

**War, Taxes and Gold:
The Inheritance of the Real**

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WAR, TAXES AND GOLD: THE INHERITANCE OF THE *REAL* *

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ABSTRACT

The inheritance of the *real* (the currency of the Kingdom of Portugal, from 1435 to 1910) on national fiscal and monetary institutions is presented as a response to the challenge of foreign invasions and of their aftermath. The Portuguese crown had to preserve national sovereignty over borders defined in the XIII century in the face of external military threats from neighboring states. The social contract enforced by the crown until the early XX century relied on the ability to obtain increasingly expensive warfare. The pressure to raise revenue became a motive for fiscal change since medieval times, as war provided social legitimacy for tax reform or currency depreciation.

Tax reform involved the creation of new taxes (the *sisá* and the *décima*) with a comprehensive base, well before they were acknowledged to be part of a modern fiscal system. New methods of taxation, including the incidence of the *décima* on interest income, profits and even wages in order to improve the efficiency of the fiscal system were also introduced and the immunities enjoyed by the nobility and by the church were reduced.

In spite of those modern features, for most of the period state finance was primarily based on domain revenues, coming from monopolies established on trade and other colonial resources. One of them, gold, was also used as money and powerfully affected the link between war and taxes. In particular, the amount and continuity of gold inflows allowed taxation to fall and remain low throughout the 1700s.

The high share of customs in tax revenues and the concentration of other taxes (like the excise) in Lisbon were other peculiar attributes of the system. The fiscal collapse of the early 1800s shows how sensitive to fluctuations in foreign trade both domainial revenues and customs duties were.

The importance of domainial revenues may also explain why institutional reforms did not develop in XVIII century Portugal as early as might be expected. The crown was unable to extend the modern features of its financial system and to resort to higher levels of consolidated public debt, the only way to deal with extraordinary expenditures. Wealth-holders did not support the modernization of state finance through the creation of a bank responsible for managing public debt and issuing convertible paper money. Perhaps the government's commitment to upholding property rights was not credible enough.

The increase in military expenditures was followed by the fall in colonial commerce due to the loss of Brazil. Either one of the shocks would have been sufficient to bring about a large budget deficit. The resort to inconvertible monetary creation in 1797 was responsible for a period of raging inflation lasting until the 1820s. Moreover, it engendered problems in monetary circulation up to the 1850s. Money creation was only disciplined with the reform of the monetary system and the adhesion to the gold standard in 1854.

Compared with the previous period of monetary and financial instability, the almost forty years that elapsed until the declaration of inconvertibility in 1891 allowed living standards to catch up with the European average. The resort to foreign public debt as a way to finance short-term public deficit was based on the assumption that in the long term the increase in tax revenues would balance the deficit. The constitutional agreement that pacified the country in 1852 and the globalisation in the capital markets associated with the heyday of the classical gold standard also enabled this experience of convergence. Outside the gold standard, Portugal endured renewed financial and political difficulties. In 1910, a revolution created a republic and a new inconvertible currency. If, for the monarchy, convertibility had been the rule rather than the exception, the pressure of war remained and so did the difficulties in tax administration. Indeed the resilience of the latter may be the only acknowledged inheritance of the *real*.

1. Introduction

When the Portuguese currency experience is imbedded in the overall evolution of its fiscal and monetary systems, a link emerges between war - on the expenditure side of the government budget - and taxes or other means of finance, especially domain revenues, coming from monopolies established on domestic and international trade. One of these revenues, gold, was also used as money, along with silver and copper. Increasingly expensive warfare became a pressure for change and times of war were also an auspicious context for the social legitimization of direct and indirect taxation capable of supplementing or replacing domain revenues. Throughout taxation and monetary creation under diverse international currency standards were part of a social contract which preserved national sovereignty in the face of external military challenges.

The contractual nature of taxation and its link to private property rights changed over time, and with it the nature of civil rights and financial freedom. The latter is an inheritance of the *real* (plural *réis*) which has not been appreciated, perhaps because the *real* became inconvertible during the heyday of the gold standard. Inconvertibility followed a British ultimatum - enforced by the presence of two warships in the bay of Lisbon - and the first republican uprising in Porto. Instead the inheritance of the *real* degenerated into a myth, that democracy brings budget deficits and an inconvertible currency. Its twin - that only a conservative dictatorship allied with the catholic church could produce financial stability emerged after the turmoil of the early 1900s¹.

Portuguese currency experience features stability of the price of the *real* in terms of gold and silver with roots far more remote than usually assumed by economists and policymakers. With that horizon the alleged incompatibility between democracy and financial discipline disappears and the uneasy relationship between civil rights and financial freedom ceases to be grounded on the monetary history of Portugal. Rather it becomes a topic in monetary mythology.

The debates about the political and social legitimacy of taxes under changing military circumstances at home, in the overseas possessions and in the European balance of powers are also part of the inheritance of the *real*. While the "war, taxes and gold" interaction allows an interpretation which remains relevant today, the empirical evidence that we have been able to assemble to back it up remains scanty, especially before the end of the civil war in 1834.

The relevance of war appears in the rising share of military expenditure, while the ratio of taxes to debt rises from the late 1500s to the mid 1700s. Gold coinage also captures a rising share of inflows, but it then falls - precipitating the financial and military crises of the early 1800s. The monetary regime, the organisation of expenditures and revenues, the technology of taxation and treasury operations and the patterns of deficit financing were all influenced by the political legitimacy of the monarchy. Similarly, different military challenges and responses to national legitimacy influenced the state institution-building strategies and the protection of property rights.

This is the background to the 300 year period between the Spanish and French invasions presented in Table 1 and in Appendix Tables 1 through 3. Appendix Table 4 provides data on prices in *réis* of gold, silver and goods for the full sample period 1435-1910 and Chart 2 illustrates the pattern from 1500 until the *real* was pegged to gold (at 4500 *réis* to sterling) in 1854. Appendix Table 5 reports European convergence and fiscal indicators from 1834 to 1910.

Table 1 and Chart 1 about here

A brief overview of the origins and scope of Portuguese financial development may help. A national

¹ Surprisingly both continue to be held within the political classes - nearly 25 years after a military coup restored multi-party democracy but attempted to impose a planned economy. Indeed, they would be associated with what one might call "republican, lay and socialist myths", stressing that they need not reflect explicit aversion to the republican form of government, a particular religious persuasion, even less a specific party affiliation. More on this in notes 7 and 22 below.

currency, the *libra*, was created in 1253. After several debasements, in order to finance the wars against Castille, the *libra* was replaced by the *real* in 1435. One gram of gold was then worth 35 *réis* but successive devaluations brought the price to 107 *réis* in the early 1500s. On the side of taxation, the crucial date is 1387, when, for the same reason, the excise (*sisá*), previously a municipal tax, was transformed into a universal tax with a comprehensive base². The creation of the *sisá* had a «contractual» origin insofar as it was approved by the *Cortes*, a traditional form of estates representation. Moreover, its general character, its incidence and collection methods, were extensively discussed in the *Cortes* of the 1400s and beyond.

In spite of the remarkable innovation in tax design represented by the *sisá*, tax administration has proven difficult. To make the collection of the excise on movable goods easier, the crown and each municipal corporation agreed in 1525 by contract that a fixed sum (*encabeçamento*) would be due. Municipal councils would be free to set tax parameters so as to raise the pre-defined amount (*cabeção*). The only exception was the city of Lisbon, whose excise and *real d'água* were collected directly by the crown or farmed. The local self-taxation did provide a resolution to conflicts between taxpayers and crown, but at the cost of a high degree of regional inequality in the distribution of the tax. In real estate transactions, municipalities requested a rate from non-residents higher than from residents. The tax began to be applied as a sort of toll on goods carried by outsiders into the towns, with negative effects upon internal trade and economic specialisation between different regions.

As a result of these attempts to primarily tax outsiders, inhabitants of a given municipality could be exempted from the payment of the excise on movable goods, since the *cabeção* was raised from the tolls or from the excise. This change in the method of taxation led to the stagnation of this source of revenue³. Furthermore, this transfer of tax responsibilities to municipalities reveals the incapacity of the crown to build up an infrastructure for tax administration across the territory. Giving up tax collection across mainland Portugal went along with concentrating it in the city of Lisbon, where it was easier to administer.

Portugal was involved in international credit markets although with a smaller presence than Spain⁴. Seeking better access to northern European financial markets, where Genovese and German bankers were most active, the crown established the *Feitoria da Flandres* in 1508 and issued loans in Flanders through bills of exchange, payable in three months. Until the 1550s the increase in these credits implied the renewal of the bills and accumulated interest. The bills of exchange were instruments of transfer and credit, where the cargo of the spice fleets, namely pepper, served as collateral. In the Law of February 2, 1560 the crown consolidated and transformed the total amount of credits in *padrões de juro*, with an interest of 5%, payable in the kingdom. This measure harmed above all the foreign creditors and the interest rates charged on external debt rose to 12-16%, much higher than on domestic instruments⁵. Since the early 1500s, creditors were accepting a kind of registered bond paying a fixed rate of interest and carrying a variable price. A public deed was necessary to sell the instrument, called *padrão* (or *carta de padrão de juro real*⁶). In that sense it was similar to real estate.

² Neither the king nor the queen were exempt from paying the *sisá*, as stated in the royal decree (Gonçalves, 1964). The *sisá* survived to this day (even though the incidence was changed in the 1830s as discussed below), but evasion has become widespread. On the pre-*real* (1 *real* = 35 *libras*) period, see Godinho, I, 1963 and Valério, 1991.

³ The same happened in Spain after the *encabezamiento general* of the *alcabalas* (Spanish excise) in 1536 (Muto, 1995, p. 253).

⁴ The imperial politics of Carlos V and Filipe II implied a great amount of credits and also bankruptcies. The first Spanish bankruptcy finished with the Fugger in 1557, but borrowing continued from Genoese banks. Silver flows that arrived at Seville after 1570 were the best guarantee to Italian creditors. See Braudel, 1990, 3: 79-87; Braudel, 1993, 3: 136-138; Silva, 1957: 19, 124-126.

⁵ According to Azevedo, 1988: 119-131, the crown no longer obtained credit in fairs in Flanders and Castille.

⁶ As the redemption of these bonds was unusual they were like consolidated debt, according to Gomes, 1883, I, 57-60. Also Cardoso, 1989, 152-3. For Gomes, 1883, I: 18-20, consolidated public debt began even earlier, with the *tenças* that were a life annuity gave by the King as gratefulness of services. As any entitlement, the *tenças* imply public expenditures but the credit aspect is absent, so we prefer to keep the *tenças* out of public debt.

With this domestic and international background in mind, we present the analysis in three chronological sections, roughly corresponding to the XVII, XVIII and XIX centuries. Guiding the selection of the periods is the view that the structural attributes and weaknesses of the Portuguese financial system are better understood during changes in regime, due to wars or revolutions. Section 2 stresses the build up towards the restoration of independence in 1640 and its fiscal and monetary effects, respectively the early introduction of an income tax and successive currency debasements.

Monetary and fiscal developments following the discoveries of gold in Brazil until the late 1700s are presented in Section 3 together with the implications of currency stability. Section 4 focuses on the first experience with inconvertibility in 1797 going on to the run-up towards the Brazilian declaration of independence in 1823. It also evaluates constitutional rule, stressing the difficult coexistence of civil rights and financial freedom, describes the virtuous cycle from the early 1850s to the early 1890's and how leaving the gold standard was followed by the demise of the monarchy. Section 5 concludes.

In the changes that took place from the end of union with Spain in 1640 to the creation of the united kingdom with Brazil in 1810, three moments of decisive mutation in the tax system are closely examined. First is the period 1640-1660, when the war for the restoration of independence urged intense tax changes - and notably the introduction of an income tax (section 2.2). Second is the drop in tax revenues from foreign and colonial trade and the risks of further involvement in the Seven-Year war, which led to a profound reform of fiscal institutions in 1761 (section 3.2). Third is the impact of the Napoleonic wars (1796-1808) on the tax system. It is apparent in the efforts to overcome the tax immunities enjoyed by the nobility and by the church. However, the most relevant aspect of this adjustment was the propensity to issue public internal debt in order to finance budget deficits over any lasting effort to reform the tax system in the direction of efficiency, equality and simplicity. Even if the tax debate in Portugal did not achieve the same salience as in pre-revolutionary France, the political crisis leading to constitutional rule was equally exacerbated by financial instability (section 4.1).

In all three instances, military pressure was decisive on fiscal adjustments and on tax reform. The transformation of state finances was largely due to the impact of increasingly expensive warfare. Financial reform, the redefinition of property rights and state functions are at the core of the political debates and actions attempting to found and build up a liberal state, as stressed in Section 4. Nevertheless, the effects of the Napoleonic wars and the subsequent transfer of the crown to Brazil (1808), the 1820 liberal revolution and the periods of civil wars and political and social unrest that followed this event undermined a smooth establishment of representative institutions as the basis of a new legitimacy for taxation. Up to the 1850s, all financial schemes designed to raise government revenue were tried, including debt issue, tax reform, forced debt, forced donations from the mercantile community, property confiscation and privatisation of state property. The result was the loss of social confidence and financial reputation.

In contrast, the fourth change in economic regime was peaceful. It started in 1851 and involved compromises that softened political conflicts and initiated a long period of stability, lasting for forty years. Yet systematic resort to deferred taxation via external borrowing narrowed the domestic tax base and made the financing of public infrastructures more fragile. When domestic political instability returned in the late 1880's, the combination of the British ultimatum and of the Baring crisis of 1891 were sufficient to get off the gold standard (section 4.4)⁷.

⁷ The currency remained inconvertible until after the *escudo* pegged to the ECU through the Exchange Rate Mechanism of the European Monetary System in 1992 completing a regime change initiated with the repeal of the constitutional ban of privatizations in 1989. The consequences of the move, initially described by an influential academic economist as a "vanity" of the prime minister, are described in Braga de Macedo (1997) in the hope of dispelling what was set to become another monetary myth...

2. Spanish rule and restoration war

2.1. Domain revenues

Seigneurial duties and other domain revenues are remnants of a time when it was thought that the sovereign was entitled to have enough land so as to be able to "live from his own means"⁸. Data on state revenues for selected years when available information included all sources of state revenues, summarized in Table 2, shows the balance between revenues coming from domainial sources and other revenues having their origin in taxes, the relative weight of indirect versus direct taxes and the share of Lisbon⁹.

Table 2 about here

Any items which are part of the patrimony of the crown and can be directly exploited, rented or donated should be classified as domain revenues¹⁰. This includes rents from land and houses, seigneurial duties over farmers and some other personal rights, which, in the taxonomy of state revenues proposed by Manuel Severim de Faria in the early 1600s were labelled as *proprios*. They were mostly received in kind and in 1588 accounted for 6% of total revenue (colonies excluded)¹¹. The biscuit manufacture of *Vale do Zebro* and other state manufactures were also insignificant sources of revenue.

The revenues from trade in pepper, *pau brasil* and gold from Mina, in Eastern Africa, are recorded in the 1588 budget, but the income from the slave trade or from Madeira's sugar are lumped together in the revenues coming from the Atlantic trade¹². The figure reported in Table 2 falls from one third to one fourth of the total between 1588 and 1619¹³.

Indirect taxes were the other main source of state revenues¹⁴. There were taxes on internal circulation, transactions and consumption, and also custom taxes, which were responsible for over two thirds of revenue in 1588 and three quarters in 1619¹⁵. In Lisbon, the sales tax *real d'agua* was collected in addition to the excise. Revenues increased to the point that, in 1588, Lisbon accounted for over half of the revenues coming from the excise and other indirect taxes. Most of the duties on foreign trade were also collected at the Lisbon's Customs so that the importance of the rest of the country to the royal

⁸ Bonney, 1995a, p. 13 characterises the evolution from the domain state to the tax state in Early Modern Europe as the equivalent, in fiscal history, to the transition from feudalism to capitalism in economic history.

⁹ Except for 1716, which seemingly does not exhibit data about the *décima* tax. Revenues collected in the State of India and in the Atlantic Empire were not considered, unless they were directed into mainland Portugal, as, for instance, the gold duties or the *donativo* tax.

¹⁰ Scandinavian countries also based an important part of their revenue in domain duties or incomes, from land, silver and copper. Prussia, through the acquisition of new territory, which was incorporated in the patrimony of the king, is another example too. See Petersen, 1975; Hart, 1995; Bonney, 1995c.

¹¹ Thus Hespanha, 1986, p. 214 claims that patrimonial revenues were then "almost non-existent".

¹² Activities or products subject to contractual arrangements with merchants providing for their exclusive concession for a period of time were the slave trade and Mina gold, throughout the mid and late 1400s (Godinho, 1983-1984, I, p. 138) or tobacco after the 1600s. Private exploitation of some monopolies was granted against the payment of a duty in the case of gold and salt. Sugar farming in the island of Madeira was a royal monopoly too. Initially granted to Prince Henry the Navigator (Verlinden, 1960), this donation reverted to the crown – as was the case with the slave trade. The pepper trade, the export of bullion to Asia and other activities were carried out directly by the crown (Godinho, 1983-1984, III, p. 58). Monopolies account for at least 207 contos, net of the slave trade and sugar from Madeira (45 contos) coming from the traditional «domain income». The figure reported in panel A of Appendix Table 1 is 252 contos.

¹³ Difficulties in the pepper trade and the low cargoes of gold coming from Eastern Africa brought the share down according to Godinho, 1968a and 1978b and Disney, 1981.

¹⁴ Aside from personal and late duties included in domain revenues, the direct tax was a recent creation. The pressure of Olivares led to the introduction of a tax on the revenues of all officers and people bestowed with an honour by the king (Hespanha, 1986, I, 55). Resolute opposition from office-holders and bestowed people resulted in the abolition of this tax with the restoration of 1640.

¹⁵ The relative shares of customs and excise were reversed between 1588 and 1619. The excise declined from 40% to 36%, while customs contribution to state revenues increased from 27% to 39%. The percentage collected in Lisbon in 1688 and 1716 is 75-80%, down from the 90% recorded in the mid and late 1500s.

treasury kept decreasing¹⁶.

During the union with Spain, the municipality of Lisbon served as guarantor of the consolidated debt emissions, through the local taxes over transactions (*real d'água* and *realeiro*). In 1630, 120 *contos* were raised through this system, proving the apparent good credit of the municipal finances¹⁷. After the restoration of 1640 and until 1679, the Portuguese kings kept on this method of raising money to finance public expenditures, exacerbated by the state of war against Spain.

2.2. The income tax

The tax burden rose during the last decades of the union with Spain. The end of trade with the Netherlands in 1621 and the Spanish struggle in the international arena influenced Portuguese tax revenues in two ways: first, the Atlantic trade declined and with it revenues coming from customs and monopolies; second, the Spanish treasury needed a more substantial contribution from Portuguese taxpayers¹⁸.

From 1621 to 1640, there was a sequence of administrative decisions aimed at raising taxes in the Portuguese territory: the grant of extraordinary levies (*serviços*) asked to the mercantile community of Lisbon or the municipalities of the kingdom; the introduction of a new duty on salt (1631); the increase in the *encabeçamentos* of the excise (1635); the extension of the *real d'água* to all the regions of the kingdom (1635); the introduction of an income tax on officers and privileged people (*meios-cratos*, 1631); the effort to introduce a new tax on the appeals presented to the administration (*papel selado*, stamped paper).

