 1840s. Expenditures of the War and Navy Departments reached 65% of total expenditure in 1823, were in the region of 50% in the late 1820s and still higher in the late 1830s. They were never below 35% in the more peaceful twenty years from 1845. During the 1865-1870 Paraguay War such expenditures were back to 65% of the total (see table 4.3 below for the official Brazilian version of the "costs" of the war). It was only after 1870 that military expenditure fell to less than 20%

<sup>&</sup>lt;sup>64</sup> See Lago et alii (1979), especially pp. 7-18. For an extensive list of "factories" receiving government incentives and exemptions during the Imperial period, see Distrito federal (1908).

<sup>&</sup>lt;sup>65</sup> For data and details see Carreira (1980), especially pp. 627 and ff.

of total central government expenditure (see table 4.4 for a breakdown of central government expenditures).

The ratio between deficit and central government expenditure reflected such developments, peaking with military expenditure. It was 40% in the late 1820s and also in the late 1830s (see table 4.4). It exceeded 45% in the early 1840s and reached 60% during the Paraguay War. In the second half of the 1870s the succession of the financial crisis of 1875 and the already mentioned severe drought in the Northeast generally maintained the deficit above 20% of expenditure, reaching more than 35% in 1878-79.

Table 4.3 Brazil: Financing the Paraguay War, 1864-1872, in contos de réis\*

	Foreign	Domestic	Domestic	Paper Othe		Total
	loans	gold loans	paper loans	currency		
				emission		
1864-66	35219	0	15154	3017	0	53390
1866-67	0	0	36433	22677	2	59112
1867-68	0	0	22782	53911	7	76700
1868-69	0	27000	27288	17910	0	72198
1869-70	0	0	44031	5480	180	49691
1870-71	26522	0	26146	10220	700	63588
1871-72	0	0	21	0	1225	1246
Total	61741	27000	171855	113215	2114	375925

<sup>\*</sup>One conto de réis equals 1,000,000 of réis. The monetary standard was the milréis which was written 1\$000. One conto de réis was written 1:000\$000. The parity of 1846 was 27 pence per 1\$000.

Source: Carreira (1980), p.469.

Even in late Imperial years, central government expenditures in São Paulo, the core of the new coffee-producing region, were extremely low, less than 2% of total central government expenditure. Revenue raised in the province was more than 7% of total Imperial revenue but lower than in rubber-booming Pará, and in the decadent provinces of Bahia and Pernambuco. Important recipients of development-related resources distributed in the late 1880s included Pernambuco, Rio Grande do Sul and, to a lesser extent, Bahia. Military expenditures were concentrated in the Southern and

Western provinces along the Parana and Paraguay rivers: Rio Grande do Sul, Santa Catarina, Paraná and Mato Grosso.<sup>66</sup>

During the whole Empire the fact that the geographical destination of the expenditures of the General government did not coincide with the general revenues generated in the various regions, the so-called problem of provincial balances, was the object of keen discussion. In fact, in many states of the Northeast (and later also in Pará) the balances transferred to the Imperial government well exceeded the expenditures of the Imperial Government in those provinces. (One of the leaders of the Praeira Revolution in 1848 in Pernambuco, would list as one of the motives of the insurrection "to succeed that the money raised in the province would stay" in Pernambuco). Examining the Imperial budget of 1869-70, Tavares Bastos "concluded that of the 36,000 contos levied [as Imperial taxes by the central government in the Northeast and the North], only 1/3 had been the object of general expenditures in those regions, leaving a favorable balance of 24,000 contos. After deducting from that total the expenditures relating to interest and railways, subventions to shipping companies serving those northern regions, and the proportional quota of those provinces in the obligations of the central government, there was still a balance of 6,600 contos". 67

The question of the net balances of the North-Northeast was a reality in spite of the fact that the South, including the Corte (the Capital city of Rio and suburbs), contributed with 2/3 of the total General revenues and the North-Northeast with the remaining 1/3. It was not a question of which provinces generated more resources but rather of which transferred larger net balances. In the South, only the coffee provinces of São Paulo and Rio de Janeiro generated net balances. The South as a whole was a region representing permanent deficits to the Imperial Government since the general revenues

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<sup>&</sup>lt;sup>66</sup> Data for 1885-86 from Carreira (1980), volume II, p. 658-659.

<sup>&</sup>lt;sup>67</sup> Melo (1984), pp. 251-252. The author relies on calculations of Tavares Bastos and politicians, but those estimates are open to debate. According to national censuses, Brazil had 9.93 million inhabitants in 1872 and 14.33 million in 1890. The population of the **Norte** (North and Northeast) was respectively 4.97 million (50.1%) and 6.48 million (45.2%) in those same years.

raised by the central government in its provinces corresponded to only 1/3 of the general expenditures incurred in the region.

In fact, in several southern provinces the central government faced deficits, notably as a result of general expenditures with European immigration and of military expenditures. There was undoubtably a transfer of resources from some provinces to others, associated with the strong centralization of taxes and expenditures by the Imperial Government, but the actual "balance" of specific provinces is very difficult to determine.

The Secretary of the Empire was responsible for the Imperial household as well as for expenditures by the legislative power, transfers to the Church, health, education and eventual relief expenditure such as those for the alleviation of the effects of the droughts in the late 1870s. This explains the high share of other secretaries of state in table 4.4.

Expenditures by the Ministry of Agriculture were concentrated in the payment of guarantees to foreign investors in Brazil. Expenditure in government railways, harbours, subsidies to steamship companies and urban infrastructure also increased significantly in the last Imperial years. In fact, the Secretary of Agriculture was responsible for expenditures related to transportation systems, harbours and telegraphs, and also for immigration. Immigration subsidies in the late 1880s amounted to more than 20% of the Ministry of Agriculture budget. Contracts guaranteeing the remuneration of foreign direct investment were very common in Imperial Brazil, especially so in connection with the development of the railway system and of the central sugar mills in the Northeast. Frequently such contracts entailed both Imperial and provincial guarantees. All such central government guarantees were redeemed in the early 1900s. There were in principle no financial losses to guarantee holders which were in fact able to reap the differential between "risk-free" interest rates on British consols and the high interest rate

guaranteed by such contracts<sup>68</sup> The total failure of sugar central mills in the 1880s in spite of guarantees was due to one of the most famous episodes of entrepreneurial incompetence rather than to the government stance concerning guarantees.<sup>69</sup>

Incompetence cases could also be found in railway management. An interesting counterexample to the idea that guaranteed contracts might be totally "risk-free" is an episode mentioned in a British consular report. It concerns the Natal and Nova Cruz railway in Rio Grande do Norte, whose operating deficit (working expenses) totalling ≈ 74,600 from 1881 to 1887 spurred a legal action against the company in London for the recovery of those losses. The capital being <a> 549,600</a> and the guaranteed interest 7%, "in consequence of this guarantee the State paid up to the end of 1887 a total of ≈ 343,227." While the Brazilian Minister of Finance sympathised with the idea that "the shareholders gave their money in the understanding that they were to get 7% whereas they receive nothing of the sort...The Minister of Agriculture at once replied that they had no reason whatever in this complaint and that they ought to have found out before the line was made that what it could produce independently of the government guarantee." The conclusion of the British diplomat is surprisingly favorable to Brazilian interests: "British investors in these concerns have lost sight of the fact that investments cannot be expected to combine complete security with 7%. If they want complete security, anyone doing business in Brazil can tell them of railway debentures here which will be always sure to pay a small percentage in gold." Thus it is clearly debatable if in this episode the property rights of the shareholders were or not respected...What also emerges is the credibility of the Brazilian railway debentures.<sup>70</sup>

<sup>&</sup>lt;sup>68</sup> See Graham (1968), pp. 149-159 and Rodrigues (1902). Monteiro (1993) has shown the shortcomings of the negotiations which led to the redemption of such guarantees.

<sup>&</sup>lt;sup>69</sup> See Eisenberg (1974), chapter 5.

<sup>&</sup>lt;sup>70</sup> See Wyndham (1889), pp. 53-54. He added that "a representative of certain notable German capitalists had recently offered to buy up or redeem the railways on which 7 per cent and 6 per cent were guaranteed, on the sole condition that the State would guarantee 5 per cent to be actually received by the shareholders, even should the lines not pay working expenses. This makes the question clear as his Excellency [the late Minister of Finance] did not accept the offer of those German capitalists."

Table 4.4
Brazil: Deficit as a share of total expenditure and structure of expenditure by selected secretaries in total expenditure,1833-1888,%\*

selected secretaries in total expenditure, 1833-1888, %*							
	Deficit as a	War and	Finance	Agriculture	Other		
	share of total	Navy					
	expenditure*						
	*						
1833-34	-8.8	41.1	47.1	0	11.8		
1834-35	-14.8	36.5	49.1	0	14.4		
1835-36	1.4	33.3	32.4	0	34.2		
1836-37	3.6	34.9	40.0	0	25.1		
1837-38	33.0	42.4	44.2	0	13.4		
1838-39	17.4	44.5	42.1	0	13.4		
1839-40	36.1	55.6	32.1	0	12.3		
1840-41	28.4	48.6	35.4	0	16.0		
1841-42	40.6	48.9	36.7	0	14.4		
1842-43	46.8	46.0	37.0	0	17.0		
1843-44	17.7	42.0	40.2	0	17.9		
1844-45	16.1	41.0	39.1	0	20.0		
1845-46	9.5	40.4	38.8	0	20.8		
1846-47	7.5	40.0	38.3	0	21.7		
1847-48	17.6	38.7	39.6	0	21.8		
1848-49	7.5	41.6	37.7	0	20.7		
1849-50	2.6	39.3	37.1	0	23.6		
1850-51	1.6	42.9	35.6	0	21.5		
1851-52	16.3	47.8	32.7	0	19.5		
1852-53	-15.0	35.1	31.6	0	33.3		
1853-54	4.7	39.9	36.3	0	23.9		
1854-55	4.5	n.a.	n.a.	0	n.a.		
1855-56	4.0	40.3	31.1	0	28.6		
1856-57	-21.8	40.0	33.7	0	26.3		
1857-58	3.9	47.7	25.9	0	26.4		
1858-59	11.0	41.9	28.5	0	29.5		
1859-60	16.7	42.3	28.1	0	29.7		
1860-61	4.4	37.1	30.9	0	32.1		
1861-62	1.1	35.6	35.0	14.3	15.1		
1862-63	14.7	34.7	37.3	13.3	14.8		
1863-64	3.0	37.5	34.7	13.7	14.1		
1864-65	31.6	48.7	24.0	12.6	14.6		
1865-66	52.0	65.9	18.4	7.0	8.7		
1866-67	46.4	59.6	23.6	9.5	7.3		
1867-68	57.1	59.5	27.1	7.5	5.8		
1868-69	42.0	53.9	32.4	8.5	5.2		

1869-70	33.0	54.3	30.2	9.7	5.8
1870-71	2.3	32.0	40.2	18.3	9.4
1871-72	-3.5	22.3	39.3	12.8	5.6
1872-73	8.0	34.5	34.6	20.8	10.1
1873-74	13.6	32.4	35.0	21.5	11.1
1874-75	15.4	32.1	35.0	21.1	11.9
1875-76	18.4	21.1	35.5	14.5	29.0
1876-77	25.6	26.3	35.8	24.6	13.3
1877-78	32.8	18.8	33.7	27.8	19.7
1878-79	35.8	13.2	29.6	26.2	31.0
1879-80	19.6	16.1	41.2	27.8	14.9
1880-81	5.3	17.9	43.8	26.6	11.7
1881-82	5.4	41.9	41.2	26.8	11.7
1882-83	15.3	20.6	40.2	28.3	10.9
1883-84	12.8	20.0	38.2	31.0	10.7
1884-85	21.7	21.5	51.5	40.4	11.2
1885-86	15.2	20.6	51.1	33.1	11.1
1886-87	2.9	16.8	42.5	29.8	10.9
1888	-20.7	18.4	44.5	24.3	12.8

<sup>\*</sup>Other ministries were Empire, Justice and Foreign Affairs.

The Ministry of Finance budget included expenditures on pensions and retirement payments and, most important of all, service on the domestic and foreign debt. In the initial independence years public debt was mainly foreign debt (see table 4.5) but the share of foreign debt in total debt fell continuously to about 50% in the 1850s and early 1860s. There was a recovery during the Paraguay war but the declining trend was resumed afterwards and by the early 1880s the share was below 30%. It returned to a level near 40% in the late 1880s as big foreign loans were floated taking advantage of Brazil's extremely favourable credit ratings. The central government faced difficulties in placing public loans denominated in domestic currency as inflation accelerated in the 1850s and 1860s. It resorted to internal loans whose service was indexed to the foreign-exchange rate. Gold internal loans were floated in 1869 and 1881. Both interest and amortization were payable in gold or in domestic currency at the parity exchange rate of 27 pence per milréis.<sup>71</sup> This increased the share of public debt indexed to the foreign

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<sup>\*\*</sup>Negative signs mean superavits.

<sup>&</sup>lt;sup>71</sup> See Pacheco (1979), pp. 145-6, for a description of the conditions attached to the 1879 internal loan.

exchange rate by a further 5% to 15% depending on the year (see table 4.5). Debt-export ratios reflect the economic vicissitudes already commented upon. It is once again important to note that an initially high foreign (and internal gold) debt-export ratio was gradually reduced but rose again towards the end of the Empire. Trends of the ratio of debt service to total expenditure followed the pattern of debt-export ratios. Initially high values in the 1820s, of the order of nearly 25%, fell gradually to reach 16-17% in the 1850s and 1860s and still remained below 20% in the 1870s, only to rise above 30% in the late years of the Empire (see table 4.6).

Incomplete and fragmentary data indicate that the provincial funded and floating debt in the mid 1880s was not very important: about 7% of total (foreign and domestic) central government debt. According to a British consular report, in 1887 the funded debt of the provinces was 4,174,146 and the floating debt 1,951,674, totalling 46,125,820, "though according to another almost equally good, though not as in the first case, parliamentary authority, the total is 5,299,202." These figures were compared to a central government debt of 72,097,230 on December 31st, 1888 including 28,598,400 of external debt and 43,498,830 of funded internal debt, (figures which are somewhat different from those presented in table 4.5 below) and to a "total debt" of the central government estimated by the Minister of Agriculture in October, 1888 at 90 million. Still according to the same report, "it was in the latter part of 1888 that the provinces for the first time began to issue foreign loans, notably São Paulo, Bahia and Pernambuco."

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<sup>&</sup>lt;sup>72</sup> See Carreira (1980) for the provincial debt in 1885.

<sup>&</sup>lt;sup>73</sup> See Wyndham (1889), p. 9. He also notes that answering to a senator's question "whether constitutionally they had the right to do so ... the Prime Minister answered that 'though caution was needed, yet such necessity did not lessen the right of the provinces to contract within or without the empire such loans as they might desire'." Only in the republican period would the external debt of the states become important. According to Veiga Filho (1898), p. 269, the São Paulo 1888 loan amounted to ≈ 714,000 and the Bahia 1888 loan to ≈ 800,000.