These attempts to increase taxes were responsible for the only tax revolts occurring before the constitutional regime. They eventually led to the overthrow of the Spanish rule and the foundation of a new dynasty on December 1, 1640 (known as restoration)¹⁹. One of the first measures taken by the new government was to repeal any tax increase decided during the union with Spain. Nevertheless, new taxes were needed to pay for the war against Spain and for the claims on overseas possessions brought out by the Dutch and the English. Selling *padrões de juro* or converting debts into these registered securities was another means to finance the independence effort²⁰.

Holland mobilised an army with around 60,000 men. With a larger population, Portugal only prepared an army with 20,000 men in infantry and 4,000 in cavalry at a cost of 1200 *contos* (Decree of 5 September 1641). This is 20% higher than total revenue in 1619, when the financial situation was more favourable. Panel B of Appendix table 1 shows military and total expenditure in selected years.

The creation of the first direct tax: the *décima* (tithe) in 1641 should be seen in the same light. As with the 1387 excise, a deliberation taken in *Cortes* gave it a legitimacy that might be important to a new sovereign. Compared with direct taxes collected in other European countries, the comprehensiveness of the base is impressive: it includes not only rents from real estate, the outstanding source of wealth in this society, but also labour income, earnings from professional activities, profits from commercial or industrial activities, and even interest income.

¹⁶ Taxes on transactions and consumption in Lisbon rose between 1588 and 1619, and maintained their relative weight (12% in both years) while taxes collected across mainland Portugal slightly dropped in relative weight. The evolution of the most important tax under this group – the excise – also differs from other indirect taxes, as its nominal value declined from 1588 to 1619 (from 204 to 194 *contos* as shown in Appendix Table 1).

¹⁷ See Ferreira, 1879. But selling *padrões de juro*, continued to be a means to finance public expenditures as pointed out by Hespanha, 1993, p. 224-225

¹⁸ Downing, 1992 and Tallett, 1992 point out that the 'military revolution' of the 1500s and 1600s required new financial capabilities, testing the ability of crowns to extract enough resources from their subjects.

¹⁹ For a broader economic and social background of the period see Godinho, 1978b, and Oliveira, 1983, 1984 e 1991.

²⁰ Gomes, 1883, 220-232. Voluntary donations from the Church and from the mercantile community helped the treasury as well. Serrão, 1952 and Godinho, 1978b mention individual contributions from leading Jewish merchants and financiers of Portuguese origin and living in Amsterdam, hoping that the new king might start a more permissive policy towards his religious minority.

The second statute of the *décima* (1654) introduced, for the first time, the procedures for a land and house survey, in order to assess its taxable value, as well as the registry of the occupational status for all the people living in each parish. The only exception to the incidence of this tax was the real estate held by the Church or welfare institutions. Nevertheless, land and houses belonging to the members of the clergy as personal property were taxable²¹.

The revenue of 200 *contos* recorded for 1660 and 1681 suggests that the *décima* accounted for 20% of revenues received, about the same as the excise collected out of Lisbon. The *décima* then overtook the excise as a source of revenue to the crown and ranked right next to customs (366 *contos*). In addition, the excise and similar taxes collected in the city of Lisbon amounted to 144 *contos* in 1660, almost 75% of the revenue came from the excise across mainland Portugal. Revenue from the excise collected through the *encabeçamentos* paid by the municipalities stagnated through the 1600s.

After the end of the restoration war in 1668, the *Cortes* of 1697 asked for the withdrawal or at least the reduction of the tax. Through a decree of 28 March, 1698 the crown chose the second alternative. The participation of Portugal in the war of Spanish succession resulted in a decree of 26 May, 1704 raising the *décima* from 4.5% to 10%, this time without any consent of the *Cortes*²². Conversely, the end of the war and the period of prosperity opened up by gold mining and commercial dynamism brought the tax rate to its earlier level²³.

2. 3. A hidden tax: the debasement of the currency

As was evident from Chart 1 above, the monetary unit was fairly stable in the 1500s even though prices were rising. Until 1640, the *real* depreciated from 11 to 13 *reis* per gram (about 20%) in terms of silver and from 107 to 142 *reis* per gram (about 25%) in terms of gold. The absence of war threats and the discovery of precious metal in Africa and in America helped maintain stability. But there were several devaluations, two of which in double digits against gold in 1555 and against silver in 1573.

Records of the inflows of precious metal by the Lisbon mint suggest that on the eve of the restoration, silver was the predominant specie in domestic circulation²⁴. Foreign money was used and accepted in domestic circulation, particularly Castilian *dobrões* (from 1643 to 1646), and *patacas* and *meias patacas* coined in Seville, Segovia, Mexico and Peru.

The increase in expenditure financed by the treasury, mainly for the restoration war, was the justification for successive currency debasements. From 1641 to 1688, the price of gold rose from 142 to 487 *reis* per gram (a price which was not going to be changed until 1822) and the price of silver from 16 to 31 *reis* per gram. This was discussed at the time by the *Conselho da Fazenda* (Council of Finance, created in 1591 to rationalise and centralise a more archaic system, following the experience of Spain), which became responsible for monetary affairs with the decree of February 13, 1642.

These successive devaluations had two explicit objectives: increasing revenue through seigniorage and stemming the outflow of domestic coins²⁵. It is not known how devaluation affected seigniorage revenues relative to expenditures since, aside from retrieving the details of minting operations, the precise timing of devaluation and price rises must be known²⁶. As for the second objective, we find

²¹ For the presentation of the characteristics of this tax, methods of taxation and interest to historical research see Silva, 1988 and 1993. Also the references in Hespânia, 1993, 217-8.

²² This is why the period after 1697 has been called "absolutism", an expression which has been called into question by modern historical research. Nevertheless, popular uses of expression still reflect the "republican, lay and socialist" myths mentioned in note 1.

²³ Decree of 25 November 1715 lowered the *décima* to 4.5% but revenues coming from this tax were not included in the 1716 list published by Santarém.

²⁴ Mauro, 1954. Gold was not absent but copper "is just nothing", according to Manuel de F. Sousa writing at the time (Sousa, 1680, p. 420). See also Godinho, 1985, vol. 2, 7-114 and Godinho, 1970.

²⁵ All the documentation for the period of D. João IV (1640-1656) is published in Peres, 1959.

²⁶ If prices rise immediately after the devaluation, there is no revenue gain from debasement as pointed out by Bordo, 1986. Godinho (1978), presents revenue figures for 1681 where Lisbon mint represents 2,4% of total revenues. However, it is not

frequent references to the shortage of coins, especially silver, explicitly acknowledging the outflow of precious metals, both in coins, or as worked metal, to northern European countries²⁷.

Portuguese coins, especially silver coins, had the best alloy and the changed balance of trade favoured the northern countries which led to the policy of debasing the currency, to prevent gold and silver from flowing out of Portugal²⁸. The different valuation of precious metals among the countries with which Portugal traded was considered to be the primary cause of the outflows of coin. The trade balance deficit only began to be mentioned as a factor in the drainage of precious metals to other countries in the 1680s and 1690s²⁹.

3. The golden age - and its silver lining

3.1. A bimetallic monetary regime

In 1693, gold was discovered in the Caité area of Minas Gerais, Brazil. Part of the gold mined there was due to the crown, through the so-called *quinto* tax, which from 1735 to 1750 was replaced by the *capitação*³⁰. Taxes, revenues and services were also paid in bullion, coin and even gold dust, in spite of legislative prohibitions registered in some periods to the treasury of the *Conselho Ultramarino* (Overseas Council, created in 1642 to deal with Empire questions, except those connected with Africa)³¹. The transportation of gold was not under the royal monopoly. Rather it was the responsibility of the *Conselho da Fazenda*, which organised the convoys across the Atlantic³².

António Luiz Gonçalves da Câmara Coutinho, at the time Governor in Baía, in a representation to the crown dated July 1692, pointed to the lack of specie in Brazil, and indicated as one of its causes the situation traders' preference for taking money instead of sugar³³. The law of 8 March 1694 answered this request, by determining that gold and silver in Brazil would devalue by 10% over and above the 20% devaluation decided in 1688 by Portugal. It also states that a mint should be opened in the city of Baía so that the provincial currency could be coined there and would only circulate Brazil. After the currency system became autonomous, attempts were made to harmonise monetary circulation³⁴.

The Rio mint where gold would be coined to circulate in Portugal reopened by virtue of Decree of 31 January 1702. It was a way for the state to controlling precious metal at source, thus reducing the fraud on the journey to Portugal. Only provincial currency was coined up to then, but legislation attempted to establish tighter control over the resulting increase in gold bullion production.

During the period 1699-1788, gold coined in the Lisbon mint is less than one third of the arrivals of Brazilian gold and the correlation coefficient between the annual gold inflows recorded in Appendix Table 2 and the amounts coined are quite low. The coinage ratio rises before 1720 and in the 1740s and 1750s, while arrivals peak in the 1730s and the 1740s.

possible to draw a conclusion, because not only it was a year with some monetary change, but the revenue comes only of the Lisbon mint and in that period others Stamp Houses existed.

²⁷ See *Consulta do Conselho da Fazenda* of 19 May 1643 in Peres, 1959, pp. 188-190 and *Papeis que Beichior Rebello e João Gomes de Moura derão a S.A. sobre correrem neste Reino os reales singelos castelhanos e se evitar o dano de se levar o dinheiro para fora do Reino*, ms de 1675, Ajuda Library

²⁸ See *Consulta do Conselho da Fazenda* of 13 and 14 January 1643 in Peres, 1959, pp. 158. Valério, 1991, 15 notes that the ratio between gold and silver oscillated between 8.8 and 18.7 (Appendix Table 4).

²⁹ *Manuscritos Originais*, 1687, Ajuda Library.

³⁰ See Simonsen, 1957, 276-7, Boxer, 1969, 336-7 and Morineau, 139-140.

³¹ Payments for these services came, for instance, from the supply of uniforms and ammunitions, or from the payment of goods sent to the Brazilian mint Houses.

³² They were known as the gold fleets. See Morineau, 1985, 126-130; Godinho, 1990, 477-95.

³³ Gonçalves, 1984, pp. 54-56.

³⁴ The intention to standardise the currency system throughout the Empire documented in "Papel sobre a moeda por Bernardo Vieira Ravasco" in *Manuscritos Originais*, Ajuda Library, 1687 never materialized however.

Gold arrived not only in bullion or dust, but also in coins minted in Brazil. These coins entered immediately in circulation and it was not necessary to wait for its coinage in the Lisbon mint. Throughout the 1700s, Brazil coined gold for Portugal and Portugal coined gold for Brazil. Trade also explains the disparity between the inflow and the coinage of gold in the Lisbon mint. England was the first commercial partner of Portugal and an important financial market from where several payments spread to others countries, like Netherlands and Germany. Finally, gold has uses other than coinage. Private parties tended to hoard gold in the form of jewellery, without paying seigniorage to the crown, and only went to the mint when they needed coins for their business.

The activity of the Rio mint and for a certain time that of Baía and Vila Rica was not exclusively directed to Portugal but also towards the internal circulation of the colony³⁵. However, money was not evenly distributed across regions. Like any economy with strong export-oriented production, Brazil had more coin in circulation in the coastal regions that were directly dependent on international trade. In the mining region the circulation was in gold dust, the only local production, while in agricultural regions cattle was an important means for transactions³⁶.

The existence of a mint in Brazil had two main consequences. The first was the possibility that coins and not only bullion arrived in Portugal, as Brazil was running a trade deficit with the mainland. In fact, gold imports could not be minted fast enough in the Lisbon mint: even during the 1720s its treasurer asked the church permission to work on Sundays. The beginning of Rio mint activity explains why individuals were responsible for most of the gold coined coming into Portugal after the 1720s: they resorted less and less to Lisbon mint to have their gold coined, which in turn implied a rising share of coinage for the crown. Secondly, the creation of the Brazilian mint provided trade in the colony with monetary circulation which was not dependent on the Lisbon mint. There was accordingly less of a tendency to issue paper-money to carry out commercial operations in and with the colony than in other new territories³⁷.

From the 1688 devaluation to the introduction of fiat money in 1797, gold accounted for most of the coinage, despite the increase in the silver (in absolute and relative terms), registered since the 1770s³⁸. While from coinage fluctuations alone one might conclude that a gold monometallism prevailed in Portugal, it should be noted that during the 1700s Castilian currency circulated in Portugal, and that it was not recoined until 1785.

The change in the legal value of silver in 1688 resulted in a significant coining of this metal in the 1688-1690 triennium, of about 1200 *contos*, mainly through reminting. This coinage, whilst continuing into the 1690s, dropped to about 240 *contos* (1691-99). From 1700 on, the shortage of silver for daily exchange in Portugal made itself felt again³⁹. This is shown both, by the acceptance of *patacas* in circulation in 1702⁴⁰.

This shortage changed the market value of silver, which resulted in the alteration of its legal value in 1734 (from 31 to 33 *reis* per gram) and in 1747 (to 36 *reis* per gram) setting then a ratio between these two precious metals which remained unchanged until 1822. The revaluation of silver against gold

³⁵ Many orders to coin are found either in the books of *Registo Geral* from the Lisbon mint Archive, or in the books of *Conselho da Fazenda*, Ministério do Reino, National Archives of Torre do Tombo. They are available from the authors upon request.

³⁶ Calógeras, 1929; Simonsen, 1957, Gelman, 1984.

³⁷ There were only some experiences of paper-money to local transactions. Since 1771 in the *Distrito Diamantino de Minas* there were issues of bonds and the bonds of some trading companies circulated as money since the 1750s.

³⁸ It is sometimes thought that bimetalism is an unstable system, because it leads to monometallism and to a floating market value of the precious metals but if the market value and the legal value of precious metals are similar in the long run, the system may create bands that decrease the amplitude of fluctuations in market price (Oppers, 1992). This is simply a reflection of the expectation of long term stability.

³⁹ This conclusion is based on the data of the Lisbon mint, but we must note that between 1688 and 1714 the Oporto mint was also active. This mint was originally authorised to coin silver and only in 1712 was it granted permission to mint gold coins. We do not know how much was coined, because the books of Oporto mint House had disappeared.

⁴⁰ See law of 21 August 1702. These coins were already mentioned in Section 2.3. above.

increased silver coinage on impact but there was no lasting effect since economic agents expected a higher revaluation of the metal which continued to be in short supply⁴¹.

In the meantime *patacas* dominated circulation in the coastal zones, especially the Algarve⁴². However, the fact that in the 1780s the external value of the Castilian coins was higher than its internal value, led to the prohibition of Spanish currency as legal tender in 1785. The refusal of transactions in Castilian specie explains the increase of remintage of Castilian coinage into national currency, but it still did not reach areas near the border⁴³.

The state also controlled the destination of silver, namely during wars, because it was the species used to pay soldiers' wages. At the time of the war of Spanish succession, the purchase of silver is required in a decree of the *Casa de Bragança* to be delivered to the treasury of the *Junta dos Três Estados* (created in 1640 to supervise war taxes). In the same period several other warnings, citing the daily increase of war expenditures, state that the coinage of silver is to be provided to the *Junta dos Três Estados*⁴⁴. Once again, during the Seven Years war, the *Provedor* of the mint was ordered to buy all the silver reaching domestic residents, so that it should be sent immediately to the treasury⁴⁵.

Current and extraordinary expenditures of the state explain the relative importance of the crown in the quantity of gold coined. In periods of greater difficulties the state gave orders to the mint for the treasurer to make payments directly or to coin immediately and to send it to the royal treasury. The Lisbon mint was the property of the crown, which was also an important customer of it. The abundance of gold replaced the resort to currency debasement by the use of Lisbon mint as a state reserve fund.

Portuguese gold coins were not only coined at the Lisbon mint. After 1702 Brazil coined gold for Portugal, in order to control gold production and collect royal rights over it. The Lisbon mint coined provincial coins, namely for Brazil, providing a monetary connection between Portugal and the colonies – aside from the tax revenues including not only seigniorage's revenue, but also an additional due equal to 10% when the coinage was provincial.

Population growth from 1720 (just after the war of Spanish succession) to 1781 (before the substantial price increase at the end of the century) does not completely account for the increase in the price index shown in Chart 1 above (the average annual rates are 0.26% and 0.39% respectively)⁴⁶. In any event, from 1680 to 1714 prices increased, due to the war of Spanish succession, then dropped until 1719 and a relative stability obtained between the 1720s and the 1780s⁴⁷. Accordingly, three major gold minting periods suggest themselves: the first from 1703 to 1714, the second from the early 1720s until 1736 and the third from 1738 to 1763.

Until the extent to which gold coins circulated domestically is well understood, the domestic money stock cannot be precisely estimated, and its changes are limited to the recorded gold outflows to England. The analysis of mintage composition suggests that until the 1720s, coins of 4800 réis

⁴¹ The law was passed on 7 August 1747 and the first coinage of this period was on 22 August. See *Livros do Tesoureiro, Livros da Ementa*, book 1051, Lisbon mint Archive. The price ratio of 1 to 13.7 is the midpoint of the range mentioned in note 28 above.

⁴² In the Pombal period, for example, bidding in the Algarve fishing auctions was carried out in *pesos* rather than in *cruzados* - *Ministério do Reino*, Maço 608, Caixa 710, National Archive of Torre do Tombo.

⁴³ Some municipal authorities requested the acceptance of the Castilian currency in the payment of taxes and royal dues *Documentos a respeito das Camaras do Reino*, Ministério do Reino, Maço 608, Caixa 710, National Archive of Torre do Tombo.

⁴⁴ *Documentação Avulsa*, Maço (1703 - 1750), Lisbon mint Archive.

⁴⁵ Warning sent by *Secretaria de Estado dos Negocios do Reino*, 10th September 1763. See *Entregas da prata das Americas no Real Erario (1763-1766)*, book 1604, Lisbon mint Archive, which recorded these deliveries.

⁴⁶ Annual population growth rate was estimated from data presented in Rocha, 1996b, p. 40. Analysing the behaviour of the gold coinage as a partial proxy for the changes in the money supply, we conclude that the evolution of the price index does not show the increase in the activity of the gold mintage but rather the fluctuations of agricultural production and population growth.

⁴⁷ This is based on Valério, 1997 and on a price index kindly provided by David Justino, from his unpublished work on prices in early modern Portugal. See Appendix Table 4.

prevailed. On the contrary, between the 1720s and 1740s, small value coins (480 and 800 *réis*) dominated⁴⁸. While this dominance of small coins declined when the legal value of silver was raised after 1747, the mintage of small value coins lasted throughout the century. This fact can explain why some payments, such as agricultural payments, were made less frequently than even on a monthly basis and certainly not daily. With higher amounts to settle, coins of higher quality can be used. The analysis of the copper coinage may also support this conclusion on the quality of Portuguese monetary circulation allowed by small value gold coins, as global and annual amounts of this metal coined were small when compared with the coinage of silver and gold.

A substitution in domestic monetary circulation took place by mid-1700s. After the 1740s coins of 6400 *réis*, the coins with the highest face value were the most important in minted composition of gold, precisely in the period when the state dominated gold mintage⁴⁹. The spreads pictured in Chart 2 reflect both price and composition effects, while the bands are based on the two extreme cases of currency denominations, the largest and the smallest. With the exception of three years, 1719, 1737 and 1778, the gold spread is within the legal values⁵⁰.

Chart 2 here

In short, both metallic currencies were present in domestic circulation. The Castilian currency allowed the scarcity of silver to be overcome, explaining why only *patacas* were only reminted after 1785. Lisbon mint activity was dominated by gold coinage, because silver did not generate enough profits and the productive capacity of the Lisbon mint was limited. This may be why the crown did not require Spanish monies to be recoined, as did other European countries, like England and France.

Individuals could go directly to the Lisbon mint to coin the precious metal they received⁵¹. From 1703 to 1714, coinage to private entities dominated. Conversely, at the beginning of 1720s, the state became the dominant recipient, except for some years in the 1740s and the 1790s⁵². A partial conversion of the debt was carried out in the 1740s with the redemption of the capital in debt and the decrease of interest charges.⁵³

Until the arrival of the 1725 fleet, gold was directed to individuals rather than to the state, and the converse happened thereafter⁵⁴. Therefore, revenues that arrived in bullion or gold dust from Brazil

⁴⁸ The price of one *alqueire* of wheat (around 14 liters) on the Lisbon market, in the same period, ranged between 300 *réis* and 340 *réis* and that in Oporto the daily wage of a labourer, in the 1760s, was 80 *réis* (Godinho, 1955, 82). In the hinterland of Lisbon in the 1760s, annual wages average for permanent agricultural workforce was 20,000 *réis* (Silva, 1993, 144).

⁴⁹ In terms of domestic circulation, other precious metals and copper were not absent of circulation and credit was a reality in Lisbon city, Rocha, 1995. Copper was a metal for small daily transactions, because it could not be used in payments worth more than 100 *réis* (the law of 25 September 1800 increased the value of transactions to 5000 *réis*) Considering the behaviour of copper coinage (see Appendix Table 2), its continuity and quantity was greater between 1730s and 1760s. From 1733 to 1766 the copper coinage was almost 275 *contos*, more than half the total coinage of this metal for the period 1688-1797.

⁵⁰ The difference in 1737 is due to an adding error in the source described in Sousa (forthcoming) which was discovered after the first draft of this paper was presented at the pre-session. For the others two years no such reasons were found. Similar bands could of course be presented for the less likely cases where the actual weight is higher than the legal value.

⁵¹ In Seville Mint, there were societies of rich financiers that were intermediates between the individuals and the mint, at least until the 1710s, see Sindreu, 1991: 266-285.

⁵² Especially after 1726, when the exports of precious metal from Brazil were at the zenith in the expression of Morineau, 1985, p. 138.

⁵³ In 1743 the rate declined to 5% and in 1749 to 4.5%. The conversion carried out in 1749 continued after 1750, but the rise of public expenses in the next decades increased the public internal debt according to Azevedo, 1988: 371-381

⁵⁴ The increase in 1726 of the relative weight of the state in the total coinage of gold at Lisbon mint can be justified because only after 1725 the fleets, mainly Rio fleets, arrived with more quantities of gold to the crown. In addition, the percentage of coins in the composition of gold arrivals to private entities might be important after the 1720s justifying that the state became the most important customer of gold coinage in the Lisbon mint for most of the eighteenth century. According data of Virgílio Noya Pinto, from 1702 to 1724 the amount of gold to the crown was less than 1,000 Kg, so only 4% of total arrivals (Pinto, 1929: 248-249).

became revenues available to the crown and were transformed into currency, that was used to finance current and extraordinary state expenditures. War was one of the most crucial extraordinary state expenditures. In these circumstances, the Lisbon mint could be used as the state reserve fund.

During the seven years war, without any silver being coined and with problems caused by the war and the cancellation of the Rio de Janeiro fleet's sailing, the state gave orders to the Lisbon mint to estimate the amount of gold in reserve and to coin all of it at once⁵⁵. In the 1730s, during a period of conflict in *Colônia do Sacramento*, several requests were made to the treasurer of the Lisbon mint to transfer currency to the *Conselho Ultramarino* to pay for uniforms, ammunition, powder and various other war materials, with destinations Rio de Janeiro, Nova Colônia, Pernambuco and Paraíba.

While this policy of currency debasement was a response to increased expenditures, typical of times when bullion was scarce, it does not imply that wars alone were responsible for debasement and for tax increases. On the contrary, at a time when there was no shortage of gold, fiscal measures might be postponed or substituted by the increase in monetary issue. This is the main reason why after several decades enjoying an abundance of gold, the fall in gold inflows after the 1760s severely threatened state finances.

3.2. Pombal's reforms

State revenue more than doubled over a century characterised by stable prices⁵⁶. Two types of revenues supported this rise in the financial capacity of the crown. Firstly, the revenues associated with the king's monopolies, based mostly in two new sources of earnings for the treasury: the monopoly over the extraction of gold and diamonds, and the monopoly over the sale of tobacco⁵⁷. Finally, the excise and other consumption taxes paid in Lisbon more than doubled their previous value, following the general increase in state revenues and overtaking the revenues coming from the excise paid elsewhere in the mainland.

In the beginning of the 1760s the Portuguese crown was challenged on several fronts⁵⁸. In 1755 a dramatic earthquake destroyed most of the capital city, being responsible not only for serious losses in private properties and wealth, but also demolishing the royal palace and public buildings, such as the customs and royal warehouses. In addition, the Atlantic traffic was confronted with a sharp drop in some staples (sugar, tobacco), which were sources of state revenues through monopoly or custom taxes. Moreover, gold mining was already in its descending trend, lowering the revenues associated with the monopoly enjoyed by the crown. Finally, the participation of Portugal in the Seven Years war became imminent, with the inevitable rise in state expenditures.

The first measures were aimed to revise the regulations over the monopoly of gold mining and the payment of duties associated with it (Decree of 5 December 1750), custom taxation (especially for sugar and tobacco, decrees of 10 April and 20 May 1756) and the prevention of smuggling (Decree of 14 November 1757). The law became particularly severe against smuggling since tax revenues were seen as crucial in a time of financial stringency. Secondly, the fiscal institution was changed, with the creation of the *Erário Régio* (Royal Treasury, created by Decree 22 December 1761) when the collection of all taxes and state revenues was centralised in one single department. Until then different revenues were directed to distinct offices subjected to a loose and distant control by the *Conselho da Fazenda*⁵⁹.

⁵⁵ *Ministério do Reino*, book 283, fl 47 e 47vs, National Archive of Torre do Tombo.

⁵⁶ Godinho, 1968b even sees some deflation.

⁵⁷ A further rise in the revenues came from customs, reflecting the dynamism of the Atlantic economy at the beginning of the 1700s Godinho, 1950.

⁵⁸ For the most complete analysis of this period see Borges de Macedo, 1951.

⁵⁹ This practice had been severely blamed by Manuel Severim de Faria a century earlier, when he criticised the existence of different financial departments, each one with certain expenditures associated with the revenues it would receive. Therefore, state revenues involved a variety of small balances, which made the management of the treasury a difficult task. The

Another major initiative dealt with the regulation of the *décima*⁶⁰. All its tax administration was centralised away from local officials; the methods to assess wealth, survey and evaluate real property, and tax profits from loans were improved; the universal character of the tax was reaffirmed. Its rate also returned to 10%, but this was a less important change. Its modernity in the Portuguese fiscal system is evident and understood even by contemporary reformers, like José Abreu Bacellar Chichorro, who, writing in 1793, characterised the *décima* as a modern and equitable tax in its principles, but with deficient application in recent years. Forty years later, Mouzinho da Silveira, still considered the *décima* a crucial ingredient of the liberal tax system⁶¹.

The importance of the revenues coming from the *décima* is well expressed in table 2 above. On average it amounted to 11% of all the revenues for the period 1762-1776, almost the double of the excise collected, except for the city of Lisbon. Even including Lisbon the revenues from the *décima* are not very distant (11% against 14%), and if only the period after 1765 was taken into account⁶², the receipts are equivalent (an annual average of 663 *contos* for the *décima*, against 700 *contos* for the excise).

However, the structure of tax revenues did not change with this reform. On the contrary, the importance of customs remained and that of crown monopolies was reinforced in the 1700s. Even when 1716 revenues of the monopolies over the tobacco and the Brazilian gold and diamonds are compared with the period 1762-1776, an increase of 100% in this type of revenues is apparent.

In order to increase the share of the income tax in the state revenues, a country-wide tax administration was necessary. After the difficulties of the 1760s, renewed commercial affluence was reflected in increasing custom revenues and stable revenues from royal monopolies, in which tobacco started to become more and more relevant⁶³.

3.3. The entrepreneurial domain state

War gave legitimacy to new taxes and to system reform. In the 1640s (as in the 1380s when the excise was created as a general tax) the creation of a new tax was sanctioned by the *Cortes*, transforming the decision into that of a national response to the threats to the autonomy. In the 1760s, in spite of the absence of the *Cortes*, the long preambles to the decrees gave an ideological and even historical justification for the reforms.

War was an exceptional situation that required extraordinary expenditures and exceptional means to finance it. Holland and England seemed to deal better with these challenges – and thus were able to assume a great power status in early modern Europe – because they combined civil rights and financial freedom⁶⁴. On the contrary, the Portuguese treasury obtained higher and higher sources of revenues distinct from taxation, making it more independent from increased contractual relations with other political or social entities. An enquiry on comparative state revenues in Europe, ordered by the French controller-general of finance Bertin, summarised in Table 3, shows Portugal with the higher state revenues per capita than France or Spain, but a distant third relative to Netherlands and England.

Table 3 about here.

regulation of the new Royal Treasury also introduced the double-entry book-keeping which was already the accounting norm in business practices. In 1591 the modernisation of the accounting was neglected, under the argument that similar practices were good for merchants, but improper to a king (Hespanha, 1993, 204-205).

⁶⁰ Decrees of 26 September and 18 October 1762.

⁶¹ Chichorro, 1793 and Mouzinho da Silveira's decree from 19 April 1832 (note 1 and below 4.2.).

⁶² Before 1765 the revenues coming through the collection of the *décima* are very low, demonstrating that its fiscal infrastructure was not created yet.

⁶³ Borges de Macedo, 1963.

⁶⁴ Using the terminology from the introduction, which comes from Braga de Macedo (1996). In the same vein Hoffman and Norberg, 1994, pp. 299-310; North and Weingast, 1989 have stressed two important characteristics: firstly, representative institutions, controlling state finance, in two countries with an extraordinarily high level of taxation; secondly, the ability to maintain high levels of public debt through enhancing the credibility that was attributed to the government's commitment to upholding property rights.

Aside from gold, another reason why the pressures for change did not seem to be particularly strong during this period was that Portugal did not play a major role in the European power struggle, and indeed severed its union with Spain, which under the Habsburgs did have such ambition.

The relevance of domain revenues was not a reminiscence of earlier times. Rather, the ones that mattered in financial terms started with overseas expansion and were based on an entrepreneurial attitude towards business opportunities and wealth accumulation. It was the monopoly assumed by the crown over some trades and goods rather than the importance of taxes on overseas trade, which set the Portuguese fiscal system aside from other European cases⁶⁵.

This patrimonial relationship had evident advantages. Revenues that were easier to collect and based on the monopoly of a few goods allowed the crown to lower the tax burden on mainland Portugal. As a result, peasant uprisings, as well as remonstrance by local élites, were avoided.

Moreover, royal control over gold production through the collection of the *quinto* and *capitação*, established a close relationship not only between state revenues and monetary emission, but mainly between state expenditures and gold coinage. The mint became a last resort when extraordinary expenditures found the Royal Treasury short of means.

Indirect taxes on commercial transactions appealed to governments because the tax was hidden in the price of the product. Therefore, they were most widespread across Europe. In Portugal, the excise had been the first general tax and founded in 1387 the proto-history of the modern fiscal system. It represented the social acceptance that the king could not live from his estate revenues alone, but had a public role and should be supported by the nation.

This "contractual" basis for taxation regressed in the mid-1600s, with the definition of a fixed amount for the excise to be paid by each municipality. The self-taxation by each community transformed the nature of the excise and represented a retreat in state formation, because tax administration failed to cover all the country. The fiscal system became more concentrated in Lisbon, where the excise on movable goods maintained the nature of a transactions tax. As a result, the excise shaped power relationships between centre and periphery and indeed developed into a pathology of Portuguese tax system which lasted well beyond the period.

This concentration in Lisbon of the tax system is also evident in the case of customs. As the capital city was the major port of the country, the national gate to the Atlantic commercial network, it concentrated most of the foreign trade⁶⁶. Controlling this commercial gateway minimised transaction costs to collect taxes, explaining the importance of customs revenues.

Lower tax collection costs also explain efforts to collect the excise in Lisbon and to claim a proprietary relationship towards some trades and goods which were highly valued in European markets. Tax collections in Lisbon in 1766 accounted for 59% of the total⁶⁷.

⁶⁵ Godinho, 1978a, p. 72 coined the expression merchant-state. Yet this is not what differentiates the Portuguese case from other fiscal systems, but rather the patrimonial appropriation of the revenues from some trades. Indeed, Godinho's analysis stressed the importance of taxes on overseas trade, but the connection with the label was not immediate.

⁶⁶ In the early 1800s, 75% of the Portuguese foreign trade was based in Lisbon Justino, 1989, II, 151.

⁶⁷ This is the result of summing custom taxes collected in Lisbon's Custom with the revenues of the *Sete Casas* (office where excises, *real d'água* and similar taxes were collected) and the *décima* collected in Lisbon, and of comparing this total with the revenues coming from mainland Portugal. The sources employed to estimate the weight of Lisbon were the data presented in Tomaz, 1988, for the revenues of Lisbon's Custom and the *Sete Casas*; the "*Livro de registo das contas correntes do rendimento da décima*", *Arquivo do Tribunal de Contas (ATT)*, *Erário Régio*, 802, for the state revenue resulting from the *décima* on the inhabitants of Lisbon. See Appendix Table I

4. From French invasions to British ultimatum

4.1. Political and financial crisis

Portugal's participation in European wars was a bad omen. French invasions followed and then the opening of Brazilian ports to foreign trade in 1808. A brief respite in the 1820s led to constitutional rule, but the country experienced civil war from 1828 to 1834. The old financial system faced successive crises together with increased war expenditure⁶⁸. The impact of the war in state finance and monetary circulation might not be very different from other European experiences. However, the combination of the war and the loss of Brazil is uniquely serious.

In spite of new taxation and legislative efforts to overrule the tax immunities enjoyed by the nobility and by the church, the results were insufficient to overcome the financial problems of the state. In 1796 church and nobility were required to pay the excise duties. The church was also taxed in 1800 by ecclesiastic *décima* and in 1809 was included in the exceptional defence contribution, by an increase of the *décima*. In 1800 *décima* was extended to the *comendas*⁶⁹. These measures widened the tax base and lessened existing tax inequities, but the results were very modest.

State revenues that increased in 1804 almost 37%, when compared with the average of the previous period, dropped again from 1804 to 1810 (see Appendix Table 1). Explaining this decrease was paramount the behaviour of the two structural state revenues: the customs taxes and the monopolies. In spite of the *décima* almost trebled from 1797 to 1810 and raised 44% from 1804 to 1810, it did not counterbalance the collapse of other state revenues. The behaviour of custom taxes shows a decline of almost 50% from 1804 to 1810, explained by the French invasions and by the drop of colonial revenues as consequence of the opening of the Brazilian ports to foreign trade in 1808. Looking to the revenues from monopolies, they became much more dependent on tobacco. The rise in the excise and other indirect taxes from the end of the eighteenth century to 1804, as its reduction from 1804 to 1810, is due to the collections in Lisbon. Economic difficulties, as a consequence of French invasions, explain the drop of 36% in indirect taxes at the end of the 1810s. The weight of a financial structure centralised in Lisbon and fiscally concentrated in custom taxes and monopolies, made solutions designed to extend the geographical domain of tax or the tax base insufficient.

Therefore, the state needed to adopt others means to overcome the financial deficit, by innovations in monetary and debt policy. In 1796, the bonds started to be transmitted by endorsement⁷⁰. The loan dated October 29, 1796, raised 4000 *contos*, issued in bonds with the minimum value of 100,000 *réis* and 5% of interest, opening a new period in the history of Portuguese public internal debt⁷¹. The March 13 1797 loan increased to 4800 *contos*, the interest was 6% and bonds had a lower minimum value of 50000 *réis*. It was also stated that these bonds could be used for some state payments.

A new law of July 13, 1797, stated that 1200 *contos* should be issued in small bonds⁷² and circulate as money at their nominal value. These smaller bonds created a new means of payment, paper-money, an inconvertible fiduciary one that after 1797 was in circulation with gold and silver coins. The relation between the debt and the paper-money was confirmed in the new period of Portuguese monetary history⁷³.

⁶⁸This combination of war and financial difficulties in the aftermath of the Napoleonic wars is a common feature of several countries across Europe at this time as shown by Aerts and Crouzet, 1990.

⁶⁹It was a benefit given by the King to clergymen and members of military orders.

⁷⁰Rather than being registered as required for the *padrões de juros* Peres, 1971, I, pp. 36-38; Cardoso, 1989, pp. 152-153.

⁷¹Cardoso, 1989, pp. 153-7. The loans were denominated in *crúzados* (1 *crúzado* (=400 *reis*)).

⁷²In 1797 the bonds had the face value of 20,000, 10,000, 5,000 and 2,400 *réis*. In 1798 the bonds had the face value of 1,200 *réis* and in 1799 had the face value of 6,400 and 12,800 *réis*.

⁷³Damião Peres (1971) considers that paper-money was created by the decree of March 1797, because after this law bonds were accepted in some transactions. José Acúrsio das Neves (1814) considers after that paper-money was created in July

Other proposals to solve the financial problems through public debt were presented in the last decade of eighteenth century. Authors linked to Lisbon Academy of Science, created in 1779, presented some important reformist projects⁷⁴. Rodrigo de Sousa Coutinho, who was president of the *Erário Régio* (1801-1803), besides holding other public offices proposed the issue of internal public debt, with tax revenues serving as collateral along the lines of what was happening in England⁷⁵. He suggested the creation of a bank, whose objectives were the management of the public debt and the issue of convertible bank notes. This would have required an efficient tax administration, together with the creation of new tax revenues.

Coutinho's proposed bank was not created and paper-money was an inconvertible fiduciary means of payment. The different solution adopted was justified by the preference of capitalists to fiduciary circulation that, despite the problems for the population and the state, gave profits to those who could hoard gold and silver coins⁷⁶. Further issues of paper-money were made in 1805 and 1807, in spite of the fact that in the first year of the century a law tried to forbid it. The preamble to the law of May 31, 1800 gave the reasons for this measure, as the loss to the royal treasury created by the interest costs, the inconvenience to trade and circulation because of the discount, and the price rises it induced.

The mistrust of wealth holders on the ability of the crown to honour the loan agreements are consistent with the lack of support for Coutinho's reform proposals. In 1796 the first public loan was a failure, bringing about the issue of paper money in 1797 as the next logical step to solve financial problems. The lack of credibility of the crown as debtor as well as the absence of an institutional control over financial matters were certainly responsible for that mistrust⁷⁷.

Price fluctuations were already seen by contemporaries as a consequence of the discount of paper money⁷⁸. The price index in chart 1 above shows that after a period of moderate inflation during the second half of the eighteenth century, prices increased after the 1790s. From 1797 to 1813 prices more than tripled, dropping in the following two years. If this inflation can be explained by the devaluation of paper money, this fiduciary means of payment was certainly not the only source. Napoleonic wars had disrupted production and distribution channels, namely of grain. The consequence was scarcity in supply and higher prices across Europe.

The circulation of paper money was also considered a loss to the state, because it made expenditure in metal coins, namely with army and navy, higher than it would otherwise have been. Devaluation reached 60% in the period of French invasions. Paper-money circulation was also limited to the cities of Oporto and Lisbon cities, as we learn from a representation of the *Mercantil Lisbonense* association dated September 1837⁷⁹.

The amount of paper-money in the three issues was about 17177 *contos*, the first issue being 97% of the total⁸⁰. Thus, the first issue in 1797 was much higher than the law allowed, which exhibit the dimension of the financial problems faced at the end of the eighteenth century. To have an idea of what this figure represents, if we compare it with total gold and silver coinage in the same period, 1797-1807, we notice

1797, because only after this date could bonds be accepted in all transactions.