Table 4.5 Brazil: Internal and external debt, 1823-1889

external debt   debt   (in   4000)*   w   w   w   w   w   w   w   w   w	DIUZII.		nd external		3-1007	T	1	1	1	
debt (in (in w)1000)*		Imperial	Imperial	Imperial	Average	Share of	Share of	Total	Debt-	Exchange
Cin   Cin		external	internal	debt	exchange	external	exchange	exports	export	rate
Cin   Cin		debt	debt	(in	rate	debt in	rate-	(in	ratio (%)	indexed
1824   1333   n.a.   n.a.   n.a.   48.2   n.a.   n.a.   1825   5086   n.a.   n.a.   n.a.   51.9   n.a.   n.a.   1825   5086   n.a.   n.a.   n.a.   48.1   n.a.   n.a.   1825   4976   n.a.   n.a.   n.a.   48.1   n.a.   n.a.   1827   4866   735   5601   35.2   86.9   86.9   3662   1.53   1.33     1828   4806   1121   5927   31.1   81.1   81.1   81.1   4142   1.43   1.16     (be)				,		total			` /	
1824   1333   n.a.   n.a.   n.a.   48.2   n.a.   n.a.   3851   n.a.   n.a.   1825   5086   n.a.   n.a.   n.a.   51.9   n.a.   n.a.   1826   4976   n.a.   n.a.   n.a.   48.1   n.a.   n.a.   n.a.   3351   n.a.   n.a.   1827   4866   735   5601   35.2   86.9   86.9   3662   1.53   1.33   1828   4806   1121   5927   31.1   81.1   81.1   4142   1.43   1.16   (Je)   (		,	*	11000)						
1824		<b>-4</b> 1000)	<del>-4</del> 1000)		mm reis)					
1824						(%)				
1825   5086   n.a.   n.a.   51.9   n.a.   n.a.   4622   n.a.   n.a.   1826   4976   n.a.   n.a.   n.a.   48.1   n.a.   n.a.   3319   n.a.   n.a.   n.a.   1827   4866   735   5001   35.2   86.9   86.9   3662   1.53   1.33   1828   4806   1121   5927   31.1   81.1   81.1   4142   1.43   1.16   (Je)   (							(%)			(%)
1825   5086   n.a.   n.a.   51.9   n.a.   n.a.   4622   n.a.   n.a.   1826   4976   n.a.   n.a.   n.a.   48.1   n.a.   n.a.   3319   n.a.   n.a.   n.a.   1827   4866   735   5001   35.2   86.9   86.9   3662   1.53   1.33   1828   4806   1121   5927   31.1   81.1   81.1   4142   1.43   1.16   (Je)   (										
1826			n.a.	n.a.		n.a.	n.a.		n.a.	n.a.
1827	1825	5086	n.a.	n.a.	51.9	n.a.	n.a.	4622	n.a.	n.a.
1828	1826	4976	n.a.	n.a.	48.1	n.a.	n.a.	3319	n.a.	n.a.
1828	1827	4866	735	5601	35.2	86.9	86.9	3662	1.53	1.33
(1c)							81.1			
1829										
(Je)		5519	1245	6764	24.6	81.6	81.6	3441	1 97	1 60
1830		3317	1243	0704	24.0	01.0	01.0	3441	1.77	1.00
(Je)		5222	1224	6656	22.0	90 1	90.1	2249	1.00	1.50
1831		3332	1324	0030	22.8	80.1	80.1	3348	1.99	1.59
Cle   1832		<b>7</b> 222	1711	507.5	27.0			2252	2.04	1.50
1832		5332	1544	6876	25.0	77.5	77.5	3373	2.04	1.58
(Ap)         (Ba)         5332         2795         8127         37.4         65.6         65.6         5632         1.44         0.95           1834         5332         2972         8304         38.7         64.1         64.1         5328         1.56         1.00           1835         5332         3253         8585         39.2         62.1         62.1         6776         1.27         0.79           1836         5367         3134         8501         38.4         63.1         63.1         5476         1.55         0.98           1837         5257         2470         7727         29.6         68.0         68.0         4129         1.87         1.27           1838         5207         2549         7756         28.1         67.1         67.1         4863         1.59         1.07           (Je)         1849         5580         3526         9106         31.6         61.3         61.3         5688         1.60         0.98           (Je)         1841         5580         3432         9012         31.0         61.9         61.9         5384         1.67         1.04           (Je)         1841         5										
1833	1832	5332	2498	7830	38.1	68.1	68.1	3263	2.40	1.63
(Je)   1834   5332   2972   8304   38.7   64.1   64.1   5328   1.56   1.00     1835   5332   3253   8585   39.2   62.1   62.1   6776   1.27   0.79     1836   5367   3134   8501   38.4   63.1   63.1   5476   1.55   0.98     1837   5257   2470   7727   29.6   68.0   68.0   4129   1.87   1.27     1838   5207   2549   7756   28.1   67.1   67.1   4863   1.59   1.07     1839   5580   3526   9106   31.6   61.3   61.3   5688   1.60   0.98     (Je)	(Ap)									
1834	1833	5332	2795	8127	37.4	65.6	65.6	5632	1.44	0.95
1834	(Je)									
(Je)   1835   5332   3253   8585   39.2   62.1   62.1   6776   1.27   0.79     1836   5367   3134   8501   38.4   63.1   63.1   5476   1.55   0.98     1837   5257   2470   7727   29.6   68.0   68.0   4129   1.87   1.27     1838   5207   2549   7756   28.1   67.1   67.1   4863   1.59   1.07     1839   5580   3526   9106   31.6   61.3   61.3   5688   1.60   0.98     (Je)   1840   5580   3432   9012   31.0   61.9   61.9   5384   1.67   1.04     1841   5580   3739   9319   30.0   59.9   59.9   4936   1.89   1.13     1842   5580   4111   9691   26.8   57.6   57.6   4584   2.11   1.22     (D)   1843   6187   4256   10443   25.8   59.2   59.2   4708   2.22   1.31     (D)   1844   6187   4455   10642   25.2   58.1   58.1   4941   2.15   1.25     1845   6187   4828   11015   25.4   56.2   56.2   5685   1.94   1.09     1846   6187   5396   11583   26.9   53.4   53.4   5885   1.97   1.05     1847   6187   5643   11830   28.0   52.3   52.3   6760   1.75   0.92     1848   6187   5643   11830   28.0   52.3   52.3   6760   1.75   0.92     1849   6187   5527   11714   25.9   52.8   59.2   8083   1.54   0.76     1850   6183   6283   12466   28.7   49.6   49.6   8121   1.54   0.76     1850   6183   6283   12466   28.7   49.6   49.6   8121   1.54   0.76     1851   6010   6456   12466   29.1   48.2   48.2   8083   1.54   0.74		5332	2972	8304	38.7	64.1	64.1	5328	1.56	1.00
1835   5332   3253   8585   39.2   62.1   62.1   6776   1.27   0.79     1836   5367   3134   8501   38.4   63.1   63.1   5476   1.55   0.98     1837   5257   2470   7727   29.6   68.0   68.0   4129   1.87   1.27     1838   5207   2549   7756   28.1   67.1   67.1   4863   1.59   1.07     1839   5580   3526   9106   31.6   61.3   61.3   5688   1.60   0.98     1840   5580   3432   9012   31.0   61.9   61.9   5384   1.67   1.04     1841   5580   3739   9319   30.0   59.9   59.9   4936   1.89   1.13     1842   5580   4111   9691   26.8   57.6   57.6   4584   2.11   1.22     100   1843   6187   4256   10443   25.8   59.2   59.2   4708   2.22   1.31     1844   6187   4455   10642   25.2   58.1   58.1   4941   2.15   1.25     1845   6187   4828   11015   25.4   56.2   56.2   5685   1.94   1.09     1846   6187   5396   11583   26.9   53.4   53.4   5885   1.97   1.05     1847   6187   5643   11830   28.0   52.3   52.3   6760   1.75   0.92     1848   6187   5061   11248   25.0   55.0   55.0   5865   1.92   1.06     1849   6187   5527   11714   25.9   52.8   52.8   5932   1.97   1.04     (S)										
1836	_ ` _	5332	3253	8585	39.2	62.1	62.1	6776	1.27	0.79
1837         5257         2470         7727         29.6         68.0         68.0         4129         1.87         1.27           1838         5207         2549         7756         28.1         67.1         67.1         4863         1.59         1.07           1839         5580         3526         9106         31.6         61.3         61.3         5688         1.60         0.98           (Je)         1840         5580         3432         9012         31.0         61.9         61.9         5384         1.67         1.04           (Je)         1841         5580         3739         9319         30.0         59.9         59.9         4936         1.89         1.13           1842         5580         4111         9691         26.8         57.6         57.6         4584         2.11         1.22           (D)         1843         6187         4256         10443         25.8         59.2         59.2         4708         2.22         1.31           (D)         1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6										
1838 (Je)         5207         2549         7756         28.1         67.1         67.1         4863         1.59         1.07           1839 (Je)         5580         3526         9106         31.6         61.3         61.3         5688         1.60         0.98           1840 (Je)         5580         3432         9012         31.0         61.9         61.9         5384         1.67         1.04           1841 5580         3739         9319         30.0         59.9         59.9         4936         1.89         1.13           1842 5580         4111         9691         26.8         57.6         57.6         4584         2.11         1.22           (D)         1843         6187         4256         10443         25.8         59.2         59.2         4708         2.22         1.31           (D)         1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583										
(Je)         3526         9106         31.6         61.3         61.3         5688         1.60         0.98           1840         5580         3432         9012         31.0         61.9         61.9         5384         1.67         1.04           1841         5580         3739         9319         30.0         59.9         59.9         4936         1.89         1.13           1842         5580         4111         9691         26.8         57.6         57.6         4584         2.11         1.22           (D)         1843         6187         4256         10443         25.8         59.2         59.2         4708         2.22         1.31           (D)         1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>										
1839 (Je)         5580         3526         9106         31.6         61.3         61.3         5688         1.60         0.98           1840 (Je)         5580         3432         9012         31.0         61.9         61.9         5384         1.67         1.04           1841 (Je)         5580         3739         9319         30.0         59.9         59.9         4936         1.89         1.13           1842 (D)         5580         4111         9691         26.8         57.6         57.6         4584         2.11         1.22           (D)         1843         6187         4256         10443         25.8         59.2         59.2         4708         2.22         1.31           (D)         1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         56		3207	2549	//36	28.1	07.1	07.1	4803	1.39	1.07
(Je)         3432         9012         31.0         61.9         61.9         5384         1.67         1.04           1841         5580         3739         9319         30.0         59.9         59.9         4936         1.89         1.13           1842         5580         4111         9691         26.8         57.6         57.6         4584         2.11         1.22           (D)         1843         6187         4256         10443         25.8         59.2         59.2         4708         2.22         1.31           (D)         1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248         <				0.1.0.1				<b>7</b> 100		0.00
1840 (Je)         5580         3432         9012         31.0         61.9         61.9         5384         1.67         1.04           1841         5580         3739         9319         30.0         59.9         59.9         4936         1.89         1.13           1842         5580         4111         9691         26.8         57.6         57.6         4584         2.11         1.22           (D)         1843         6187         4256         10443         25.8         59.2         59.2         4708         2.22         1.31           1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248		5580	3526	9106	31.6	61.3	61.3	5688	1.60	0.98
(Je)         1841         5580         3739         9319         30.0         59.9         59.9         4936         1.89         1.13           1842         5580         4111         9691         26.8         57.6         57.6         4584         2.11         1.22           (D)         1843         6187         4256         10443         25.8         59.2         59.2         4708         2.22         1.31           (D)         1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248         25.0         55.0         5865         1.92         1.06           1849         6187         5527         <										
1841         5580         3739         9319         30.0         59.9         59.9         4936         1.89         1.13           1842         5580         4111         9691         26.8         57.6         57.6         4584         2.11         1.22           (D)         1843         6187         4256         10443         25.8         59.2         59.2         4708         2.22         1.31           (D)         1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248         25.0         55.0         55.0         5865         1.92         1.06           1849         6187         5527         <		5580	3432	9012	31.0	61.9	61.9	5384	1.67	1.04
1842         5580         4111         9691         26.8         57.6         57.6         4584         2.11         1.22           (D)         1843         6187         4256         10443         25.8         59.2         59.2         4708         2.22         1.31           (D)         1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248         25.0         55.0         55.0         5865         1.92         1.06           1849         6187         5527         11714         25.9         52.8         52.8         5932         1.97         1.04           (S)         1850         6183         <										
1842       5580       4111       9691       26.8       57.6       57.6       4584       2.11       1.22         1843       6187       4256       10443       25.8       59.2       59.2       4708       2.22       1.31         (D)       1844       6187       4455       10642       25.2       58.1       58.1       4941       2.15       1.25         1845       6187       4828       11015       25.4       56.2       56.2       5685       1.94       1.09         1846       6187       5396       11583       26.9       53.4       53.4       5885       1.97       1.05         1847       6187       5643       11830       28.0       52.3       52.3       6760       1.75       0.92         1848       6187       5061       11248       25.0       55.0       55.0       5865       1.92       1.06         1849       6187       5527       11714       25.9       52.8       52.8       5932       1.97       1.04         (S)       1850       6183       6283       12466       28.7       49.6       49.6       8121       1.54       0.74 <t< td=""><td>1841</td><td>5580</td><td>3739</td><td>9319</td><td>30.0</td><td>59.9</td><td>59.9</td><td>4936</td><td>1.89</td><td>1.13</td></t<>	1841	5580	3739	9319	30.0	59.9	59.9	4936	1.89	1.13
(D)         4256         10443         25.8         59.2         59.2         4708         2.22         1.31           (D)         1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248         25.0         55.0         55.0         5865         1.92         1.06           1849         6187         5527         11714         25.9         52.8         52.8         5932         1.97         1.04           (S)         1850         6183         6283         12466         28.7         49.6         49.6         8121         1.54         0.76           1851         6010         6456         12466										
1843         6187         4256         10443         25.8         59.2         59.2         4708         2.22         1.31           1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248         25.0         55.0         55.0         5865         1.92         1.06           1849         6187         5527         11714         25.9         52.8         52.8         5932         1.97         1.04           (S)         1850         6183         6283         12466         28.7         49.6         49.6         8121         1.54         0.76           1851         6010         6456         12466										
(D)         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1844         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248         25.0         55.0         55.0         5865         1.92         1.06           1849         6187         5527         11714         25.9         52.8         52.8         5932         1.97         1.04           (S)         1850         6183         6283         12466         28.7         49.6         49.6         8121         1.54         0.76           1851         6010         6456         12466         29.1         48.2         48.2         8083         1.54         0.74		6187	4256	10443	25.8	59.2	59.2	4708	2.22	1.31
1844         6187         4455         10642         25.2         58.1         58.1         4941         2.15         1.25           1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248         25.0         55.0         55.0         5865         1.92         1.06           1849         6187         5527         11714         25.9         52.8         52.8         5932         1.97         1.04           (S)         1850         6183         6283         12466         28.7         49.6         49.6         8121         1.54         0.76           1851         6010         6456         12466         29.1         48.2         48.2         8083         1.54         0.74		0107	.200		20.0	27.2		., 50		1.01
1845         6187         4828         11015         25.4         56.2         56.2         5685         1.94         1.09           1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248         25.0         55.0         55.0         5865         1.92         1.06           1849         6187         5527         11714         25.9         52.8         52.8         5932         1.97         1.04           (S)         1850         6183         6283         12466         28.7         49.6         49.6         8121         1.54         0.76           1851         6010         6456         12466         29.1         48.2         48.2         8083         1.54         0.74	` /	6187	4455	10642	25.2	58 1	58 1	4941	2 15	1 25
1846         6187         5396         11583         26.9         53.4         53.4         5885         1.97         1.05           1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248         25.0         55.0         55.0         5865         1.92         1.06           1849         6187         5527         11714         25.9         52.8         52.8         5932         1.97         1.04           (S)         1850         6183         6283         12466         28.7         49.6         49.6         8121         1.54         0.76           1851         6010         6456         12466         29.1         48.2         48.2         8083         1.54         0.74										
1847         6187         5643         11830         28.0         52.3         52.3         6760         1.75         0.92           1848         6187         5061         11248         25.0         55.0         55.0         5865         1.92         1.06           1849         6187         5527         11714         25.9         52.8         52.8         5932         1.97         1.04           (S)         1850         6183         6283         12466         28.7         49.6         49.6         8121         1.54         0.76           1851         6010         6456         12466         29.1         48.2         48.2         8083         1.54         0.74										
1848         6187         5061         11248         25.0         55.0         55.0         5865         1.92         1.06           1849         6187         5527         11714         25.9         52.8         52.8         5932         1.97         1.04           (S)         1850         6183         6283         12466         28.7         49.6         49.6         8121         1.54         0.76           1851         6010         6456         12466         29.1         48.2         48.2         8083         1.54         0.74										
1849     6187     5527     11714     25.9     52.8     52.8     5932     1.97     1.04       (S)     1850     6183     6283     12466     28.7     49.6     49.6     8121     1.54     0.76       1851     6010     6456     12466     29.1     48.2     48.2     8083     1.54     0.74										
(S)         6183         6283         12466         28.7         49.6         49.6         8121         1.54         0.76           1851         6010         6456         12466         29.1         48.2         48.2         8083         1.54         0.74										
1850         6183         6283         12466         28.7         49.6         49.6         8121         1.54         0.76           1851         6010         6456         12466         29.1         48.2         48.2         8083         1.54         0.74		6187	5527	11714	25.9	52.8	52.8	5932	1.97	1.04
1851 6010 6456 12466 29.1 48.2 48.2 8083 1.54 0.74	(S)									
	1850	6183	6283	12466	28.7	49.6	49.6	8121	1.54	0.76
	1851	6010	6456	12466	29.1	48.2	48.2	8083	1.54	0.74
	1852	6979	6571	13550	27.4	51.5	51.5	8418	1.61	0.83