⁷⁴ They were called memorialists, Cardoso, 1989, pp. 35-123. At the time there were no other academies of science in Europe.

⁷⁵ He distinguished English experience from others, such as the French episode of the *assignats* or the emission of paper-money during the war of American Independence. Public borrowing was to Coutinho a necessary means to finance war expenditure and useful one, in peacetime, for economic development. See Coutinho, 1795, I, p. 285.

⁷⁶ Cardoso, 1989, p. 149; Costa, 1992, p. 291.

⁷⁷ Cardoso, 1989, 149-150 and Costa, 1992 wonder about the existence of a «conspiracy» in commercial and financial circles to favour the issue of inconvertible paper-money instead of any solution that went through the creation of a bank to manage public debt and to issue convertible bank notes.

⁷⁸ See, for instance, Pinto, 1839, 16-17.

⁷⁹ See this representation in Pinto, 1839, 27-30. It is also interesting to note that the reasons given in this representation to the concentration of paper-money circulation in Lisbon and Oporto were the difficulties people outside the two largest Portuguese cities had in understanding that paper-money without precious metal was nevertheless "real" money

⁸⁰ Pinto, 1839, p. 21.

that the total coinage was 25% of paper-money issues⁸¹. Paper-money was certainly important in monetary circulation at this period, even if restricted to Oporto and Lisbon. We can also understand that this means of payment was responsible for the hoarding of coins. After the Liberal Revolution various attempts to extinguish paper-money were made. It was in this context that the Bank of Lisbon, the first issuing bank, was created in Portugal in 1821. Only half of the intended capital was raised, thus preventing the redemption of paper-money. Hence, in 1834 a decree tried to extinguish paper-money, but two years later its amount still attained about 3000 *contos*⁸².

During the 1810s internal public debt increased and in 1817 reached 16795 *contos*, from which only 36% was consolidated debt (see Panel C of Appendix Table 1). This difficult financial situation explains why in 1809 the crown had decided to sell its properties (*próprios*). Between 1810 and 1820 the crown sold essentially lands, but the result was only 439 *contos*, a very low amount when we compare with public debt, that continued to be more than 17,000 *contos* in 1819⁸³.

The crown also resorted to external borrowing, but external debts did not weight in the financial difficulties of this period, as they were not paid with internal resources. Foreign loans due to French wars were paid by the indemnities of the Treaty of Vienna and the foreign loans between 1815 and 1828 became Brazilian debt⁸⁴.

Some legal measures were taken to increase the circulation of coins in the early to mid 1800s. The law of March 6, 1822, tried to bring back gold coins into circulation, by increasing its legal mint price. While from 1798 to 1821 the total gold coined was only 2880 *contos*, in the 1822-1823 biennium it increased to 4362 *contos*. Another aspect of the monetary currency of this period was the circulation of several foreign coins - with increased transaction costs for economic agents⁸⁵.

The financial crisis of the 1790s had important consequences for public debt and the monetary regime. But, even though criticism of tax discrimination were made and reforms were presented, the actual solutions did not address the major weaknesses of the tax system remained. Between 1810 and 1820, the attempt to obtain greater revenue through the sale of crown properties also failed - as the amount was small in proportion of the public debt.

4.2. Revolution, constitutional rule and banking

The liberal revolution of 1820 was clearly influenced by the difficulties suffered by the Portuguese state after the 1790s. The French invasions, the subsequent war and abandonment of mainland Portugal by the Court had disruptive effects on a very fragile tax administration concentrated in Lisbon. Following upon the opening to foreign trade of the Brazilian ports, Lisbon became less important as a gateway to the Atlantic commercial network. Colonial trade also dropped and revenues collapsed.

The monopolies of the crown, which accounted for most of the state's income throughout the 1700s, had been closely related with the colonial trade. They were influenced by decreasing revenues from gold, which moreover were spent in Brazil after 1808. Losses on the tobacco contract were also felt due to commercial and political events, even though it maintained its position as a major source of revenue to the crown. Finally, from 1811 to 1820, the Portuguese government on the mainland territory incurred in substantial debts, in order to finance public administration and the army at a time when ordinary revenues were very low (Panels B and C of Appendix Table 1).

This period of difficulties made the peculiarities of the state's income more apparent. Just like the attempts to change the tax system and the resort to public credit from 1790 to 1808 were linked to

⁸¹ Calculated from *Estatística das moedas de ouro, prata, cobre e bronze, que se cunharam na Casa da Moeda de Lisboa desde o 1º de Janeiro de 1752 até 31 de Dezembro de 1871, 1873*.

⁸² Pinto, 1839, p. 21.

⁸³ Tengarrinha, 1993, 607-619.

⁸⁴ Mata and Valério, 1991, pp. 421-432.

⁸⁵ Reis, 1996; Sousa, 1991.

reformist thought on these topics, the liberal revolution of 1820 was another moment when reformist proposals resumed⁸⁶. However, the liberal experience had lasted too little time to bring about important changes.

The most relevant decisions concerned public debt and monetary circulation. While projects to create a bank in Lisbon in order to rule monetary circulation and to act as a privileged creditor of the state had been conceived in the late 1700s, the first bank with these characteristics emerged in Rio de Janeiro, just after the arrival of the Court in 1808 and the transfer to this city of the kingdom's capital⁸⁷. Then the Bank of Lisbon was created in 1821, in order to redeem the paper money that had been issued since 1797⁸⁸. A related measure was the effort to estimate the amount of the public debt, either consolidated or floating⁸⁹. Plans were made to privatise properties of the crown in order to pay the debt⁹⁰.

The creation of the Bank of Lisbon in 1821 to restore monetary stability after a time of inflation and distress in state finance during the Napoleonic wars, brought a major change to the financial system. The first Portuguese bank provided two main functions. One was related with its contract with the state to redeem the paper-money, receiving the monopoly of note issuing. Due to this «public» function, the Bank of Lisbon started a long period of financial assistance to the state. The second purpose of the bank was the practice of the commercial operations of discounting and issuing foreign bills of exchange, discounting government debt titles, keeping interest-paying deposits or providing loans.

Banking operations were not absent before the creation of the Bank of Lisbon⁹¹. The privileges granted to the first bank and the instability following the first liberal revolution certainly prevented the emergence of other banks before 1835, when the *Banco Comercial do Porto* was granted the note issuing privilege in the northern part of the country and broke the monopoly enjoyed by the Bank of Lisbon. This rewarded the assistance given to the liberal party by the commercial interests associated in the *Associação Comercial do Porto*.

Tax administration was disrupted in the 1820s, customs' revenues diminished and the tobacco contract (accounting almost 20% of state revenues) did not find contractors for the period 1824-1826⁹². At last, the contract was awarded, but with a drop of 28% when compared with the revenue for the period 1821-1823⁹³. The 1822 budget presented a deficit of 1,607 *contos* (22% of the revenues), much more important than the 246 *contos* deficit (only 3% of the revenues) in the 1821 budget⁹⁴.

Furthermore, state revenues for the two years 1821 and 1822 displayed a substantial reduction when compared with budgets for previous years⁹⁵. The difficulties in state finance and the political instability

⁸⁶ Nevertheless, it is interesting to note that the petition movement starting in 1820 (similar to the French *cahiers de doléances*) and lasting until 1822, do not present many petitions about taxes. Only complaints about the excise and their inequality between localities were relatively frequent. It may prove that tax burden was not very high and abuses in taxation were not perceived as distressing. Petitions on paper money were much more frequent, as well as complaints against seigneurial duties (Pinheiro, 1992; Silbert, 1968; Monteiro, 1993).

⁸⁷ Borges de Macedo, 1963; Cardoso, 1989; Cardoso, 1997, Arruda, 1986, pp. 194-197.

⁸⁸ This was like other banks created in Europe, Lains, 1995. Some months before the creation of the Bank of Lisbon, the Minister of the Treasury estimated that the paper money issued since 1797 amounted to 17,000 *contos de réis*, from which less than 7,000 *contos* had been discounted until then (Pinheiro, 1992, p. 43). See also Reis, 1997.

⁸⁹ Creation of the *Comissão para liquidar a dívida pública* (Committee to settle the public debt) in 27 de Outubro de 1820 (Manuel Fernandes Tomás, «Relatório sobre o estado e administração do Reino», 1821; Silveira, 1987, p. 523; Pinheiro, 1992, pp. 12 and 36). It resulted in the consolidation of the floating debt to officers, soldiers and royal suppliers in 1821 and 1822. See Pinto, 1839.

⁹⁰ A law with this aim was discussed in the Parliament during the months of March and April 1821, but not approved.

⁹¹ But they were mixed with other activities and had not achieved any specialisation Rocha, 1996a e 1996b; Pedreira, 1996.

⁹² See *Relatório* de Manuel Fernandes Tomás already mentioned and its assessment in Borges de Macedo (1995).

⁹³ From 1821 to 1823 the tobacco monopoly yielded 1,351 *contos* (Santos, 1974, I, p. 52). In 1822 the contract was rented by 970 *contos* to the period 1824-1826 (Pinheiro, 1992, p. 29).

⁹⁴ Silveira, 1987 for the 1821 budget; Pinheiro, 1992, for the 1822 budget. Data presented by Reis (1997, p. 37) for the period 1819-1823 reveal an annual average deficit of 2,849 *contos*, reaching 37% of the state revenues.

⁹⁵ In 1821 and 1822 the state revenues were almost -40% less than the revenues for 1817, and almost -15% less than the revenues for 1812, a very difficult year for state finances, just after the end of the French wars in Portuguese territory.

that followed on the end of the first constitutional experience were not the most favourable context for any reform or any improvement in the financial situation⁹⁶.

4.3. Tax and monetary reforms

The excise law of 19 April 1832, decreed by the new Treasury minister, Mouzinho da Silveira, reflects a new tax design. All the tax duties paid on transactions of movable goods were abolished, as well as toll taxes paid in some municipalities. The excise was maintained but only on real property transactions. Therefore, the old tax on consumption was completely transformed into a tax on property sales. The preamble of the decree constitutes a programme of radical changes to the tax system. The enormous variety of taxes surviving from the accumulation of duties over centuries of fiscal history was to be rationalised and the fiscal system reduced to only two taxes: the custom tax on imports and the direct tax based on the old *décima*⁹⁷.

The abolition of the taxes on transactions was not complete. The excise and similar taxes paid in Lisbon were maintained in Silveira's decree. It was the most complete acknowledgement of the importance played by this tax as a source of state revenue. It was also an acknowledgement of the difficulties faced in tax collection across the country. In the mid 1850s, taxes on consumption were reintroduced as local taxes and became important sources of revenues for municipal councils. Municipalities retained the collection of local taxes on consumption, which had been abandoned by the central administration, because they were difficult to impose and unpopular. Lisbon was the only place where the consumption taxes were maintained as central administration tax until 1922. Therefore, the biases displayed by the structure of the revenues since the 1600s were perpetuated throughout the 1800s: firstly, the concentration of the state revenues in Lisbon (largely based on customs and consumption duties); secondly, the importance of the revenues resulting from the tobacco contract⁹⁸.

The rationalisation project proposed by Mouzinho da Silveira was not implemented. The importance that the revenue tax should have in the fiscal reform was condemned by the situation of the public administration and the state of civil war existing in Portugal until 1834.

With the end of the civil war more urgent matters required the attention of the liberal governments. In fact, the financial situation of the kingdom had not improved when compared with the 1820s. The public debt almost doubled since the beginning of the civil war in 1832. All this new debt was foreign and rose from a proportion of almost 30% of national income in 1832 to more than 55% in 1834⁹⁹.

Together with the necessity to control the chaotic monetary circulation (heterogeneous composition of paper money issued from 1797 to 1799, convertible notes from the Bank of Lisbon which later became inconvertible and a large variety of coins from different countries), the public debt was the primary policy challenge from 1834 on. All financial measures taken by successive governments, in this period of intense political instability which lasted until 1851, must be viewed with this in mind.

Capital markets helped finance the public deficit throughout the period. As the deficit remained particularly high in the 1830s, increased by the pressure attributed to the debt service¹⁰⁰. Alleged solutions to the budget deficit contributed to exacerbate the situation. Civil servants had their salaries reduced or were paid by debt titles. State suppliers had their payments postponed and eventually

⁹⁶ Reis, 1997, 37. There were also attempts to reform the tax system throughout the first constitutional experience as mentioned in Pinheiro 1992, pp.46-58.

⁹⁷ The law of 30 June, 1832 abolishing the ecclesiastic tithe gives a critical importance to the *décima* in the framework of the future fiscal system.

⁹⁸ What was left of the monopolies which had contributed so much to the royal treasury in the past Mata, 1993b.

⁹⁹ The official committee appointed to evaluate the debt considered the task almost impossible according to Reis, 1997, p. 26 as it was a *dívida insondável*. In the beginning of the civil war the public debt amounted to 32000 *contos*. Until 1834, both sides had been responsible for foreign debt amounting to 25500 *contos* according to Mata and Valério, 1994).

¹⁰⁰ Data on public revenues and expenditures from 1819 to 1847 is available in Reis, 1997, p. 37.

converted in debt titles¹⁰¹. The violence and the illegitimacy of these means exacerbated the disbelief in the capacity of the state to defend the property rights. Suppliers and potential creditors run away from contracts with the state or attributed them a risk premium. The support of civil servants was given up too.

In order to cope with debt obligations, Church property was first nationalised and then sold to private bidders together with crown estates. The sales were devised as a way to bring extraordinary revenues into the treasury. The results were insignificant, either as a source of revenue to redeem consolidated debt (either foreign or domestic), or as a way to accept state annuities as payment. However, the sale of crown and Church estates helped retire public floating debt and paper money¹⁰².

There were no other sources of extraordinary revenues comparable to the nationalised estates. Incompressible budget deficits were financed through a variety of short term debt instruments – bills, contracts or promissory notes – which created a market for public debt titles. Like the paper money issued from 1797 to 1799, the nominal value of these titles were traded at a discount, representing the perceived sovereign default risk.

In 1842 a new government was formed, supported by a larger parliamentary majority. Financial stabilization coupled with infrastructural modernisation (roads, railroads, ports) formed the program of the new administration led by the Duke of Terceira, but whose main personage was Costa Cabral, labelling the period from 1842 to 1846 as the *cabralismo*¹⁰³.

The first task of the new government was to restore the financial credibility of the state. It tried to reduce expenditures, to increase revenue through land tax reform and new taxes and to compress the debt service, through the conversion of the foreign debt to a fixed rate of interest of 4%. Furthermore, it tried to consolidate the floating debt through a long term loan associated with the renewal of the tobacco monopoly in 1844. The winner of the public auction would pay an annual rent to the government and lend 4000 *contos* in order to redeem the floating debt.

The second package of the program dealt with the modernisation of the infrastructures. In order to give stronger incentives to private investment the state backed the projects, either by granting exclusives that would secure amortisation, or by subsidising those investments. Then better transports would increase wealth and expand the tax base. Financial stabilization, in turn, might avoid crowding out effects of the public debt on private capital formation.

New banks were created, as the *Companhia União Comercial*, coming out from the alliances between Lisbon's capitalists in order to bid at the auction of the tobacco monopoly¹⁰⁴. It participated not only in state finance, but also developed new activities in commercial banking and was a direct competitor to the Bank of Lisbon in the note-issuing business. The *Companhia Confiança Nacional* was another financial institution, born in 1844 to raise the 4000 *contos* associated with the tobacco contract, and to finance the business company created to carry out the modernisation of the infrastructures¹⁰⁵.

The revolt in Northwestern Portugal (*Maria da Fonte*) led to another civil war in 1846 showing the incapacity to build up an agreement on the constitutional regime. The programs of financial

¹⁰¹ See other cases in Reis, 1997, pp. 49-51. In 1837, the payment of the debt interests was suspended and substituted by new debt titles which aggravated the lack of the confidence on the capability of the Portuguese state to honour its commitments. Mata, 1986, p. 81.

¹⁰² This intention is clear from the law of 30 May, 1834. However, only 11% of the amount of this operation was paid in cash (Silva, 1989 and 1993), which means that the 726 *contos* received between 1835 and 1843 did not match the service of the foreign public debt in 1835 (interest alone was estimated at over 1100 *contos* by Pinto, 1839; see also Mata, 1986 and Mata and Valério, 1991). In contrast, privatisation helped to redeem public floating debt and paper money, as most of the 6600 *contos* of the property sold were paid with various types of floating debt titles, including paper money.

¹⁰³ Ramos, 1990, pp. 200 ff and Reis, 1997, pp. 62 ff present the main features of *cabralismo*.

¹⁰⁴ The *Companhia União Comercial* was created in the same year by Joaquim Pedro Quintela and Vicente Gonçalves Rio Tinto, who lost the tobacco contract to another group of capitalists.

¹⁰⁵ Its major financial innovation consisted in the project to create a network of provincial saving banks, which would form the basis of its lending business: to the state and to finance the *Companhia das Obras Públicas* Reis, 1997, 143-151.

stabilization and infrastructural modernisation promoted by Costa Cabral resulted in the bankruptcy of the financial and public works enterprises used as vehicles for the projects.

4.4 Gold standard and after

During the 1850s paper money was totally redeemed, the circulation of the inconvertible notes of the Bank of Lisbon was reduced (they were eventually withdrawn in 1856, together with a multitude of foreign coins). This paved the way for monetary reform, which occurred in 1854, when Portugal joined the gold standard. The decision marks the beginning of a virtuous cycle during which the *real* achieved again convertibility and stability. Between the 1850s and the early 1890s nominal and real convergence to the European average was recorded, the longest to date under a democratic regime¹⁰⁶.

Monetary stability followed the new political period opened up in 1851 with the Regeneration movement: «a revolution to end all the revolutions», as it was then defined. The different liberal factions settled an agreement about the political regime, which was sanctioned in 1852 by constitutional changes. The political scene was pacified as the two major parties agreed to alternate in power. There was a broad consensus about economic modernisation and institutional reform. The introduction of the metric system, new economic legislation and a vast plan of public works were based on a general awareness of the need to remedy the backwardness of the country.

Another important feature of the monetary system established in 1854 was the competitive nature of note issuing for most of the country, with eight joint stock banks issuing convertible paper money, including the Bank of Portugal. It succeeded the Bank of Lisbon in 1846 but was granted the monopoly in the Lisbon district, which included the largest financial market¹⁰⁷. The north-western part of Portugal, where note issuing banks were concentrated was also the place of departure for most of the emigrants going to Brazil and other New World destinations. Banks provided remittance facilities to these emigrants, discounted and issued bills of exchange, or foreign currency exchange even when they did issue notes¹⁰⁸. As a result the concentration in banking decreased at this time.¹⁰⁹

Chart 3 shows that full convertibility of the *real* into gold allowed higher debt financing of the government deficit. The credibility of government policy was a crucial element to support the program of public works outlined by the new Regeneration governments - whatever the motives invoked for joining the gold standard¹¹⁰. Indeed, the credibility effect was even stronger than the international crisis of the early 1850s. The stability of the gold standard brought about the external reputation which was essential to make Portuguese state securities attractive to foreign investors. The debt would then function as an anticipation of future state revenues, maximised by the positive effects coming from the public investment on social overhead capital formation.