	1			1					
(Ap)									
1853	5872	6827	12699	28.5	46.2	46.2	9121	1.39	0.64
1854	5824	6644	12468	27.6	46.7	46.7	10439	1.19	0.56
(D)									
1855	5636	6630	12266	27.6	45.9	45.9	10841	1.13	0.52
(D)	7.402		10101	27.	47.0	47.0	10170	0.02	0.42
1856	5493	6631	12124	27.6	45.3	45.3	13150	0.92	0.42
(D)	5245	6405	11750	26.6	45.5	45.5	10660	1.10	0.50
1857	5345	6405	11750	26.6	45.5	45.5	10669	1.10	0.50
(D)	6719	6151	12970	25.6	52.2	52.2	11372	1.13	0.59
1858 (D)	6/19	0131	12870	23.0	32.2	32.2	11372	1.13	0.39
1859	6484	6031	12515	25.1	51.8	51.8	11793	1.06	0.55
(D)	0464	0031	12313	23.1	31.0	31.0	11793	1.00	0.55
1861	7655	7254	14909	25.8	51.3	51.3	13241	1.13	0.58
1861	7432	7308	14740	25.6	50.4	50.4	12857	1.15	0.58
(D)	7432	7500	14740	23.0	30.4	30.4	12037	1.13	0.50
1862	7205	7636	14841	26.3	48.5	48.5	13424	1.11	0.54
(D)	7203	7030	11011	20.3	10.5	10.5	13 12 1	1.11	0.5 1
1863	10820	8313	19133	27.2	56.5	56.5	14892	1.28	0.73
1864	7947	8558	16505	26.7	48.2	48.2	15733	1.05	0.51
1865	14735	8373	23108	25.0	63.8	63.8	16370	1.41	0.90
1866	14417	9138	23555	24.2	61.2	61.2	15786	1.49	0.91
1867	14069	9949	24018	22.4	58.6	58.6	17326	1.39	0.81
1868	13697	8869	22566	17.0	60.7	60.7	14351	1.57	0.95
1869	13064	15999	29063	18.8	45.0	56.5	15453	1.88	1.06
1870	12721	22123	34844	22.1	36.5	46.1	15439	2.26	1.04
1871	15826	28384	44210	24.0	35.8	43.3	19089	2.32	1.00
1872	15463	29724	45187	25.0	34.2	41.5	22392	2.02	0.84
1873	15053	30801	45854	26.1	32.8	39.9	20620	2.22	0.89
1874	14630	30674	45304	25.8	32.3	39.3	22392	2.02	0.80
1875	19488	32129	51617	27.2	37.8	43.8	20820	2.48	1.09
1876	19037	30851	49888	25.3	38.2	44.3	20573	2.42	1.07
(Oc)									
1877	18501	30889	49390	24.6	37.5	43.0	19063	2.59	1.11
(Ap)									
1878	17929	30224	48153	22.3	37.2	43.3	19508	2.47	1.07
(Oc)									
1879	17154	32649	49803	21.4	34.4	40.3	19789	2.52	1.01
1880	16554	33188	49742	22.1	33.3	38.7	21249	2.34	0.91
1881	15871	38239	54110	21.9	29.3	44.1	19138	2.83	1.25
(S)									
1882	15002	37204	52206	21.2	28.7	44.1	17378	3.00	1.32
1883	19036	37654	56690	21.6	33.6	47.5	19493	2.91	1.38
1884	18420	36124	54544	20.7	33.8	47.7	19504	2.80	1.33
1885	17827	32942	50769	18.6	35.1	50.0	15110	3.36	1.68
1886	23554	36888	60442	18.7	39.0	51.0	20502	2.95	1.50
(Ap)	220.72	10000	450.50		25.2	4	22.12.5	2.70	
1887	22952	42298	65250	22.4	35.2	45.3	23406	2.79	1.26
	205.00	A C 4 1 7	74000	25.2	20.1	4 6 7	21714	2.45	1 /1
1888	28568	46415	74983	25.2	38.1	46.5	21714	3.45	1.61
1889	30351	48023	78374	26.4	38.7	46.4	28552	2.74	1.27