Chart 3 about here

For long-term stability, however, it was also essential that tax efficiency would cope with the substantial increase in the service of the public debt. The partial nature of the tax reforms of the mid 1800s, the inability of tax collection to span the territory turned debt service into a threat to the

¹⁰⁶ Appendix Table 5 and Braga de Macedo, 1996. The inverse relationship between democracy and budgetary discipline was tested by Gomes and Tavares (1996) for the early 20th century. See also Tavares and Wacziarg (1996) for the relationship between democracy and growth. See also Braga de Macedo, Eichengreen and Reis, 1996.

¹⁰⁷ For details on the crisis affecting the Bank of Lisbon in the aftermath of the 1846 revolution see Reis, 1997, ch. 4 and Mata and Valério, 1994, p. 147.

¹⁰⁸ In 1858 existed 5 banks in Portugal and in 1865 there were 14, half of them chartered with note issuing facilities. In 1875 its number rose to 51 (Justino, 1988-1989, II, 212).

¹⁰⁹ The financial and banking crisis of 1876 meant the demise for some of these new banks, but it was the aftermath of the 1891 financial crisis which led to two important mergers in Oporto banking establishments. Reis, 1991, pp. 51-52; Reis, 1994, p. 823; Lains, 1995, pp. 11-12.

¹¹⁰ Thus Reis, 1996, p. 175-176 sees «no grounds for supposing that one of the motives for adopting the gold standard was the desire for easier access to the international capital market»

country's solvency. Customs revenues and the tobacco contract (this latter surviving from the old monopolies) accounted for almost 50% of the state income in 1890. In contrast, the direct taxes diminished their weight in the fiscal revenue throughout the period: in per capita terms they only increased 14% between 1864 and 1890, against 95% in customs taxes. In territorial terms most of the state revenues continued to originate in Lisbon. Adding the consumption taxes of Lisbon to the part of custom taxes paid over the imports through the port of the capital city, we obtain almost 40% of all state revenues. With the inclusion of direct taxes and other duties paid by the inhabitants of Lisbon the proportion would certainly be greater than 50%¹¹¹.

These characteristics of the fiscal system constitute its structural insufficiency, threatening the stability of the period. The last years of the 1880s saw the return to higher deficits in the public accounts. Moreover, the domestic political situation deteriorated, with republican agitation and frustrated revolution in 1891 suggesting a decline in the legitimacy of the monarchy itself. Three other major events were responsible for putting an end to this period: the British ultimatum in connection with Portugal's claim of the territories between Angola and Mozambique, the bankruptcy of Baring, the London banker of the Portuguese crown, the difficulties in Brazil, affecting the prospects about emigrant remittances.

The suspension of the gold standard in 1891 occurred well before the general movement away from the international monetary system at the beginning of the First World war. The first motive to the suspension of the gold standard must be attributed to the high trade deficit. Emigrants' remittances constituted the variable that allowed the equilibrium in external payments. The Brazilian difficulties in the late 1880s and early 1890s affected the flow of migrant remittances, shocked the external equilibrium and disturbed the expectation of long term exchange rate stability. The second motive came from the structural insufficiency of state finance, exacerbated from 1888 to 1891 by exceptionally higher public deficits and the unavailability of external financing¹¹².

The monetary consequences of the suspension of the gold standard were twofold. First, due to the difficulties of other issuing banks and their bankruptcy in 1891, the Bank of Portugal gained the monopoly of bank notes issue in 1891. Second, the *real* started a continuous movement of depreciation against the sterling until 1898. This movement was reversed with the increase in the remittances from Brazil and increased demand for the Portuguese currency. In 1905 the level of the exchange rate prior to the suspension of the gold standard was attained, but there was no attempt to come back into convertibility.

The financial and monetary crisis at the beginning of the 1890s had strong incidence in financial policy. The incentives towards public investments in the country's infrastructures ended in the 1890s, opening up a more restrictive policy. In addition, the response to financial difficulties followed the very same paths than before the adhesion to the gold standard. In order to reduce expenditures the payment of the foreign public debt amortisation was suspended. The increase in state revenues came from rises in existing taxes, some of them with a temporary character, but which turned into permanent¹¹³. Domestic and foreign creditors were taxed too. The interests received by the internal creditors were subjected to a new tax of 30% after January 1892. Six months later the external creditors endured the budgetary difficulties of the Portuguese state. From June 1892 the Portuguese government suspended the payment of two thirds of the interests based on the foreign debt. Being paid in foreign currency this second type of interests became much more onerous, in a time when the *real* was falling against the pound.

As a result of these measures the reputation of the state fell even further and the recourse to foreign loan became impossible - until the Portuguese involvement in the First World war. The unilateral character of hidden or overt taxes over the interests on public debt exacerbated the disbelief in the

¹¹¹ These estimates are based on the data presented in Mata, 1993b. See also Mata, 1993a

¹¹² Public deficit increased about two thirds between 1884-1887 and 1888-1891, from, respectively an average of 8,000 *contos* to 13,500 *contos*. (Mata, 1993b and Mata and Valério, 1994).

¹¹³ There were no tax changes, except for the urban estate tax created in 1899 Mata, 1993b.

capacity of the state to support the property rights.

Finally, there was an increase in the revenues coming from patrimonial sources, even if their weight was much lower than in earlier times¹¹⁴.

On 5 October 1910 a republican revolution ended the constitutional monarchy. Symbols of the old rule, the flag, the national anthem and the currency were changed with the new regime. On 28 March 1911 the real was replaced by the *escudo*, which however remained inconvertible.

5. Conclusion

The Portuguese crown had to preserve national sovereignty over borders defined in the XIII century in the face of external military threats from neighboring states. The social contract enforced by the crown until the early XX century relied on the ability to obtain increasingly expensive warfare. The pressure to raise revenue became a motive for fiscal change since medieval times, as war provided social legitimacy for tax reform or currency depreciation.

In 1387, when the main source of revenue was still land properties and seigniorial rights, municipal excises (*sisas*) were transformed into an universal tax with a comprehensive base. The new tax was supposed to pay for the war with Spain. It had a contractual origin insofar as it was approved by the *Cortes*, a traditional form of estates representation which acted as guarantor of private property rights. In the early 1500s, creditors began accepting registered bonds from the crown and internal public debt emerged. There were also short-term loans issued in Flanders which were consolidated in 1560. Yet revenues came primarily from monopolies established on trade and other colonial resources, such as gold, and from custom duties collected in Lisbon.

The fiscal and monetary institutions of the XVII century reflect Spanish rule in the 1580s and the restoration of independence after 1640. Until 1688, successive debasements of gold and silver coins were required to pay for the war. The tenth (*décima*), created in 1641, was a direct tax levied on income coming not only from real estate, as it was the case in the rest of Europe, but also from labor, commercial and industrial activities and interest on loans and accounting for 8-10% of total revenues.

The contrast with England, a country presented as paradigm of the evolution from the domain state to the tax state, is the continued dependence on revenues that were not primarily based on taxes to secure financial stability. In fact, taxes on domestic residents and especially on those living outside Lisbon were lower and more poorly collected because of the importance of domainial revenues. The tax revenues of what was essentially a city-based system were as sensitive to fluctuations in foreign trade as they were to foreign invasions.

The XVIII century began with the discovery of gold mines in Brazil, allowing a period of monetary stability, which was not disturbed by the increase in the legal price of silver in 1734 and 1747. The crown received royal duties over gold production (*quinto* or *capitação*). Consequently gold arrivals generated a tax revenue and contributed to maintain a financial structure based on monopolies and custom taxes. The crown ordered the coinage of the gold received in bullion or dust and was the major customer of the Lisbon mint. When extraordinary public expenditures found the treasury short of means gold coinage was the last resort. Moreover, after 1725, most of the gold coming from Brazil to private individuals was coined at the Rio de Janeiro mint.

Gold financed the payments deficit with England and Europe at large, was used for debt redemption and privately hoarded. The rest circulated. Silver was used in the trade with Asia. While Portugal did not have different monetary systems for internal and external trade, domestic circulation and credit were concentrated in the coastal areas.

¹¹⁴ Concessions and exclusives to private groups became important to flow additional revenues into the Treasury. Ramos, 1993, pp. 161-162 calls these close relations between the state and some economic groups «financial feudalism».

The importance of domainial revenues may also explain why institutional reforms did not develop in XVIII century Portugal as early as might be expected. The crown was unable to extend the modern features of its financial system and to resort to higher levels of consolidated public debt, the only way to deal with extraordinary expenditures. Wealth-holders did not support the modernization of state finance through the creation of a bank responsible for managing public debt and issuing convertible paper money. Perhaps the government's commitment to upholding property rights was not credible enough.

Pombal's fiscal reforms of 1760 followed the decline in Atlantic trade and the increase of expenditures due to the European wars. They include regulations on production and the gold trade, on custom duties and the repression of smuggling. With the creation of a central treasury (*Erário Régio*), the collection of the tenth was placed under the control of the central government.

At the turn of the century, revenues coming from foreign trade and from the monopolies of colonial goods represented more than 50% of the total. The dramatic coincidence of the increase in military expenditures as a result of the French invasions and the end of the trade monopoly with Brazil brought about a very large deficit.

The only solution to these financial difficulties was the resort in 1797 to inconvertible paper money - which was responsible for a period of raging inflation which lasted until the 1820s and a revolution characterized by anti-seigneurial demands. The revolution did not lead to tax revolts. Revenues coming from domainial sources had a higher share in Portugal than elsewhere in Europe and the pressure to increase expenditures was lower. This may explain why institutional and fiscal reforms allowing a greater resort to public debt develop later than in major European countries.

Following the French invasions, government revenues fell and expenditures increased leading to attempts to reform the tax system and to resort to borrowing which proved unsuccessful. The tradition of currency convertibility and stability with a low public debt, which had been established during the XVIII century, was broken by monetary disorder.

The constitutional government tried to simplify the tax system, keeping custom duties and the tenth, and making the *sisá* a tax on real estate transactions. The first banks were created. Church properties were nationalized and later sold to private entrepreneurs. The proceeds were used to redeem the floating debt but- in spite of reforms - tax revenues were not sufficient to support the attempts to consolidate public debt. Overall, deeper institutional reforms were needed to provide political and financial stability and warrant the support of commercial interests.

The political and constitutional framework needed to sustain financial stability and to reform the tax system was lacking and problems in monetary circulation lasted until the early 1850s, when the currency became convertible and money creation was subject to well defined rules. The constitutional agreement that pacified the country in 1852 and the globalisation in the capital markets associated with the heyday of the classical gold standard also helped sustain this experience of real and nominal convergence under democratic rule. Monetary stability based on currency convertibility supported more extensive resort to debt, and it was coupled with rates of GDP growth higher than in the rest of Europe.

Foreign held public debt as a way to finance short-term deficits was a development strategy which assumed that in the long term the increase in tax revenues would take care of the debt service. This required an efficient public administration, capable of collecting taxes. But attempts at increasing tax revenues originated strong social opposition, as it was the case of the revolt against the introduction of a consumption tax in 1867-1868 (known as *Janeirinha*). Earlier attempts at reforming property surveys, which should increase land taxes, met with the same fate. As direct tax revenues declined, custom duties and taxes on tobacco rose to 50% of the total. Low taxes, especially outside Lisbon, hindered the sustainability of government accounts and the solvency of the country. At the end of the 1880's budget deficits increased again and the political scene began to show signs of instability which erupted in a suspension of currency convertibility in 1891. Inconvertibility was to last through most of the XX

century.

If, for the monarchy, convertibility had been the rule rather than the exception, the pressure of war remained through the early XX century and so did the difficulties in tax administration. Indeed the resilience of the latter may be the lesson from Portuguese monetary and fiscal history, which retains the greatest current policy relevance.

Monetary disorder and financial crisis have been associated with Portuguese constitutional monarchy rather than with the republic. Yet the crown maintained civil rights and financial freedom during four decades whereas the republic never introduced the latter and soon lost political freedom as well. The monetary myth is ingrained in the collective memory of people. Somehow the unhappy sequence of French invasions, loss of Brazil and civil war, which preceded entry in the gold standard, and the demise of the monarchy, which followed the exit, are more salient than the virtuous cycle of four decades.

There are other examples of this selective memory in Portuguese history. Some even occurred in the recent past. Rather than favoring a particular interpretation for the resilience of monetary myths, this paper hopes to contribute to making the legacy of Portuguese fiscal and monetary institutions better understood at home and abroad. This will hopefully lead to further research on the remarkable but forgotten inheritance of the *real* on national fiscal and monetary institutions.

Table 1: War, Taxes and Gold

	1588	1716	1762-1776 ¹	1801-1803
Military % Total Expenditures	26	n.a.	52	70*
Total Revenues % Debt	56	n.a.	87	61
Gold coinage % arrivals	n.a.	11	24	n.a.

¹ Annual average *1801

Sources: Appendix tables 1 and 2.

Table 2: Structure of state revenues (%)

	1588	1619	1716	1762-1776 ¹	1797-1803 ¹
<i>Décima</i>	-	-	-	12	9
Customs, excises and other indirect taxes (Percentage from Lisboa)	68 (54)	75 -	58 (60)	40 (68)	54 (76)
Crown monopolies, patrimonial and other revenues	32	25	42	49	38
Revenues (=100%) in 1750 <i>contos</i>	1358	1771	4429	5033	3593

¹ Annual average

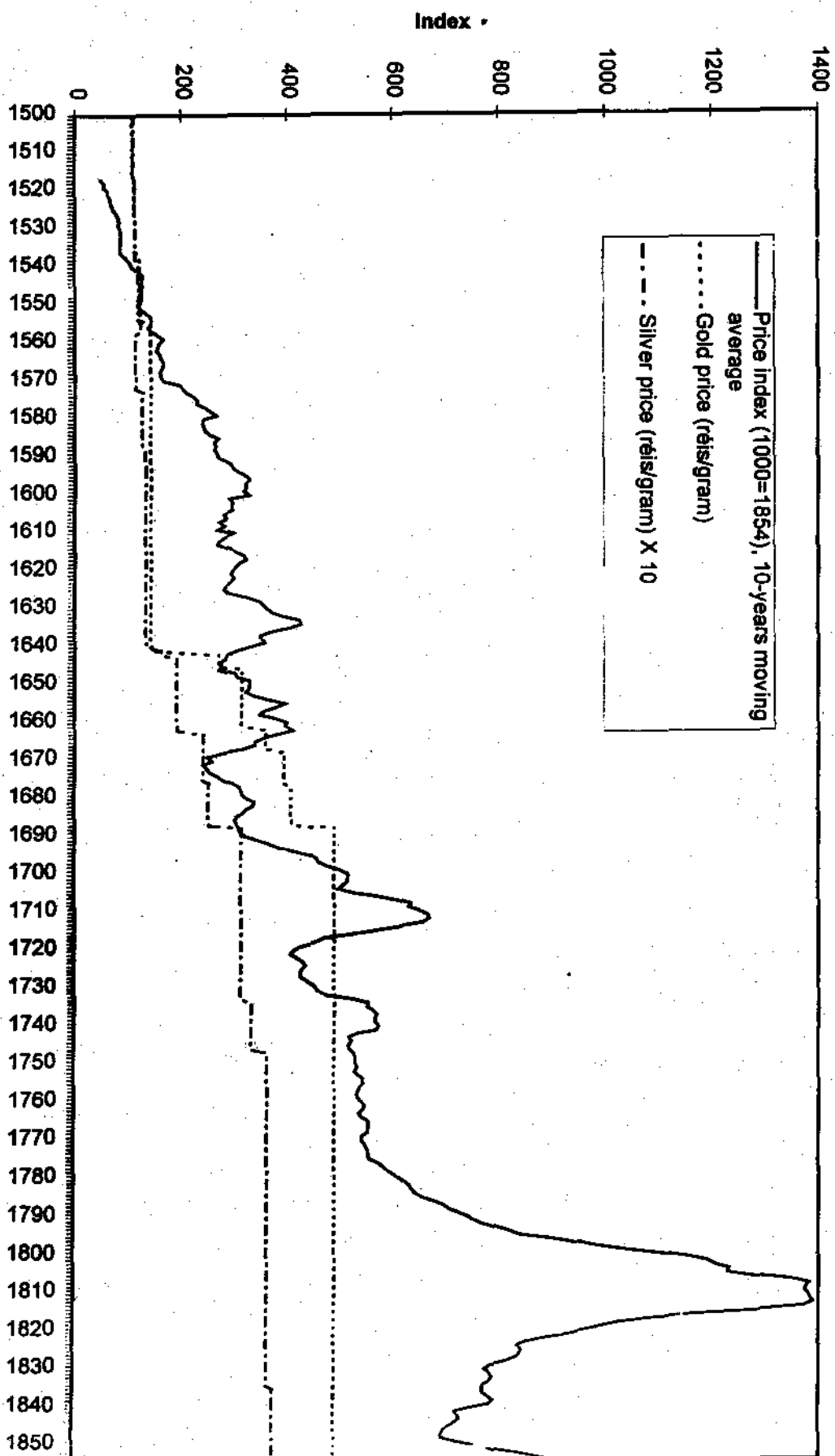
Sources: Appendix table 1

Table 3: Comparative state revenues in 1763

Countries	State revenues (<i>contos</i>)	Population (millions)	State revenues per capita (<i>réis</i>)
Netherlands	13,600	1,9	7\$158
England and Wales	35,840	6,1	5\$875
Portugal	8,160	2,3	3\$548
France	51,360	21,7	2\$367
Spain	21,120	8,9	2\$373
Prussia	7,840	6,4	1\$225

Sources: State revenues – Bonney, 1995b, pp. 336-338; Population in 1750 – Vries, 1985, except for Prussia, Wehler, 1987 (information kindly provided by Luciano Amaral)
In 1763, 1 *livre* = 160 *réis*. (Morineau, 1985, p. 133).