Source: internal debt data from Levy (1995).

\* Calendar year. \*\* From 1833-1834 to 1886-1887 fiscal year starting July 1st.

\*\*\* Doubled second semester exports.

Table 4.6 Brazil: Public debt service, 1824-1888

DIAZII. I (		rvice, 1824-				
	Quotation	Foreign	Internal	Total	Share of	
	5% loans	debt	debt	debt	service in	
		service	service	service	total	
		(in ≈1000)	(in <b>≈</b> 1000)	(in ≈1000)	expenditure (%)	
1024	00		,		` /	
1824	98	22	n.a.	n.a.	n.a.	
1825	85	119	n.a.	n.a.	n.a.	
1826	59	303	n.a.	n.a.	n.a.	
1827	60	402	52	454	26.1	
1828	64	294	80	374	20.8	
1829	73	307	96	403	21.6	
1830	55	432	98	530	28.2	
1831	44	267	108	375	n.a.	
1832	48	267	141	408	n.a.	
1833	67	267	210	477	26.7	
1834	79	267	230	497	23.8	
1835	84	267	322	589	25.1	
1836	84	291	262	553	24.7	
1837	74	315	245	560	24.0	
1838	77	312	199	511	24.1	
1839	71	316	202	518	15.7	
1840	71	279	244	523	17.8	
1841	64	279	247	526	15.3	
1842	71	279	259	538	16.5	
1843	73	435	253	688	24.7	
1844	90	309	270	579	21.5	
1845	81	309	286	595	22.9	
1846	88	309	308	617	21.8	
1847	81	309	327	636	21.5	
1848	75	309	329	638	21.7	
1849	88	309	327	636	20.4	
1850	88	314	346	660	16.6	
1851	95	461	381	842	16.2	
1852	103	382	408	790	21.8	
1853	98	1410	396	1806	42.0	
1854	99	328	402	730	16.4	

F	1				
1855	100	445	395	840	18.2
1856	101	396	395	791	17.1
1857	99	393	382	775	13.5
1858	102	432	367	799	14.2
1859	100	963	360	1323	24.1
1860	99	526	432	958	17.0
1861	99	552	436	988	17.5
1862	101	548	456	1004	16.1
1863	100	579	484	1063	16.6
1864	101	2911	518	3429	36.9
1865	74	616	548	1164	9.2
1866	74	977	559	1536	12.6
1867	75	997	631	1628	10.5
1868	79	1001	658	1659	15.5
1869	88	1233	832	2065	18.6
1870	92	929	1196	2125	23.1
1871	97	1070	1634	2704	26.6
1872	97	1088	1784	2872	22.6
1873	98	1114	1857	2971	22.5
1874	100	1107	1929	3036	22.5
1875	98	1357	1935	3292	22.9
1876	94	1357	2090	3447	24.0
1877	93	1411	1854	3265	21.1
1878	92	1446	2082	3528	20.9
1879	95	1532	1976	3508	26.2
1880	98	1382	2307	3689	28.9
1881	101	1426	2589	4015	31.5
1882	101	1546	2099	3645	27.0
1883	100	1452	2150	3602	26.0
1884	98	1481	2382	3863	28.3
1885	99	1431	2162	3593	30.8
1886	100	1504	2050	3554	30.0
1887	100	1707	2176	3883	27.3
1888	101	1892	2411	4303	33.8

Source: debt service data from Levy (1995).

Several property rights issues arise from questions related to the Brazilian public foreign debt. When the service of these loans was contractually defined in terms of foreign currency there were, in principle, barring default, no property rights difficulties. However, quotation of Brazilian bonds depended to a degree on the market evaluation of

how economic policy was being conducted. Low quotations, especially in relation to loans floated at par value, could badly affect the rate of return on specific loans. Although quotations of Brazilian sterling loans fluctuated very significantly during Imperial years, the end of year quotation of Brazilian 5%s in London in 1831, the worst year during the Empire, was 44. But during certain periods such as the late 1850s and early 1860s as well as the 1880s credit standing was very high, exceeding 100.74 The Brazilian Empire was thought to have "unlimited access" to the London financial market.75 If the deteriorating debt-export ratios and falling exchange rates as well as the continued fiscal disequilibria are taken into account it is somewhat surprising that quotations in the 1880s remained so high.

Much of the literature on long-term debt suggests that Brazil had a worse record of payment of its foreign debt service than most other debtor countries. But most of these evaluations are not relevant and are even misleading when the focus of the analysis is the Imperial period, that is the period from 1822 to 1889. Some of this work seeks only to evaluate the record concerning dollar loans which were floated only after the First World War. Others analyse behaviour in the long term, starting in 1850 and ending in 1970. However, the initial period from the 1820s to 1850 which was excluded was marked by the default of many borrowers, but not of Brazil.

Preliminary results of a research project on this issue show that while the counterfactual rates of return for consols remained around 3.1-3.2% yearly, actual rates of return on Brazilian bonds floated during the Empire between 1824 and 1875 varied between 4% and 10.3% yearly. It is of course true that the variance of yearly rates of return was much higher for Brazilian bonds than for consols, but for most of the Imperial loans this has to be set against the significantly higher rates of return of Brazilian bonds.

<sup>74</sup> Brazil in contrast with most Latin American economies did not technically default on its sovereign central government debt before 1937. In the late 1880s, Brazil converted all its 5% foreign loans floated between 1865 and 1886 to 4%. See Marichal (1989), p.49 and Abreu (1988), passim..

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<sup>&</sup>lt;sup>75</sup> Dutot (1857), pp. 71-2. In the early 1870s Brazilian bonds normally traded in London above par. See Mulhall (1873), pp. 7-9.

<sup>&</sup>lt;sup>76</sup> Such as Eichengreen and Portes (1989) or Jorgensen and Sachs (1989).

<sup>&</sup>lt;sup>77</sup> Lindert and Morton (1989).

Holders of internal loans floated without indexation faced potential losses due to higher inflation in Brazil than in the rest of the world. Internal loans not indexed to the foreign exchange rate carried a differential interest rate of 1-1.5% over the interest rate on indexed loans of 4-5%.

Fluctuations of the exchange rate were significant during the Empire. First, there was a continuous devaluation from independence until the early 1840s when the average yearly exchange rate was maintained between 25 and 29 pence per milréis. During the Paraguay war it devalued sharply to reach a minimum of 17 pence in 1868 but in 1872-1876 was back to 25-27 pence. Following the difficulties in the second half of the 1870s, the **milréis** slowly devalued to reach a level below 19 pence in 1885-1886 and only recovered in the last years of the Empire, when it again approached legal parity.

Inflation rates were relatively low if compared to the Republican experience but high if compared to inflation rates in developed economies, or rather deflation rates in most major economies.<sup>78</sup> The very unreliable price indices available for the earlier period suggest yearly inflation rates of 0.9 % in the 1830s, 0.4% in the 1840s, 3.6% in the 1850s and 2.8% in the 1860s.<sup>79</sup> More reliable wholesale price indices show yearly rates of -1.3 % in the 1870s and 0.3% in the 1880s.<sup>80</sup> If these indices are splintered they indicate that domestic prices roughly doubled between 1830 and 1889, in line with exchange rate depreciation from 50 to 27 pence per milréis.

In such a situation, holders of internal debt denominated in milréis faced losses which however were not a direct result of conscious action of the Central Government, except to the extent that it engaged in foreign wars and public spending which were not unrelated with inflation.

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<sup>&</sup>lt;sup>78</sup> Between 1830 and 1889 the US wholesale price index (BLS) fell by about 10% and the Rousseaux price index for Britain by more than 30%. See United States (1975), p. 201 and Mitchell and Deane (1971), pp. 471-2.

<sup>&</sup>lt;sup>79</sup> See Goldsmith (1984) and Buescu (1996).

<sup>80</sup> See Catão (1992).

## 5. Monetary regimes and banking during the Empire

After independence in 1822, the Banco do Brasil continued to issue notes which would constitute a substantial fraction of the currency in circulation until 1829. However, in 1827, given the large quantity of counterfeit copper coins in Bahia, the central government allowed the issue of **cédulas** for the recalling of those coins, and those became known as "provincial money". This measure was to be extended to other provinces of the Empire according to a law of October 3, 1833, which determined that all copper coins should be recalled by the provincial **Tesourarias**. In the meantime, several provinces (besides, Bahia and the Rio de Janeiro mints) had issued copper coins including Goiás, Mato Grosso, São Paulo and Minas Gerais, all subject to counterfeiting as the Imperial copper issues.

For the enforcement of the 1833 Law, the National Treasury issued **cédulas para o troco da moeda de cobre**, which contrary to those issued for Bahia, had legal tender and forced circulation as paper money until 1837. They were to be exchanged for the nominal value of copper coins, less 5% which would revert to the Treasury. In 1834 and 1835, countermarks were applied by some provincial governments to copper coins to reduce their value to one half (Ceará and Pará) and even to one fourth (Maranhão) to try to obstruct their exit from the provinces.<sup>81</sup>

Given those complications involving the copper coins in circulation and extensive counterfeiting, the Imperial government issued the Law of October 6, 1835, meant to reestablish the credibility of the copper currency. All copper coins were to be presented for countermarking, the false coins would be confiscated and destroyed, and the copper coins of 80, 40 and 20 réis would be countermarked with half their value. This process was never completed and countermarked and old coins circulated in parallel for decades. This confused situation of the copper currency in the early Empire cannot be

<sup>81</sup> See Trigueiros (1987), pp. 68-74.

dissociated from the unfavorable fiscal situation in the period. The repetition of colonial practices regarding the currency, which infringed property rights, would, however, cease after the late 1840s.

Contrary to the vicissitudes associated with copper coinage, the new Imperial government did not debase the limited gold coinage issued until 1833, preserving the weights and fineness of the late colonial period. But it retained initially the previous habit of issuing a "strong" and a "weak" coinage. The 6,400 réis of 4 oitavas at 1,600 réis per oitava corresponded to a parity of 67.5 pence per mil réis. The 4,000 réis of 2.25 oitavas at approximately 1,777 réis per oitava corresponded to a parity of 60.75 pence. The silver 960 réis continued to be issued at an overrated nominal value and the rare silver coins of other denominations also preserved the late colonial standard (of 128 réis per oitava).<sup>82</sup>

However, the issue of precious metals was insufficient to meet the demand for money and by a decree of June 1, 1833 the government decided to have a uniform currency ordering Treasury notes to be stamped in England, initiating a monopoly of note issue by the Treasury initially from 1835 to 1838 and again from 1866 to 1889.<sup>83</sup> Actually, by keeping a legal relation between gold and silver coins different from the world market relation, the government fostered a substantial drain of gold coin from the country.

The second monetary system of the Empire, involving a debasement of the metallic currency, lasted in principle from 1833 to 1846 (but actually 1848 in view of the delay in the implementation of the new laws). Gold pieces of 10,000 réis were issued at 2,500 réis per oitava, and the so-called series of silver **cruzados** (including coins of

<sup>&</sup>lt;sup>82</sup> According to the 1833 report of the Ministry of Finance, the seignoriage on coins was respectively 6.66% for the 6,400 réis, 18.5% for the 4,000 réis and 15% for the silver coins. The legal relation between gold and silver was approximately 1 to 13.5 when the market ratio was 1 to 16. The exchange rate parity of the 960 réis was only 54 pence. While the commercial par was around 60 pence. See Viana (1922) pp. 184-185.

<sup>&</sup>lt;sup>83</sup> On coinage in the early empire, see Coimbra (1960), tome IV. For a summary of note issue, see Lissa (1987), pp. 13-14. For a more extended discussion see Calógeras (1960), chapters IV and V.

1,200, 800, 400, 200 and 100 réis) were still issued in silver of 11 **dinheiros** (0.91666 fineness) but at the rate of 160 réis per oitava. In the late 1840s, new legislation established new standards for gold (4,000 réis per oitava) and silver (281.6 réis per oitava) which would be basically maintained from 1849 to 1889.<sup>84</sup>

As regards the par exchange rate, the Brazilian legal monetary standard had been broken in 1833 from the pre-independence legal tender parity of 67.5 pence per **milréis** to 43.5 per **milréis**. 85 New legislation in 184686 further broke parity from 43.5 pence to 27 pence per **milréis**. 87 While the legal definition of the milréis remained unchanged until the end of the Empire, the Brazilian foreign exchange rate fluctuated very significantly as mentioned in the previous section. 88

This was not unrelated with the characteristics of monetary circulation in independent Brazil which, as already seen, was mostly based on paper currency after the end of the 1820s. The 1830s were marked by the "scarcity of money" as Gresham's law

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<sup>84</sup> See Coimbra (1960), tome IV, chapter XVI; Prober (1966), pp. 17-18; Trigueiros (1987), pp. 56-57, Calógeras (1960), chapters V and VI. Calógeras presents annual figures on coinage and note circulation between 1809 and 1853. Between 1809 and 1821, 9,192 contos in gold, 13,215 contos in silver and 1,004 contos in copper had been issued, as opposed to 8,070 contos in notes of the first Banco do Brasil. Betwen 1822 and 1830, total coinage was some 555 contos in gold, 2,749 contos in silver and 12,124 contos in copper, while in 1830 notes in circulation included 1,490 contos of Treasury notes and 18,860 contos of notes of Banco do Brasil. From 1831 to 1835, gold coin issues totalled some 406 contos, silver issues only 19 contos, while copper issues reached 1,456 contos. In 1835, the value of the copper coins countermarked by the central government was 20,000 contos, replacing previous issues, while the new Treasury note issue was 30,702 contos. From 1836 to 1848, gold coinage was limited to 551 contos, silver issues to 71 contos while note circulation in 1848 included 47,802 contos in Treasury notes and 1,515 contos in private bank notes. From 1849 to 1853, already under the new monetary standard, gold issues totalled 16,374 contos and silver issues 2,385 contos, as opposed to a note circulation of 46,693 contos in Treasury notes and 5,569 contos in bank notes in 1853. See Calógeras (1960), p. 80. Wyndham (1889), p.14, quoting contemporary official sources, advances the coinage figures of 8,114 contos in gold and 16,038 contos in silver from 1810 to 1829 and of 951 contos in gold and 67 contos in silver between 1830 and 1849 (possibly 1848), which are roughly in line with Calógeras figures.