Chart 1: Prices of goods and money (1500-1854)



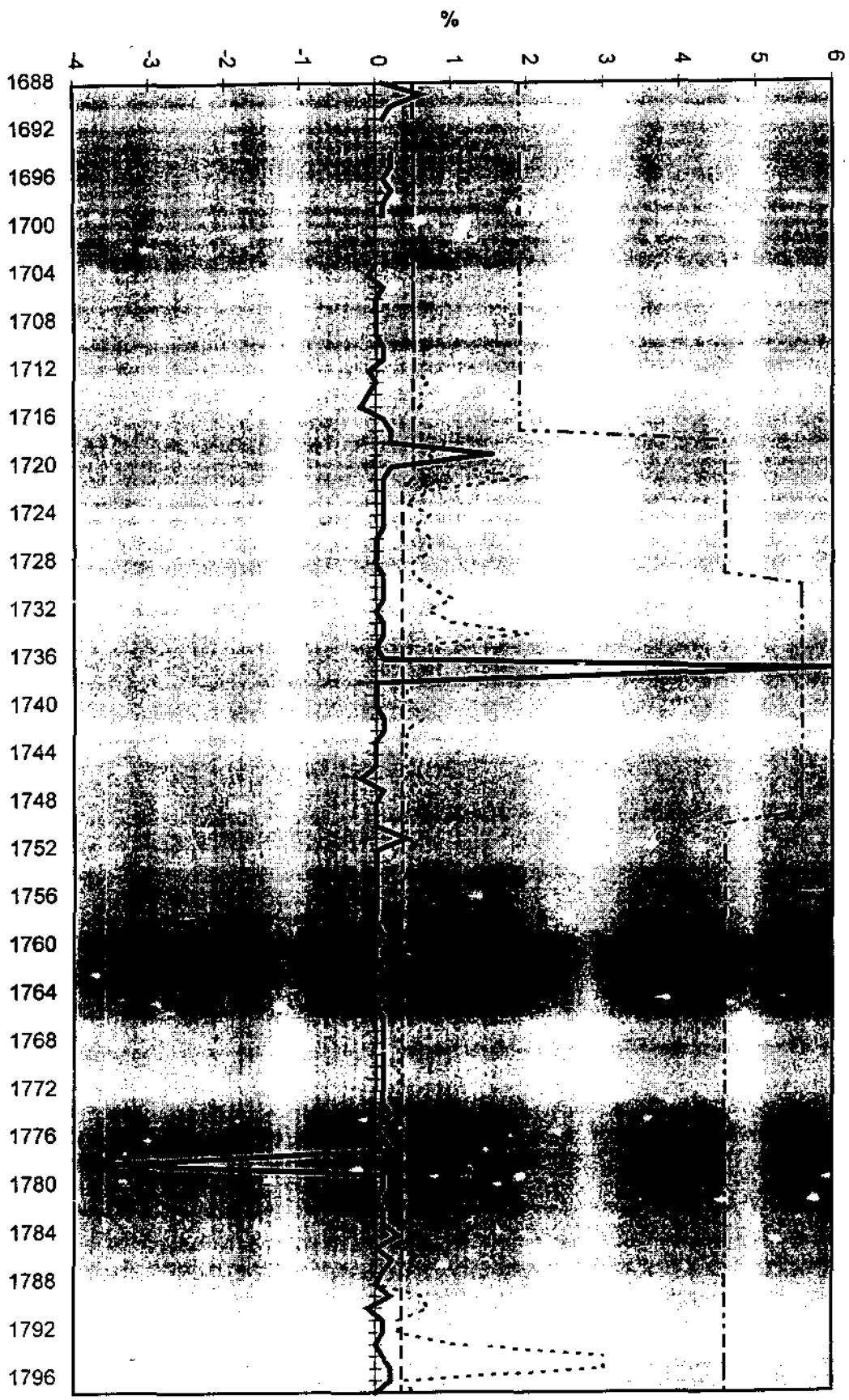
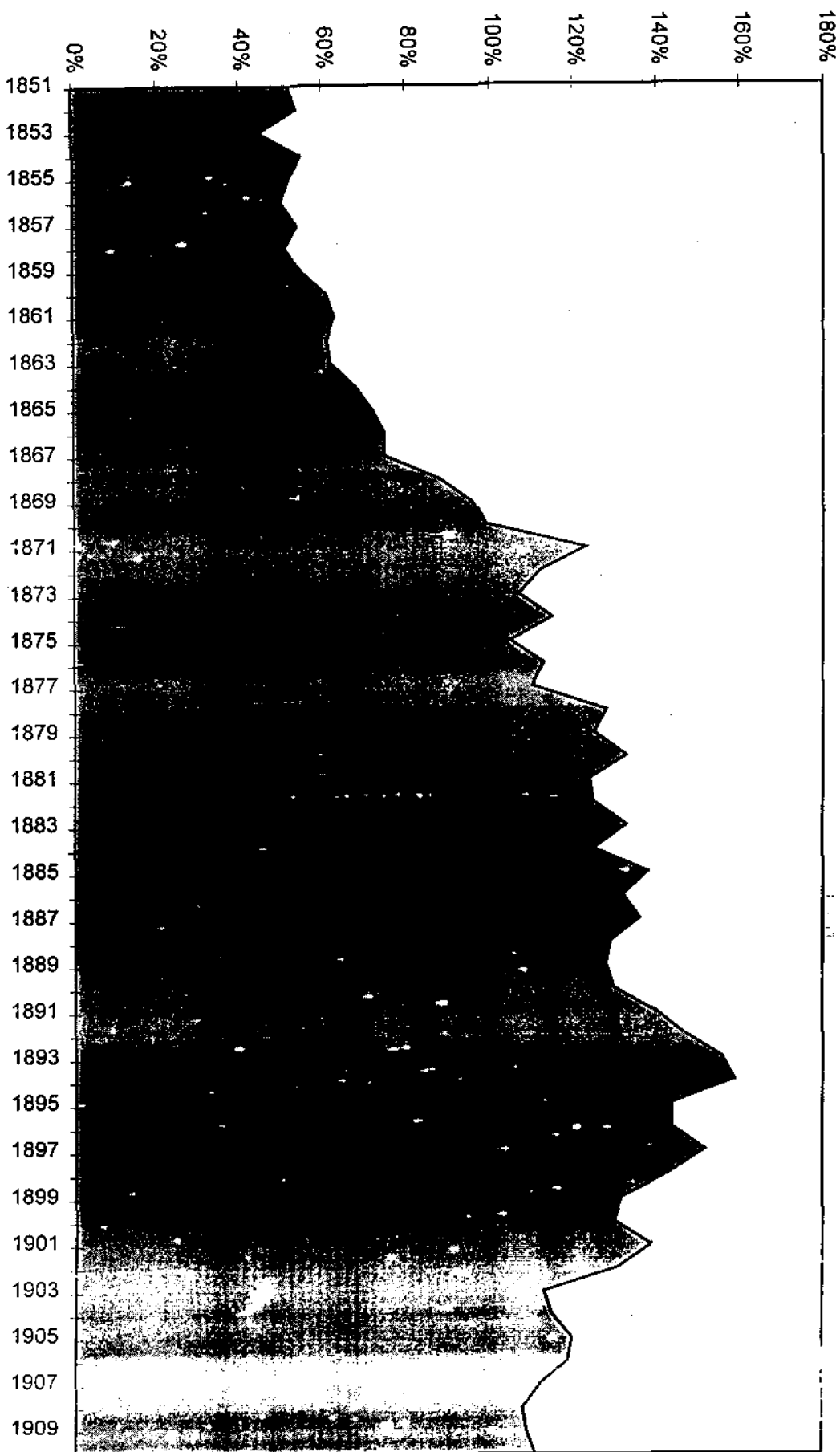


Chart 2: Gold Price Spread (1688-1797)

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 - - - LB
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Chart 3: Public debt % GDP (1851-1911)



Appendix Table 1: Fiscal Indicators (*contos*)

Panel A: Revenues (1557-1803)

Categories	1557	1588	1593	1605	1607	1619	1660	1681	1716	1762-1776	1797-1803	1804
<i>Customs</i>	55.3	216.5	154.7	310.0	390.9	395.5	365.5	531.1	1380.0	1261.3	2873.7	3615.0
Lisbon Customs	50.5	196.3	na	na	na	na	na	347.4	1084.8	na	na	na
Other Customs	4.8 ^a	20.2	na	na	na	na	na	183.7	295.2	na	na	na
<i>Décima</i>	-	-	-	-	-	-	200.0	200.0	na	581.7	646.9	1250.0
<i>Excise and other indirect taxes</i>	237.3	325.1	288.4	300.0	309.0	362.0	418.1	421.7	927.0	730.3	1179.5	1782.0
Excise from the country	183.7 ^a	203.8 ^a	225.4 ^a	210.0 ^a	181.9 ^a	194.1 ^a	196.6 ^a	196.6 ^a	200.0	326.5	374.2	381.0
Other indirect taxes from the country	6.0	23.4	15.4	10.0	34.7	44.0	77.7	77.3	410.0	54.1	86.9	390.0
Excise and other indirect taxes, Lisbon	47.6	97.9	47.6	80.0	92.4	123.9	143.8	147.8	317.0	349.8	718.4	1011.0
<i>Estate revenues and monopolies</i>	0.9	251.8	25.4	18.0	230.1	222.6	315.0	296.7	1555.0	2049.2	1852.3	2838.0
Estate revenues	0.9	44.6	14.1	na	43.6	42.3	13.7	na	190.0	86.9	773.1	935.0
Gold	na	40.0	na	na	9.9	10.0	-	-	345.0	614.9	0.0	0.0
Other monopolies	na	13.6	11.2	18.0	52.1	45.4	11.3	6.6	400.0	460.1	101.1	774.0
Pepper trade	na	153.6	na	na	124.5	124.9	na	na	60.0	-	-	-
Tobacco	-	-	-	-	-	-	290.0	290.1	560.0	887.3	978.1	1129.0
<i>Other revenues</i>	4.0	7.1	8.5	24.0	27.7	28.7	47.1	65.7	80.0	410.0	974.5	779.0
Total	297.5	800.5	477.0	652.0	957.8	1008.8	1345.8	1515.2	3942.0	5032.5	7526.9	10264.0

Sources and notes: see next page.

Sources:

- 1557: «Folha do que rende o reino e despeza delle deste anno presente de 1557» (published in Jacinto Augusto de Sant'Anna e Vasconcellos, *Relatorio acerca dos impostos e outros rendimentos publicos anteriores ao anno de 1832*, Lisboa, 1865).
- 1588: «Folha de todas as rendas desta coroa de Portugal» (published in Godinho, 1978a).
- 1593: Francisco Carneiro, «Relação de todas as rendas da coroa deste reyno de Portugal» (published in *Boletim Bibliográfico da Universidade de Coimbra* 1949, 19, 1-68).
- 1605: Manuel Severim de Faria, «Advertencia sobre a confusao q(ue) ha na receita e despeza da fazenda real de Portugal» (published in Hespanha, 1986)
- 1607: Luís de Figueiredo Falcão, «Livro de toda a fazenda e real património deste reino de Portugal» (published in Godinho, 1978a)
- 1619: Frei Nicolau de Oliveira, *Tratado das Grandezas de Lisboa*, 1620 (published in Godinho, 1978a)
- 1660: «Relação das rendas da Coroa» (c. 1660), BNL, Ms. 1459, FG, fl. 41-55 (published in Hespanha, 1986)
- 1681: «Relação do rendimento do reino de Portugal, 1681, por Bartolomeu Dias Ravasco» (published in Dias, 1985)
- 1716: Visconde de Santarém, *Quadro elementar das relações diplomáticas (...)*, V, pp. 248-9
- 1762-1776: annual average from data presented in Tomaz, 1988 on state revenues during the period.
- 1797-1803: annual average from data presented in Costa, 1992 on state revenues during the period.
- 1804: Biblioteca da Ajuda, 52-IX-24

Notes:

Values in *contos de réis*.

Revenues from the the empire were not considered, unless they were channelled into mainland Portugal, as it was the case of the *quinto* on Brazilian gold or the monopolies of the Mina gold or *pau-brasil*. Revenues from Azores and Madeira were not contemplated too.

There are several types of revenues without data for all the years presented in the previous table. Monopolies of the crown related with overseas trades and staples were the most notorious example.

na: data not available

* Includes other revenues collected through the *almoxarifados*, mainly estate revenues from the Crown. However its weight was diminute.

ª Does not include sea customs.

º Includes other revenues collected through the *almoxarifados*, mainly estate revenues from the Crown, and sea customs, with the exception of Lisbon.

º Includes other revenues collected through the *almoxarifados*, mainly estate revenues from the Crown, and inland customs along the Spanish frontier.

Panel B: Expenditures (1588-1827)

	1588		1681		1762-1776		1800		1801		1802		1812		1817		1821		1827	
	<i>contos</i>	%	<i>contos</i>	%	<i>contos</i>	%	<i>contos</i>	%	<i>contos</i>	%	<i>contos</i>	%	<i>contos</i>	%	<i>contos</i>	%	<i>contos</i>	%	<i>contos</i>	%
Military expenditures	246	26	585	43 ^a	2568	52	6680	56	9117	70	6025	60	6241	78	8908	77	4844	69	6092	68
Total expenditures	937	100	?		4946	100	11967	100	13011	100	10082	100	8018	100	11533	100	7038	100	8996	100

Sources: 1588, 1681 and 1762-1776, see previous table.

1800, 1801, 1802, 1812, 1817, 1821 and 1827, in Silveira, 1987.

Notes: ^a Estimation based on the proportion between military expenditures and royal house expenditures.

Panel C: Public debt (1557-1827)

Types of debt	1557	1588	1607	1776	1801	1802	1812	1817	1822	1827
Consolidated debt	941	1,423	3,299	5,800			6,339 ^a	6,083 ^a	20,000	15,002 ^b
Floating debt					10,126		10,722	10,712	18,000	13,920
Current debt					5,521	5,215	14,177	14,468		4,378
Other					1,200	965	3,519	4,338		400
Total debt	?	?	?	?	?	?	34,757	35,601	38,000	33,700

Sources: 1557, 1588 and 1607, in Godinho, 1978a.

1776 estimated from Tomaz, 1988.

1801, 1802, 1812, 1817, 1827, in Silveira, 1987.

1822, in Castro, 1965-1971

Notes: ^a Old consolidated debt (*padrões de juros*) is not included

^b Old consolidated debt (*padrões de juros*) is underestimated

Appendix Table 2: Coinage of specie in the Lisbon mint (*contos* unless otherwise noted)

Year	Gold Coinage (marcos)	Gold Coinage	Private Deliveries	State Deliveries	Balancing Item	Gold Arrivals	Silver Coinage (marcos)	Silver Coinage	Copper Coinage (arráteis)	Copper Coinage
1688	1134.76	116					83769.00	490	0.00	0
1689	14885.98	1534					97767.75	622	0.00	0
1690	7511.35	771					18147.12	116	0.00	0
1691	8394.63	861					7013.75	45	0.00	0
1692	0.00	0					7753.58	50	0.00	0
1693	0.00	0					3853.08	25	0.00	0
1694	871.20	89					4113.48	27	0.00	0
1695	983.95	101					927.97	6	0.00	0
1696	1252.48	128					6096.31	39	0.00	0
1697	1103.38	113					4608.13	29	0.00	0
1698	438.32	45					2012.20	13	0.00	0
1699	1332.53	137				0	932.34	6	0.00	0
1700	0.00	0				385	0.00	0	0.00	0
1701	0.00	0				824	0.00	0	0.00	0
1702	0.00	0				0	0.00	0	0.00	0
1703	10095.69	1034	1086	105	-157	952	0.00	0	0.00	0
1704	12448.83	1274	1148	76	50	0	87908.61	559	0.00	0
1705	1442.75	148	104	0	44	0	67883.83	432	0.00	0
1706	14361.80	1471	1312	30	129	1 600	66642.53	423	0.00	0
1707	3912.31	401	393	0	8	0	58395.31	371	0.00	0
1708	7099.67	727	1037	0	310	5600	4004.61	25	0.00	0
1709	19816.91	2030	1571	37	422	0	0.00	0	0.00	0
1710	23704.39	2430	2379	105	-54	0	0.00	0	0.00	0
1711	11745.06	1204	977	0	227	0	0.00	0	0.00	0
1712	18143.85	1860	1880	18	-38	6400	0.00	0	0.00	0
1713	2285.91	234	126	0	108	6281	0.00	0	0.00	0
1714	32347.96	3296	3198	0	98	2600	0.00	0	30267.00	10
1715	7105.57	726	660	193	-127	5200	0.00	0	0.00	0
1716	2639.21	271	261	0	10	2404	0.00	0	0.00	0
1717	2796.67	287	97	0	190	800	0.00	0	0.00	0
1718	4043.41	415	166	279	-30	3907	0.00	0	0.00	0
1719	11398.75	1185	1209	52	-76	3722	0.00	0	690.00	0.2
1720	16214.25	1664	1397	413	-146	4881	0.00	0	9010.00	3
1721	5069.78	520	388	6	126	1853	124.50	0.8	77637.50	29
1722	12351.15	1266	1023	221	22	9600	0.00	0	0.00	0

1723	18405.60	1886	1357	488	41	2325	0.00	0	0.00	0
1724	6793.77	697	471	0	226	3600	0.00	0	41741.00	14
1725	20406.11	2092	1405	670	17	12616	0.00	0	0.00	0
1726	12049.00	1235	457	709	69	6600	0.00	0	0.00	0
1727	3591.84	368	51	579	-262	8800	0.00	0	22246.50	7
1728	16610.25	1701	498	1566	363	3860	0.00	0	21807.00	7
1729	14411.38	1477	322	915	240	9400	0.00	0	0.00	0
1730	14802.05	1518	219	908	391	8400	0.00	0	0.00	0
1731	3131.02	321	249	73	-1	13135	256.53	2	0.00	0
1732	13650.36	1398	335	981	82	2245	0.00	0	0.00	0
1733	4356.78	447	11	744	-308	5440	0.00	0	44731.00	14
1734	4045.12	414	14	143	257	10999	0.00	0	73611.00	25
1735	22661.52	2321	890	1824	-393	2949	0.00	0	24766.00	8
1736	12106.57	1241	179	570	492	3200	0.00	0	50151.00	17
1737	2776.95	302	55	725	-478	9884	0.00	0	17172.00	6
1738	38996.00	3995	914	1421	1660	5000	0.00	0	0.00	0
1739	24697.62	2530	547	1941	42	8240	0.00	0	0.00	0
1740	24279.94	2488	1332	1600	-444	7556	0.00	0	0.00	0
1741	13391.02	1372	1571	809	-1008	9902	0.00	0	0.00	0
1742	30052.14	3079	585	702	1792	6564	0.00	0	10959.00	4
1743	27210.44	2787	1390	2083	-686	3806	0.00	0	34348.00	13
1744	26925.43	2758	1615	2113	-970	2309	0.00	0	45661.50	16
1745	31196.76	3196	1314	1252	630	5612	0.00	0	28946.00	10
1746	20925.38	2137	1192	1148	-203	5526	0.00	0	14765.00	5
1747	10856.43	1113	859	1122	-868	6130	17340.94	130	5148.00	2
1748	20213.95	2071	1003	283	785	6186	29560.91	225	13306.50	5
1749	18912.56	1937	784	1401	-248	6803	15700.03	118	31380.00	11
1750	4795.91	491	613	1183	-1305	8335	0.00	0	0.00	0
1751	25599.14	2632	799	1302	531	5458	0.00	0	6143.00	2
1752	8003.69	820	125	508	187	1211	10144.79	76	17181.00	6
1753	17261.71	1768	469	812	487	6950	1328.98	10	0.00	0
1754	14886.59	1524	299	1303	-78	5056	0.00	0	35906.50	13
1755	10982.80	1125	356	1079	-310	4961	0.00	0	0.00	0
1756	12670.80	1298	302	1123	-127	7309	0.00	0	0.00	0
1757	12918.34	1323	234	1134	-45	5336	0.00	0	38461.50	14
1758	12558.97	1286	181	488	617	1186	0.00	0	0.00	0
1759	572.05	59	57	687	685	6820	0.00	0	0.00	0
1760	22849.09	2341	95	1591	655	0	0.00	0	0.00	0
1761	13156.81	1348	222	1104	22	4000	0.00	0	83082.00	30
1762	835.93	86	69	0	17	1600	0.00	0	0.00	0

1763	18321.05	1877	83	1794	0	8400	0.00	0	0.00	0
1764	8836.40	906	412	494	0	4340	0.00	0	0.00	0
1765	8421.35	863	154	709	0	1200	0.00	0	138557.00	51
1766	11118.25	1140	67	1073	0	5100	0.00	0	61712.00	24
1767	9526.87	976	36	940	0	4800	0.00	0	0.00	0
1768	7583.74	777	124	653	0	800	0.00	0	0.00	0
1769	4850.10	497	51	446	0	3768	92342.87	694	0.00	0
1770	9357.67	960	136	824	0	2800	10336.65	78	0.00	0
1771	6361.47	652	31	621	0	1200	282.73	2	0.00	0
1772	9085.14	931	45	886	0	5400	0.00	0	0.00	0
1773	5149.56	528	96	432	0	2600	312.89	2	0.00	0
1774	4408.93	452	15	437	0	0	6185.26	46	0.00	0
1775	0.00	0	0	0	0	0	6347.16	48	0.00	0
1776	7965.62	817	157	660	0	6000	0.00	0	0.00	0
1777	132.68	14	14	0	0	0	0.00	0	49552.00	18
1778	5723.38	578	512	66	0	9360	734.28	6	18452.00	7
1779	3030.29	310	0	310	0	2400	8112.27	61	0.00	0
1780	4361.08	447	99	348	0	1960	31447.80	236	0.00	0
1781	5017.60	514	32	482	0	1680	44008.23	330	0.00	0
1782	2621.37	269	30	239	0	2800	74169.05	556	11967.00	4
1783	3723.05	382	153	229	0	3600	1004.44	8	0.00	0
1784	363.88	37	37	0	0	0	14238.54	107	0.00	0
1785	3157.92	324	22	302	0	0	1223.01	9	0.00	0
1786	253.43	26	26	0	0	2000	1236.30	9	32128.00	12
1787	2342.70	240	0	240	0	0	200.08	2	0.00	0
1788	0.00	0	0	0	0	1200	1124.56	8	0.00	0
1789	1707.60	175	61	114	0	0	0.00	0	0.00	0
1790	2381.95	244	46	198	0	0	0.00	0	0.00	0
1791	1214.27	125	60	65	0	0	1082.95	8	0.00	0
1792	2977.29	305	230	75	0	0	1768.22	13	33298.00	12
1793	422.52	43	43	0	0	0	35930.68	270	0.00	0
1794	116.85	12	12	0	0	0	22150.67	166	0.00	0
1795	158.45	16	16	0	0	0	45868.92	345	0.00	0
1796	3809.32	391	80	311	0	0	31496.57	237	0.00	0
1797	27.18	3	0	3	0	0	65011.90	488	7396.00	3

Sources and notes

- (1) The total coinage of gold, silver and copper coined, private and state deliveries of gold (after 1703) were calculated from the *Livros do Tesoureiro* of the Lisbon Mint by Rita Martins de Sousa (forthcoming). Gold arrivals from Michel Morineau (1985, pp 135-137 and pp 194-195) in *cruzados* were transformed into *contos*. Estimates by Morineau were reproduced and missing data set to zero. When Morineau presents ranges, a simple average was used.
- (2) Before 1763, private and state deliveries were reconstructed using the data on gold entered in dust or bullion and therefore do not necessarily add up, hence the balancing item until then.
- (3) The amounts in *marcos* (1 *marco* in Lisbon = 229.464 grams) were transformed into *contos* by multiplying by 0.102400 from the law of August 4, 1688. The balancing item reflects three adjustments. There is a lag between the receipt of gold and the minting, so that the receipts in one year were not necessarily coined in this year. There is no necessary coincidence between the legal value and the mint value (the difference is used to compute the spread in Appendix Table 3). The total minted includes recoinage but receipts do not, as there are only figures for gold in dust or bullion, but not in coins.

Appendix Table 3: Gold Spreads (%)

<i>Year</i>	<i>mint spread</i>	<i>legal spread</i>	<i>lower band</i>	<i>upper band</i>
1688	0.1	0.5	0.50	1.9
1689	0.6	0.5	0.50	1.9
1690	0.2	0.5	0.50	1.9
1691	0.1	0.5	0.50	1.9
1692	-	-		
1693	-	-		
1694	0.2	0.5	0.50	1.9
1695	0.2	0.5	0.50	1.9
1696	0.1	0.5	0.50	1.9
1697	0.2	0.5	0.50	1.9
1698	0.1	0.5	0.50	1.9
1699	0.1	0.5	0.50	1.9
1700	-	-		
1701	-	-		
1702	-	-		
1703	0.0	0.5	0.50	1.9
1704	-0.1	0.5	0.50	1.9
1705	0.1	0.5	0.50	1.9
1706	0.0	0.5	0.50	1.9
1707	0.0	0.5	0.50	1.9
1708	0.0	0.5	0.50	1.9
1709	0.0	0.5	0.50	1.9
1710	0.1	0.5	0.50	1.9
1711	0.1	0.5	0.50	1.9
1712	-0.1	0.5	0.50	1.9
1713	0.0	0.7	0.50	1.9
1714	-0.1	0.6	0.50	1.9
1715	-0.2	0.6	0.50	1.9
1716	0.1	0.5	0.50	1.9
1717	0.2	0.5	0.50	1.9
1718	0.2	0.9	0.50	4.6
1719	1.5	0.7	0.50	4.6
1720	0.2	1.0	0.50	4.6
1721	0.1	2.0	0.50	4.6
1722	0.1	0.7	0.35	4.6
1723	0.1	0.4	0.35	4.6
1724	0.1	0.7	0.35	4.6
1725	0.1	0.5	0.35	4.6
1726	0.0	0.7	0.35	4.6
1727	0.0	0.7	0.35	4.6
1728	0.0	0.5	0.35	4.6
1729	0.1	0.5	0.35	4.6
1730	0.1	0.7	0.35	5.6
1731	0.1	1.0	0.35	5.6
1732	0.0	0.7	0.35	5.6
1733	0.1	1.0	0.35	5.6
1734	0.1	2.0	0.35	5.6
1735	0.0	0.5	0.35	5.6
1736	0.1	0.4	0.35	5.6
1737	6.0	0.5	0.35	5.6
1738	0.0	0.4	0.35	5.6
1739	0.0	0.4	0.35	5.6
1740	0.0	0.5	0.35	5.6

1741	0.1	0.6	0.35	5.6
1742	0.1	0.4	0.35	5.6
1743	0.0	0.4	0.35	5.6
1744	9.0	0.4	0.35	5.6
1745	0.0	0.4	0.35	5.6
1746	-0.2	0.4	0.35	5.6
1747	0.1	0.6	0.35	5.6
1748	0.0	0.5	0.35	5.6
1749	0.0	0.4	0.35	5.6
1750	0.0	0.4	0.35	4.6
1751	0.4	0.4	0.35	4.6
1752	0.0	0.7	0.35	4.6
1753	0.0	0.5	0.35	4.6
1754	0.0	0.3	0.35	4.6
1755	0.0	0.3	0.35	4.6
1756	0.0	0.3	0.35	4.6
1757	0.0	0.5	0.35	4.6
1758	0.0	0.3	0.35	4.6
1759	0.1	0.4	0.35	4.6
1760	0.0	0.3	0.35	4.6
1761	0.0	0.3	0.35	4.6
1762	0.1	0.3	0.35	4.6
1763	0.1	0.3	0.35	4.6
1764	0.1	0.3	0.35	4.6
1765	0.0	0.3	0.35	4.6
1766	0.1	0.3	0.35	4.6
1767	0.1	0.3	0.35	4.6
1768	0.1	0.3	0.35	4.6
1769	0.1	0.3	0.35	4.6
1770	0.1	0.3	0.35	4.6
1771	0.1	0.3	0.35	4.6
1772	0.1	0.3	0.35	4.6
1773	0.1	0.3	0.35	4.6
1774	0.2	0.4	0.35	4.6
1775	-	-	0.35	4.6
1776	0.1	0.5	0.35	4.6
1777	0.2	0.5	0.35	4.6
1778	-3.5	0.4	0.35	4.6
1779	0.1	0.4	0.35	4.6
1780	0.1	0.4	0.35	4.6
1781	0.0	0.4	0.35	4.6
1782	0.1	0.3	0.35	4.6
1783	0.1	0.4	0.35	4.6
1784	0.3	1.0	0.35	4.6
1785	0.0	0.4	0.35	4.6
1786	0.2	0.6	0.35	4.6
1787	0.1	0.5	0.35	4.6
1788	-	0.0	0.35	4.6
1789	0.2	0.6	0.35	4.6
1790	-0.1	0.7	0.35	4.6
1791	0.1	0.3	0.35	4.6
1792	0.1	0.3	0.35	4.6
1793	0.0	1.0	0.35	4.6
1794	0.1	3.0	0.35	4.6
1795	0.2	3.0	0.35	4.6
1796	0.2	0.4	0.35	4.6
1797	0.0	0.5	0.35	4.6

Notes:

(1) The column of **gold spread** ($S = ((P_i - P^*) / P^*) \times 100$) is obtained as follows. Let P_i equal the ratio between gold coinage value (column 3 in Appendix Table 2,) and the quantity of gold coined (column 2) and let P^* be the legal price of the gold of 102.400 réis per marco including seignorage at a rate of 6,25% (as defined in Appendix 2). Then the % deviation between the unit value P_i and the legal price may be due to adjustments in quantities (*febres*, when the commodity value is higher than the legal value and *fortes* when it is lower).

(2) The **legal spread (L)** is the % tolerance in the weight of the coins considering the mintage composition in each year. After 1687 and during the eighteenth century the legal tolerance in gold coins was 1 *grão*, independently of the denomination of the coin. $L = E_i ((q_a \times v_a \times t) / V_i) \times 100$, with q_a being the quantity of coins with a given face value, v_a being the face value, t the legal tolerance and V_i the gold coinage value in each year.

(3) The **lower band (LB)** represents the legal spread which would obtain if all coins had the highest denomination available in that year. $LB = 1 / w_h$, with w_h representing the weight of the coin with the highest denomination in each year.

(4) The **upper band (UB)** represents the legal spread which would obtain if all coins had the lowest denomination available in that year. $UB = 1 / w_l$, with w_l representing the weight of the coin with the lowest denomination in each year.

Appendix Table 4: Prices under the *real* (1435-1854)

Year	Gold Price (réis/gram) and exchange rate	Gold Devaluation and davaluation against sterling (%)	Silver price (réis/gram)	Silver Devaluation (%)	Annual average gold devaluation (%)	Annual average silver devaluation (%)	Price Index
1435	35		4				
1436	35		4				
1437	35		4				
1438	35		4				
1439	35		4				
1440	35		4				
1441	41	17,1	5	25	2,7	3,8	
1442	41		5				
1443	41		5				
1444	41		5				
1445	41		5				
1446	41		5				
1447	41		5				
1448	41		5				
1449	41		5				
1450	41		5				
1451	54	31,7	6	20	2,8	1,8	
1452	54		6				
1453	54		6				
1454	54		6				
1455	54		6				
1456	54		6				
1457	63	16,6	6		2,6		
1458	63		6				
1459	63		6				
1460	72	14,3	6		4,6		
1461	72		6				
1462	72		6				
1463	72		6				
1464	72		6				
1465	72		6				
1466	72		6				
1467	72		6				
1468	72		6				
1469	72		6				
1470	72		6				
1471	72		6				
1472	91	26,4	9	50	2	1,9	
1473	91		9				
1474	91		9				
1475	91		9				
1476	91		9				
1477	91		9				
1478	91		9				
1479	91		9				
1480	91		9				
1481	91		9				
1482	91		9				
1483	91		9				
1484	91		9				

1485	91		9				
1486	91		9				
1487	91		9				
1488	91		9				
1489	107	17,6	10,8	2,2	1	1,1	
1490	107		10,8				
1491	107		10,8				
1492	107		10,8				
1493	107		10,8				
1494	107		10,8				
1495	107		10,8				
1496	107		10,8				
1497	107		10,8				
1498	107		10,8				
1499	107		11	1,9		0,2	
1500	107		11				1
1501	107		11				
1502	107		11				
1503	107		11				
1504	109	1,9	11		0,1		
1505	109		11				
1506	109		11				
1507	109		11				1
1508	109		11				2
1509	109		11				1
1510	109		11				1
1511	109		11				
1512	109		11				
1513	109		11				2
1514	109		11				4
1515	109		11				2
1516	109		11				3
1517	113	3,7	11,4	3,6	0,3	0,2	3
1518	113		11,4				5
1519	113		11,4				4
1520	113		11,4				6
1521	113		11,4				6
1522	113		11,4				7
1523	113		11,4				3
1524	113		11,4				8
1525	113		11,4				3
1526	113		11,4				5
1527	113		11,4				6
1528	113		11,4				6
1529	113		11,4				8
1530	113		11,4				10
1531	113		11,4				9
1532	113		11,4				5
1533	113		11,4				6
1534	113		11,4				6
1535	113		11,4				6
1536	113		11,4				6
1537	119	5,3	11,4		0,3		6
1538	122	2,5	11,4		2,5		7
1539	122		11,9	4,4		0,2	10

1540	122		11,9				9
1541	122		11,9				11
1542	122		11,9				11
1543	122		11,9				10
1544	122		11,9				8
1545	122		11,9				14
1546	122		11,9				12
1547	122		11,9				7
1548	122		11,9				9
1549	122		11,9				9
1550	122		11,9				9
1551	122		11,9				12
1552	122		11,9				9
1553	122		11,9				8
1554	122		11,9				9
1555	142	16,4	12,4	4,2	0,9	0,3	16
1556	142		12,4				14
1557	142		12,4				16
1558	142		11,4	-8,1		-2,8	10
1559	142		11,4				9
1560	142		11,4				8
1561	142		11,4				14
1562	142		11,4				16
1563	142		11,4				16
1564	142		11,4				12
1565	142		11,4				11
1566	142		11,4				15
1567	142		11,4				14
1568	142		11,4				11
1569	142		11,4				11
1570	142		11,4				14
1571	142		11,4				14
1572	142		11,4				13
1573	142		12,6	10,5		0,7	13
1574	142		12,6				15
1575	142		12,6				37
1576	142		12,6				18
1577	142		12,6				16
1578	142		12,6				20
1579	142		12,6				20
1580	142		12,6				13
1581	142		12,6				24
1582	142		12,7	0,8		0,09	20
1583	142		12,7				23
1584	142		12,7				20
1585	142		12,7				17
1586	142		12,7				17
1587	142		12,7				22
1588	142		13,3	4,7		0,8	26
1589	142		13,3				25
1590	142		13,3				18
1591	142		13,3				22
1592	142		13,3				22
1593	142		13,3				23
1594	142		13,3				19

1595	142		13,3				27
1596	142		13,3				28
1597	142		13,3				29
1598	142		13,3				32
1599	142		13,3				29
1600	142		13,3				27
1601	142		13,3				16
1602	142		13,3				24
1603	142		13,3				16
1604	142		13,3				35
1605	142		13,3				
1606	142		13,3				34
1607	142		13,3				30
1608	142		13,3				31
1609	142		13,3				15
1610	142		13,3				19
1611	142		13,3				15
1612	142		13,3				23
1613	142		13,3				25
1614	142		13,3				22
1615	142		13,3				22
1616	142		13,3				23
1617	142		13,3				28
1618	142		13,3				33
1619	142		13,3				25
1620	142		13,3				26
1621	142		13,3				27
1622	142		13,3				15
1623	142		13,3				18
1624	142		13,3				17
1625	142		13,3				21
1626	142		13,3				32
1627	142		13,3				28
1628	142		13,3				19
1629	142		13,3				24
1630	142		13,3				34
1631	142		13,3				39
1632	142		13,3				36
1633	142		13,3				22
1634	142		13,3				26
1635	142		13,3				39
1636	142		13,3				43
1637	142		13,3				41
1638	142		13,3				27
1639	142		13,3				20
1640	142		13,3				14
1641	142		16	20,3		0,3	19
1642	267	88	16		0,7		23
1643	267		19	18,8		-3,8	30
1644	267		19				18
1645	267		19				26
1646	312	16,9	19		4		27
1647	312		19				25
1648	312		19				14
1649	312		19				14

1650	312		19				18
1651	312		19				45
1652	312		19				33
1653	312		19				36
1654	312		19				26
1655	312		19				26
1656	312		19				20
1657	312		19				24
1658	312		19				35
1659	312		19				38
1660	312		19				32
1661	312		19				17
1662	357	14,4	19		0,8		31
1663	357		24	26,3		1,7	49
1664	357		24				40
1665	357		24				18
1666	357		24				33
1667	357		24				17
1668	392	9,8	24		1,6		19
1669	392		24				19
1670	392		24				16
1671	392		24				16
1672	392		24				18
1673	392		24				22
1674	392		24				24
1675	392		24				22
1676	392		25	4,2		-13,2	21
1677	406	3,6	25		0,4		24
1678	406		25				28
1679	406		25				22
1680	406		25				31
1681	406		25				27
1682	406		25				24
1683	406		25				26
1684	406		25				28
1685	406		25				32
1686	406		25				22
1687	406		25				18
1688	487	20	31	24	1,7	15,6	19
1689	487		31				20
1690	487		31				25
1691	487		31				27
1692	487		31				29
1693	487		31				29
1694	487		31				39
1695	487		31				38
1696	487		31				34
1697	487		31				33
1698	487		31				43
1699	487		31				45
1700	487		31				37
1701	487		31				31
1702	487		31				40
1703	487		31				57
1704	487		31				50

1705	487		31			34
1706	487		31			32
1707	487		31			38
1708	487		31			38
1709	487		31			56
1710	487		31			65
1711	487		31			69
1712	487		31			74
1713	487		31			47
1714	487		31			49
1715	487		31			43
1716	487		31			39
1717	487		31			30
1718	487		31			24
1719	487		31			30
1720	487		31			37
1721	487		31			38
1722	487		31			35
1723	487		31			30
1724	487		31			33
1725	487		31			35
1726	487		31			38
1727	487		31			32
1728	487		31			34
1729	487		31			32
1730	487		31			36
1731	487		31			35
1732	487		31			39
1733	487		31			39
1734	487		33	6,5	-2,8	41
1735	487		33			41
1736	487		33			43
1737	487		33			70
1738	487		33			53
1739	487		33			35
1740	487		33			43
1741	487		33			44
1742	487		33			37
1743	487		33			41
1744	487		33			45
1745	487		33			41
1746	487		33			42
1747	487		36	9,1	2,6	43
1748	487		36			39
1749	487		36			39
1750	487		36			44
1751	487		36			44
1752	487		36			43
1753	487		36			45
1754	487		36			42
1755	487		36			44
1756	487		36			40
1757	487		36			44
1758	487		36			46
1759	487		36			42

1760	487		36				40
1761	487		36				41
1762	487		36				43
1763	487		36				43
1764	487		36				49
1765	487		36				45
1766	487		36				11
1767	487		36				41
1768	487		36				45
1769	487		36				49
1770	487		36				43
1771	487		36				41
1772	487		36				43
1773	487		36				41
1774	487		36				45
1775	487		36				45
1776	487		36				44
1777	487		36				47
1778	487		36				49
1779	487		36				46
1780	487		36				53
1781	487		36				49
1782	487		36				47
1783	487		36				52
1784	487		36				54
1785	487		36				50
1786	487		36				53
1787	487		36				52
1788	487		36				51
1789	487		36				61
1790	487		36				66
1791	487		36				60
1792	487		36				60
1793	487		36				67
1794	487		36				63
1795	487		36				62
1796	487		36				64
1797	487		36				69
1798	487		36				80
1799	487		36				79
1800	487		36				103
1801	487		36				97
1802	487		36				93
1803	487		36				101
1804	487		36				115
1805	487		36				98
1806	487		36				92
1807	487		36				91
1808	487		36				98
1809	487		36				101
1810	487		36				130
1811	487		36				144
1812	487		36				127
1813	487		36				110
1814	487		36				97

1815	487		36			97
1816	487		36			93
1817	487		36			102
1818	487		36			88
1819	487		36			70
1820	487		36			59
1821	487		36			61
1822	570	17	36		0,1	69
1823	570		36			73
1824	570		36			75
1825	570		36			69
1826	570		36			69
1827	570		36			65
1828	570		36			60
1829	570		36			64
1830	570		36			59
1831	570		36			64
1832	570		36			60
1833	570		36			53
1834	570		36			62
1835	570		37	2,8		75
1836	570		37			69
1837	570		37			56
1838	570		37			56
1839	570		37			58
1840	570		37			64
1841	570		37			67
1842	570		37			60
1843	570		37			57
1844	570		37			49
1845	570		37			49
1846	570		37			60
1847	609	6,8	37		0,3	58
1848	609		37			52
1849	609		37			55
1850	609		37			61
1851	609		37			57
1852	609		37			56
1853	609		37			68
1854	615	9,9	37		0,1	80
1855	4,500					78
1856	4,500					94
1857	4,500					81
1858	4,500					75
1859	4,500					82
1860	4,500					79
1861	4,500					83
1862	4,500					84
1863	4,500					81
1864	4,500					83
1865	4,500					81
1866	4,500					83
1867	4,500					88
1868	4,500					83
1869	4,500					82