<sup>85</sup> Law 59 of October 8, 1833.

<sup>&</sup>lt;sup>86</sup> Law of September 11, 1846.

<sup>87</sup> See Calógeras (1960), chapter 5.

<sup>&</sup>lt;sup>88</sup> The new legal relation between gold and silver was 1 to 15 5/8, and a law of July 26, 1849 established in practice a gold mono-metallic system, by limiting the obligation of receiving payments in silver coins to 20 **milréis**, and keeping the limits previously established for payments in copper coins. In the following year, the demonetization of the old coins and the obligation of having them recoined was also established.

stimulated in succession the expulsion of gold, silver and copper from circulation which became debased. Only in the late 1840s metallic circulation was again important.<sup>89</sup>

A government-controlled Banco do Brasil had been created when the Portuguese Court moved to Rio de Janeiro in 1808 and was liquidated in 1829 mainly in a reaction against an experience that was thought to have been marred by gross mismanagement. Since the Treasury was heavily indebted to the bank due to advances, its shareholders were paid at 90%. 90 A second Banco do Brasil planned in 1833 was never launched. There were no significant private banks before the early 1850s. Some small banks were created, first in the provinces, then in Rio. Some financial services for coffee growers in the Southeast were provided by **comissários** which acted as purchasing and selling agents in the main urban centres and provided advances on future crops. 91 The share of banking deposits in the means of payment rose continuously from less than 10% in 1850 to around 60% in 1889 but the ratio of means of payment to GNP was perhaps around 20% both in the late 1820s and in the late 1880s. 92

<sup>&</sup>lt;sup>89</sup> See Carvalho (1858), p. 42.

<sup>&</sup>lt;sup>90</sup> Calógeras (1960), chapters III and IV makes this the centrepiece of his strong criticism of the decision to liquidate the bank.

<sup>&</sup>lt;sup>91</sup> See Laerne (1885), chapter 5 for a very good description of the role of the **comissários** or the excellent Stein (1957), chapter 4.

<sup>&</sup>lt;sup>92</sup> See Goldsmith (1984), pp. 36 and 44. These figures are very approximate as no data on GNP exist. Starting from a series of nominal GDP based on money supply (M2), wages paid, exports + imports and government expenditures and on an average price index based on price series precarious both from a statistical and a methodogical point of view, Goldsmith computed the following per capita real GDP growth rates: 1851-60: 1.34%; 1861-70: 0.91%; 1871-80: -0.24% and 1881-89: -0.58% and the average of 0.34% for 1850-89, corresponding to a growth rate of total real GDP of 2.04%. Allowing for changes in the terms of trade, the per capita growth rate for the whole period would increase to 0.7%. He also quotes the estimates, also based on indirect methods, of Buescu of an average rate of 0.3 to 0.4% for the period 1850-89 and of Furtado, a weighted average of 1% based on regional estimates for the whole second half of the 19th century. Coatsworth (1997), p. 13, based on Bulmer-Thomas, records that Brazilian exports per capita in current dollars would have increased from US\$ 5 in 1850 to US\$ 8.6 in 1870 and to US\$ 9.6 in 1890. On p. 4, the same author reproduces 1994 estimates by Maddison which suggest that in 1890 Brazil's per capita income corresponded to 21% of that of the United States, while the corresponding figures for Argentina, Chile and Mexico were respectively 49%, 35% and 25%. On the basis of an estimate by Coatsworth of a ratio of 36% for Brazil in 1800, which he acknowledges to be possibly underestimated, it would appear that Brazil's position in relation to the USA would have suffered a significant deterioration during the Imperial period.

The 1850 Commercial Code by making possible the establishment of joint stock companies stimulated the creation of new private banks. The Banco do Brasil of Mauá & Co. was established and eventually transformed into a new government-controlled Banco do Brasil in 1853. The 1850s and early 1860s were marked by the increasing role of banks in issuing paper currency: while by 1850-51 notes issued by banks were 2% of total paper currency in circulation this participation rose to a peak near 80% in 1865-66.93 The Banco do Brasil acquired through take overs the monopoly of issue in Rio de Janeiro in the mid-1850s. The consequences of successive liquidity crises led to a reappraisal of the emission rights legislation. In 1860 issuing rights by private banks were curtailed. In 1866 the emission privileges of the Banco do Brasil were withdrawn and the issuing monopoly returned to the Treasury. The gradual withdrawal of Banco do Brasil notes in exchange for bonds was provided for.94 The issue of Treasury notes with more credibility was particularly important in view of the banking crisis of 1864 and of the Paraguay war as financial uncertainty and 'the requirements of the government on ...account [of the war] resulted in the disappearance of almost the last ounce of specie from the country."95

The Banco do Brasil played an important role in alleviating the impact of successive financial crises such as those of 1857 and 1864 as the government waived its issuing constraints. But there are suggestions that these stances were politically motivated as shown by the reluctance to weather the consequences of the 1875 crisis which led in the end to the failure of Banco Mauá which had had, though in a much smaller scale, a role similar to that played in France by the Crédit Mobilier.<sup>96</sup>

In the end of the 1880s in another round of the confrontation between **papelistas** and **metalistas** - the Brazilian versions of the Banking and Currency schools - legislation was passed providing for a return to multiple emission but had no practical importance

<sup>93</sup> Calógeras (1960), passim.

<sup>&</sup>lt;sup>94</sup> Law of 12 September 1866. On bank issues between 1836 and 1889, see Trigueiros (1987), pp. 87-89.

<sup>&</sup>lt;sup>95</sup> See the already quoted Report of consul Lennon Hunt on the Trade...of Rio de Janeiro...in 1869, p. 239.

<sup>96</sup> See Pradez (1872), p.164.

before the end of the Empire. It would be of crucial importance, however, to explain the very expansionary monetary policies in the first two years of the Republican regime.<sup>97</sup>

Foreign banks had an important role to play from the early 1860s. N.M. Rotschild & Sons of London had the monopoly in the flotation of foreign loans for the central government of Brazil from the mid-1850s until early in the 20th century. It also acted as a paying and purchasing agent for the Brazilian government. Foreign banks were first installed in the early 1860s: the London and Brazilian Bank in 1862 and the Brazilian and Portuguese Bank, later renamed he English Bank of Rio de Janeiro, in 1863. The Brasilianische Bank für Deutschland was created just before the end of the Empire. Foreign banks became particularly important during the Republic and reached the peak of their influence just before First World War I.98

While the volume of paper money issues during the second Empire is reasonably well known, and there exist records of the mintage of Imperial coins, these figures are not sufficient to measure accurately the supply of currency in Brazil during the period, and especially the supply of metallic currency. It has been shown that the export and import of Brazilian and foreign coins was included in the trade statistics, and coins from various countries were used in Brazil in domestic transactions from the 1850s to the 1880s. For instance, a decree of October 24, 1857 established a fixed rate in **milréis** for sovereigns and half sovereigns to be received by government departments. The Finance Ministry report relative to that year justified this measure stating that it "supplied our markets with a perfect money, well-known and admitted by the commercial world, while saving the expense of having it recoined". In fact, 59.5% of the 35 thousand contos issued in gold coins of the new milréis standard between 1849 and 1859 corresponded to foreign coins transformed into Brazilian coin, while only 32% of the issues of silver coins in the same period corresponded to "old national coins", the remaining fraction

<sup>97</sup> See Franco (1983).

<sup>98</sup> See Joslin (1963). See also the Report of Mr. Consul Westwood on the Trade of Rio de Janeiro for the Year 1863, PP 1865, Vol. 53, p. 72. This diplomat records that "the London and Brazilian Bank ...direction in London, capital ❖ 1,500,000...does a very important business" and registers the recent foundation of the "Brazilian and Portuguese Bank...direction in London, capital ❖ 1,100,000."

corresponding to imported silver coins and silver bars. The "precautionary demand" for money seems to have often been met by foreign gold and silver coins in view of the lack of confidence in the paper money of the Treasury. In the 1880s, this trend was reinforced by European immigration, as confirmed by a British consular report which states that immigrants working in coffee plantations asked to be paid and also saved in sovereigns. On April, 21, 1889 the Imperial government issued a new circular confirming the authorization of use of sovereigns in all "public and private transactions".99

To the extent that the Imperial coinage did not represent a significant fraction of the total money supply, the government's opportunities for seignoriage or to resort to debasement of the coinage were limited. By the late 1880s, slightly before the Imperial government authorized new private bank note issues based on metallic reserves, a report suggested an increase in the seignoriage rate applied to silver coins by the Brazilian mint, but this apparently was not implemented.<sup>100</sup> There was also no government attempt to manipulate the precious metal content of coins in circulation through debasement. In order to supply small change, in the 1870s, nickel and bronze coins of smaller denominations were introduced, as no copper coins had been minted since the 1830s.<sup>101</sup>

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<sup>&</sup>lt;sup>99</sup> For the quotations in the text, see Lago (1982), pp.502-503. Table 5, on p. 504, shows the various foreign coins circulating in Rio Grande do Sul in 1860 and their value in milréis according to the local British Consul. Between 1846-47 and 1867-68 the "gross"imports of coins into Brazil included in merchandise trade totalled • 18.8 million. The data on "gross" exports of coins are more fragmentary. Calógeras (1960), pp. 77-78 mentions the circulation of British sovereigns in the 1850s at the rate of 8,890 réis per sovereign, later legally extended in 1875. See also Wyndham (1889), p. 12 on the habit of hoarding large sums in houses and (p. 15) on Italian immigrants asking for sovereigns in December 1888, distrusting Treasury notes. In the same report it is stated that in 1889 besides the sovereign being legal tender at the fixed rate of 8,890 réis "other foreign gold coins [were] also accepted at the Custom House, but merely at the exchange of the day."

Azeredo Coutinho, Necessidade de Aumento da Senhoriagem na Moeda de Prata do Brasil, 1887, quoted by Coimbra (1959), tome III, p. 67. Coutinho was for sometime **provedor** of the **Casa da Moeda** (mint). On seignoriage rates in mid-century and the 1860s, see Calógeras (1960), pp. 76, 81, 82 who mentions the rate of 14.22% for silver in 1857. There were also taxes of **afinação**, **fundição** and **moedagem**. According to an already quoted British counsular report, "by law anyone can have gold or silver coined for them at the mint, the legal fineness of each being 0.917. The mint charge to private persons for coining gold is 2 ½ per cent, for silver it is 9.86 per cent. See Wyndham (1889), p. 14.

<sup>&</sup>lt;sup>101</sup> The accumulated coinage between 1854 and February of 1889 was approximately 28,280 contos in gold; 17,245 contos in silver; 3,805 contos in nickel and 3,799 contos in bronze. In the whole period 1849-1889 some 44,654 contos in gold; 19,630 contos in silver; 3,805 contos in nickel and 3,799 contos in bronze would have been coined in Brazil. See Calógeras (1960), pp. 80 and 88 for the raw annual data. Wyndham (1889), p. 15 presents totals of gold and silver coinage between 1849 and 1859 of respectively 37,230 contos and 8,182 contos, and of 8,411 contos in gold and 10,787 in silver between

In summary, there was no infringement of property rights in the area of metallic currency after 1849 and this may again be related to more balanced government accounts to which a greater capacity to tax foreign trade after 1844 gave a significant contribution. On the other hand, as in other countries, such as the USA during the Civil War, the issue of inconvertible currency by the Treasury, notably during the Paraguay war, in an inflationary context, did represent the imposition of an "inflationary tax" which reverted fully to the government in the periods of Treasury monopoly of note issue.

Given the limitations of scope of this paper it is not possible to deal adequately with the question of how property rights were affected by the imperfection and laxity of government regulations concerning the rights of emission of banks, the banks' imprudent behaviour and government rescue generally through the generous discount windows of the Banco do Brasil. While it does not seem that there was any important direct use of taxpayers' money, there were macroeconomic consequences linked to the accommodating monetary policies adopted by the government. Moreover, at the microeconomic level, deffective regulation in 1857 and 1864 made possible the overextension of financial houses which went bankrupt. This was not of course something which happened only in Brazil, such financial crises being ripples of financial crises at the centre of the world financial system. But the total net losses entailed by bankruptcies in Brazil were equivalent to 50% of the means of payment in 1864. The liabilities of A.J. Souto & Cia in 1864 were of about 4 million, not too different from the \(\varphi\) 5 million of Overend, Gurney of London two years later. 102

## 6. Conclusions

<sup>1859</sup> and 1887. Still according to Calógeras, in 1888 the total note issues of the Treasury and banks in circulation reached 205,288 contos, of which 188,869 were Treasury notes. An idea of the drain that the supply of metallic currency could suffer in given years through exports, and elements of comparison with the above figures, are provided by the following data based on raw figures from a consular report: the total official value of exports in the fiscal year 1876-77 of 101,047 contos included exports of 5,833 contos of gold and silver coin and between 1879-80 and 1881-82 out of a total official value of exports of 315,769 contos, 5,135 contos corresponded to gold and silver coin and 522 contos to paper money. See Report by Mr. Sandford on the Commerce of Brazil during the last 15 years, PP 1884-85, vol. 76, part IV, Commercial no. 40 (1884), pp. 368-69.

<sup>&</sup>lt;sup>102</sup> See Calógeras (1960), p. 145, Goldsmith (1984), p. 44, and Clapham (1966), p. 263.

Based on the analysis presented in the previous sections on public finance and the monetary regime during the Brazilian Empire it would seem that, if account is taken of the property rights record in relation to non-financial assets (land, - but especially the emancipation of some 600 thousand slaves without compensation), the record concerning financial assets was rather good.

Periods of lax monetary and financial regimes policy were in general politically determined: the long crisis of independence, war in the River Plate and the Regency before D. Pedro II's coronation; the Paraguay War; the difficult years during and following the big drought in the late 1870s. It is not difficult to detect similar periods also in the financial history of mature metropolitan economies.

It would seem that most of the criticisms which could be levelled to particular aspects of fiscal, monetary and financial policies would be somewhat blunted by the recognition of the structural limitations of decision-making processes in an economy geared to commodity exports using cheap labour. Otherwise a full counterfactual exercise of how the Brazilian economy would have behaved, if say the constraint on slave imports had become really binding in 1830 or if land policies had been similar to those adopted in other economies unconstrained by land availability, would be needed.

It was thus a direct consequence of the political power of landowners that taxation relied mostly on duties on foreign trade. That the increased production costs of coffee due to high protection as well as export taxes could be shifted to coffee consumers probably delayed the introduction of significant "interior" taxation such as excise and income taxes which had to wait until World War I. The financial record of the Empire was extremely good especially under D. Pedro II (1831-1889). This applied to public foreign debt as well as to the high rates of return also guaranteed to direct foreign investment. While this latter treatment may have been overgenerous, the policy must be put into perspective by the great frictions between government and foreign suppliers of

public services in a context of foreign exchange devaluation during the Republican regime. It was also during the Republic in the 20th century that unilateral moratoria on the foreign debt would be declared by Brazil (1930s and 1987).

A strong conclusion which comes out of this preliminary stocktaking having in mind monetary, fiscal and financial developments since 1889 is that any evolutionary idea about the consolidation of the respect of property rights by the Central Government as regards financial assets or less discriminatory taxation must be ruled out. With all the imperfections of government policies during the Empire, and in spite of a consolidation of private law and of the judicial system in the 20th century, as well as of a better definition and registration of landed property, developments without any precedent have since then unfavourably affected property rights from the perspective adopted in this study. A short list of such developments would have to include: government interference in the distribution of foreign exchange cover, default of foreign debt service, increased restrictions on the right of establishment of foreign firms including financial intermediaries, compulsory sales of government "loans" and highly inflationary government financing. Finally, there were recent (1990) episodes of freezing of financial assets in the context of failed stabilization attempts which were indeed akin in their treatment of property rights to what the colonial **derrama** might have represented.

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