1870	4,500					78
1871	4,500					76
1872	4,500					76
1873	4,500					79
1874	4,500					82
1875	4,500					82
1876	4,500					83
1877	4,500					93
1878	4,500					92
1879	4,500					88
1880	4,500					83
1881	4,500					85
1882	4,500					86
1883	4,500					82
1884	4,500					77
1885	4,500					75
1886	4,500					76
1887	4,500					75
1888	4,500					75
1889	4,500					80
1890	4,500					88
1891	4,832	7,4				86
1892	5,735	18,7				88
1893	5,600	-2,4				89
1894	5,790	3,4				91
1895	5,698	-1,6				87
1896	5,853	2,7				88
1897	6,575	12,3				93
1898	7,108	8,1				97
1899	6,416	-9,7				95
1900	6,320	-1,5				93
1901	6,382	1,0				92
1902	5,722	-10,3				89
1903	5,581	-2,5				92
1904	5,413	-3,0				97
1905	4,793	-11,5				96
1906	4,582	-4,4				96
1907	4,642	1,3				96
1908	5,199	12,0				97
1909	5,185	-0,3				98
1910	4,895	-5,6				94

Notes: Column 1 presents the price of gold (in réis/gram) from 1435 to 1854, then it displays the *real* price of sterling. Therefore, column 2 displays the devaluation of the real against the sterling after 1855

Price index: 100=1914 (Valério, 1997; Mata and Valério, 1994)

APPENDIX TABLE 5

FISCAL AND EUROPEAN CONVERGENCE INDICATORS

	DEBT % OUTPUT	DEFICIT % OUTPUT	REAL CONVERGENCE	NOMINAL CONVERGENCE
1831				
1832				
1833				
1834				-10%
1835		0.0%		-23%
1836		0.6%		4%
1837		0.6%		15%
1838		0.3%		-10%
1839		0.3%		-2%
1840		0.7%		-15%
1841		2.0%		4%
1842		3.4%		18%
1843		2.4%		1%
1844		1.2%		8%
1845		1.2%		-1%
1846				-13%
1847				-12%
1848				19%
1849				-6%
1850				-9%
1851	52%	0.0%		8%
1852	54%	0.6%		6%
1853	45%	0.9%		-15%
1854	55%	0.9%		-24%
1855	52%	1.1%		9%
1856	50%	1.3%		-19%
1857	54%	1.8%		16%
1858	51%	1.9%		12%
1859	55%	2.0%		-6%
1860	61%	1.7%		-2%
1861	63%	2.3%		2%
1862	61%	3.0%		2%
1863	62%	2.5%		2%
1864	68%	1.6%		2%
1865	72%	1.6%		4%
1866	75%	2.4%		-8%
1867	75%	3.9%		5%
1868	88%	3.3%		-2%
1869	96%	3.5%		-4%
1870	99%	3.4%		12%

1871	123%	2.0%	-5%	6%
1872	112%	1.6%	12%	6%
1873	107%	1.2%	-20%	-22%
1874	115%	1.7%	19%	16%
1875	105%	1.8%	2%	-15%
1876	113%	2.5%	3%	5%
1877	110%	2.6%	-4%	-10%
1878	128%	2.4%	-10%	-2%
1879	125%	2.3%	6%	-2%
1880	133%	2.5%	1%	10%
1881	124%	2.2%	3%	-2%
1882	125%	1.9%	2%	1%
1883	133%	1.7%	-4%	-4%
1884	125%	2.0%	11%	3%
1885	138%	2.5%	4%	2%
1886	132%	2.0%	5%	3%
1887	136%	1.6%	-1%	-5%
1888	129%	2.1%	7%	1%
1889	128%	3.1%	-4%	-4%
1890	130%	2.9%	-12%	-13%
1891	140%	3.1%	2%	2%
1892	147%	2.8%	-10%	-8%
1893	156%	0.8%	-3%	-5%
1894	159%	0.3%	-10%	-6%
1895	144%	0.0%	13%	2%
1896	144%	0.6%	-4%	-6%
1897	152%	1.6%	0%	-1%
1898	143%	1.2%	-3%	-7%
1899	132%	1.3%	0%	1%
1900	130%	0.7%	11%	2%
1901	139%	0.2%	1%	2%
1902	131%	0.6%	3%	-2%
1903	113%	0.5%	-9%	-10%
1904	115%	0.0%	8%	4%
1905	120%	0.0%	2%	4%
1906	119%	0.3%	0%	0%
1907	112%	0.4%	-7%	-7%
1908	108%	0.5%	6%	1%
1909	109%	0.3%	-5%	-4%
1910	111%	-0.2%	2%	1%

Source: Calculations (and series breaks) in Braga de Macedo (1995). EU series (current members with 1970 gdp weights) from Bairoch (1976) and Bordo and Schwartz (1996). Portuguese fiscal series from Mata and Valerio (1996)

REFERENCES

- Almeida. 1991
 Almeida. P. T. de. *Eleições e caciquismo no Portugal oitocentista (1868-1890)*. Lisboa. Difel.
- Aragão. 1877
 Aragão. Teixeira de. *Descrição Geral e Histórica das moedas cunhadas em nome dos reis. regentes e governantes de Portugal*. Lisboa. Imprensa Nacional. 3 vols.
- Arruda. 1986
 Arruda. J. J. A.. «A circulação, as finanças e as flutuações económicas» in Maria Beatriz Niza da Silva (org.). *O império luso-brasileiro. 1750-1822*. Lisboa. Estampa.
- Azevedo. 1988
 Azevedo. L. de. *Épocas de Portugal Económico*. Lisboa. Clássica Editora. 4ª ed.
- Bairoch. (1976)
 Bairoch. Paul. «Europe's Gross National Product 1800-1975». *Journal of European Economic History*. vol.5.nº 2. pp.273-340.
- Bonney. 1995a
 Bonney. R.. «Introduction». in Bonney (ed.). 1995.
- Bonney. 1995b
 Bonney. R.. «The Eighteenth Century. II. The Struggle for Great Power Status and the End of the Old Fiscal Regime». in Bonney (ed.). 1995.
- Bonney. 1995c
 Bonney. R.. «Revenues». in Bonney (ed.). 1995.
- Bonney (ed.). 1995
 Bonney. R. (ed.). *Economic Systems and State Finance*. Oxford. Clarendon Press.
- Bordo. 1986
 Bordo. M.. «Money, Deflation and Seigniorage in the Fifteenth Century- a Review Essay». *Journal of Monetary Economics*. 337-346.
- Bordo and Schwartz (1996)
 Bordo. Michael and Anna Schwartz. «Fixed Exchange Rates as a Contingent Rule 1880-1990». in Jorge Braga de Macedo. Barry Eichengreen and Jaime Reis. editors. *Currency Convertibility: The Gold Standard and Beyond*. London: Routledge
- Borges de Macedo. 1951
 Borges de Macedo. J.. *A situação económica no tempo de Pombal*. Porto.
- Borges de Macedo. 1963
 Borges de Macedo. J.. *Problemas de história da indústria portuguesa no século XVIII*. Lisboa. AIP.
- Borges de Macedo. 1995
 Borges de Macedo, Jorge, «Manuel Fernandes Tomás - do regional ao nacional», in *Amar, sentir e viver a história: estudos de homenagem a Joaquim Veríssimo Serrão*. Lisboa, Colibri.
- Boxer. 1969
 Boxer. C.. *The Golden Age of Brasil. 1695-1750*. London.

- Braga de Macedo. (1980)
- Braga de Macedo. Jorge. «Portuguese Currency Experience: An Historical Perspective». in *Estudos em Homenagem ao Prof. Doutor J.J. Teixeira Ribeiro*. vol. IV. Coimbra: Boletim da Faculdade de Direito. pp.311-52.
- Braga de Macedo. 1995
- Braga de Macedo. Jorge. «Convertibility and stability 1834-1894: Portuguese currency experience revisited». in *Ensaio de homenagem a Francisco Pereira de Moura*. Lisboa. ISEG. pp. 421-438
- Braga de Macedo. Eichengreen. Reis. 1996
- Braga de Macedo. J., Eichengreen. B. and Reis. J.. *Currency convertibility. The gold standard and beyond*. London. Routledge.
- Braga de Macedo. 1996
- Braga de Macedo. Jorge. «Europa e Lusofonia, política e financeira: uma interpretação», in *Ensaio de homenagem a Manuel Jacinto Nunes*, Lisboa, ISEG.
- Braga de Macedo. 1997
- Braga de Macedo. Jorge. «Crises? What Crises? Escudo from ECU to EMU», Nova Economics Working Paper #313, December.
- Braudel. 1990
- Braude. Fernand. *La Méditerranée et le monde méditerranéen à l'époque de Philippe II*. Paris. A. Colin.
- Braudel. 1993
- Braudel. F.. *Civilização material. economia e capitalismo: séculos XV- XVIII*. vol. 3. Lisboa. Teorema.
- Cardoso. 1989
- Cardoso. J. L.. *O pensamento económico em Portugal nos finais do século XVIII. 1780-1808*. Lisboa. Estampa.
- Cardoso, 1997
- Novos elementos para a história bancária de Portugal*. Lisboa, Banco de Portugal.
- Chichorro. 1795
- Chichorro. José de Abreu Bacellar. *Memoria economico-politica da Provincia da Estremadura. traçada sobre as instruções regias de 17 de Janeiro de 1793*. Lisboa. 1795 (ed. M. B. Amzalak. 1943)
- Costa. 1992
- Costa. F. D.. *Crise Financeira. dívida pública e capitalistas*. Lisboa. unpublished MA dissertation.
- Coutinho. 1783-1811
- Coutinho. D. Rodrigo de Souza. *Textos Políticos. Económicos e Financeiros*. (introdução e direcção de ed. André Mansuy Diniz Silva. 1993). 2 tomos. Lisboa. Banco de Portugal.
- Dias. 1985
- Dias. J. Alves. «Um documento financeiro do século XVII». *Nova História*. 41-78.
- Disney. 1981
- Disney. A. R.. *A decadência do império da pimenta: comércio português na Índia no início do século XVII*. Lisboa. Ed. 70.

- Downing. 1992
Downing. B. M.. *The military revolution and political change: Origins of democracy and autocracy in early modern Europe*. Princeton. N.J.
- Ferreira. 1879
Ferreira. Theophilo. *Camara Municipal Breves considerações ácerca do estado da sua fazenda*. Lisboa. Typographia Universal.
- Flandreau. 1995
Flandreau. M.. «Coin Memories: Estimates of the French Metallic Currency 1840-1878». *Journal of European Economic History*. vol. XXIV.
- Gelman. 1984
Gelman. J. D.. «Natural Economies or Money Economies? Silver Production and Monetary Circulation in Spanish America (Late XVI Early XVII Centuries)». *Journal of European Economic History*. vol XIII. 99-115.
- Godinho. 1950
Godinho. V. M.. «Le Portugal. les flottes du sucre et les flottes de l'or. 1670-1770». *Annales E. S. C.* 1.
- Godinho. 1968a
Godinho. V. M.. «A rota do Cabo da Boa Esperança: de Vasco da Gama ao começo do século XIX». in Joel Serrão. *Dicionário de História de Portugal*. Lisboa. vol. III.
- Godinho. 1968b
Godinho. V. M.. «Preços e conjuntura do século XV ao XIX». in Joel Serrão. *Dicionário de História de Portugal*. Lisboa.
- Godinho. 1970
Godinho. V. M.. «Portugal and her empire. 1680-1720». *The New Cambridge Modern History*. vol. VI. Cambridge.
- Godinho. 1978a
Godinho. V. M.. «Finanças públicas e estrutura do estado». *Ensaio II*. Lisboa. Ed. Presença. 2ª. ed. (1ª. ed. 1968). pp. 29-74.
- Godinho. 1978b
Godinho. V. M.. «1580 e a Restauração». *Ensaio II*. Lisboa. Ed. Presença. 2ª. ed. (1ª. ed. 1968). pp. 379-421.
- Godinho. 1983-1984
Godinho. V. M.. *Os descobrimentos e a economia mundial*. Lisboa. Ed. Presença. 2ª. ed. (1ª. ed. 1963-1971).
- Gomes. 1883
Gomes. J. J. da Costa. *Colecção de leis da divida publica portugueza*. tomo 1. Lisboa. Imprensa Nacional.
- Gonçalves. 1964
Gonçalves. I.. *Pedidos e empréstimos públicos em Portugal durante a Idade Média*. Lisboa.

Gonçalves. 1984

Gonçalves. C. B.. *Casa da Moeda do Brasil – 290 anos de história (1694-1984)*. Brasil. Rio de Janeiro.

Hart. 1995

Hart. M.. «The emergence and consolidation of the 'tax state'. II. The seventeenth century». in Bonney (ed.). 1995.

Hespanha. 1986

Hespanha. A. M.. *As vésperas de Leviathan. Instituições e poder político. Portugal – século XVII*. Lisboa. ed. autor.

Hespanha. 1993

Hespanha. A. M.. «A fazenda». in A. M. Hespanha (org.). *O Antigo Regime (1620-1807)*. in J. Mattoso (dir.). *História de Portugal*. vol. IV. Lisboa. Círculo dos Leitores.

Hoffman and Norberg (eds.). 1994

Hoffman. P. T. and Norberg. K.(eds.). *Fiscal crises. liberty. and representative government. 1450-1789*. Stanford. Stanford Univ. Press.

Justino. 1988-1989

Justino. David. *A formação do espaço económico nacional. Portugal. 1810--1913*. Lisboa. Vega. 2 vols.

Lains. 1995

Lains. Pedro. «Savings Banks in Portuguese Banking. 1880-1930: the role of Caixa Económica Portuguesa». in *Actas do Encontro História Empresarial em Portugal*. Évora.

Magalhães. 1994

Magalhães. J. Romero de. «A fazenda». in J. R. Magalhães (org.). *No alvorecer da modernidade (1480-1620)*. vol. III. *História de Portugal* dir. J. Mattoso. Lisboa. Círculo de Leitores.

Martinière. 1991

Martinière. G.. «A economia colonial: uma produção agrícola de exportação dominada pelos 'ciclos' do açúcar e do ouro». in F. Mauro (org.). *O Império Luso-Brasileiro. 1620-1750*. Lisboa. Estampa.

Martins. 1881

Martins. Oliveira. *Portugal contemporâneo*. Lisboa.

Martins. 1956

Martins. Oliveira. *Estudos de Economia e Finanças*. Lisboa. Guimarães Editores.

Mata. 1986

Mata. M. E.. «A dívida pública externa fundada de Portugal da guerra civil à Regeneração». *Revista de História Económica e Social*. 18.

Mata. 1993a

Mata. M. E.. «Order and progress or order versus progress? The Portuguese social dilemma of the mid-19th century». *Estudos de Economia*. XIII. 2. 115-128.

- Mata. 1993b
- Mata. M. E.. *As finanças públicas portuguesas da Regeneração à primeira guerra mundial*. Lisboa. Banco de Portugal.
- Mata and Valério. 1991
- Mata. M. E. and Valério. N.. «Foreign public debt and economic growth in Portugal. 1830-1985». *Estudos de Economia*. XI. 4. 419-432.
- Mata and Valério. 1994
- Mata. M. E. and Valério. N.. *História económica de Portugal*. Lisboa. Presença.
- Mata and Valério. 1994
- Mata Eugenia and Nuno Valerio (1996). «Monetary Stability. Fiscal Discipline and Economic Development». in Jorge Braga de Macedo. Barry Eichengreen and Jaime Reis. editors. *Currency Convertibility: The Gold Standard and Beyond*. London: Routledge.
- Mauro. 1954
- Mauro. F.. «Monnaie et Conjoncture a Lisbonne au XVII siècle». Paris. 1954.
- Mitchell, Brian Redman
- European Historical Statistics*. 2nd ed. rev. London, Macmillan, 1980.
- Monteiro. 1993
- Monteiro. N.. «Poder senhorial. estatuto nobiliárquico e aristocracia». in A. M. Hespanha (org.). *O Antigo Regime (1620-1807)*. in J. Mattoso (dir.). *História de Portugal*. vol. IV. Lisboa. Círculo dos Leitores.
- Morineau. 1984
- Morineau. M.. «Les frappes monétaires françaises de 1726 à 1793». in Jonh Day (org.). *Études d'Histoire Monétaire. XII-XIX siècles*. Lille. Presses Universitaires de Lille. 69-141.
- Morineau. 1985
- Morineau. M.. *Incroyables gazettes et fabuleux métaux. Les retours des trésors américains d'après les gazettes hollandaises (XVI-XVIII siècles)*. Paris- Maison des Sciences de l'Homme and Cambridge University Press.
- Muto. 1995
- Muto. G.. «The Spanish System: Centre and Periphery». in Bonney (ed.). 1995.
- Neves. 1814
- Neves. J. A. das. *Objectos relativos às Artes. Commercio e Manufacturas*. 2 vols. Lisboa.
- North and Weingast. 1989
- North. Douglass C. and Weingast. Barry R.. «Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England». *The Journal of Economic History*. 1989. 4.
- Oliveira. 1620
- Frei Nicolau de Oliveira. *Tratado das Grandezas de Lisboa*. Lisboa.

Oliveira. 1971-1972

Oliveira. António de. *A vida económica e social de Coimbra de 1537 a 1640*. Coimbra. Faculdade de Letras da Univ. de Coimbra.

Oliveira. 1983

Oliveira. António de. «Levantamentos populares no Algarve em 1637-1638». *Revista Portuguesa de História*. nº 20.

Oliveira. 1984

Oliveira. António de. «A contestação fiscal em 1629: as reacções de Lamego e do Porto». *Revista de História das Ideias*. nº6.

Oliveira. 1991

Oliveira. António de. *Poder e oposição política em Portugal no período filipino*. Lisboa. Difel.

Pedreira. 1996

Pedreira. Jorge. «Tratos e contratos: actividades, interesses e orientações dos investimentos dos negociantes da praça de Lisboa (1755-1822)». *Análise Social*. 136-137. pp. 355-380.

Peres. 1959

Peres. D.. *Anais da Academia Portuguesa de História*. Lisboa. I série. vol. XIV.

Peres. 1971

Peres. D.. *História do Banco de Portugal. 1821-1846*. Lisboa. Banco de Portugal.

Petersen. 1975

Petersen. E. L.. «From domain state to tax state: synthesis and interpretation». *Scandinavian Economic History Review*. 23. 116-148.

Pinto. 1839

Pinto. Agostinho Albano da Silveira. *Dívida pública portuguesa. Sua história, progresso e estado actual*. Lisboa. Imprensa Nacional.

Pinheiro. 1992

Pinheiro. Magda. *Os portugueses e as finanças no dealbar do liberalismo. Estudo e documentos*. Lisboa. Ed. João Sá da Costa.

Reis. 1991

Reis. J.. «Os bancos portugueses. 1850-1913». *Anais da Conferência Internacional de História de Empresas*. Rio de Janeiro. Universidade Federal do Rio de Janeiro. pp. 43-91.

Reis. 1994

Reis. J.. «Portuguese banking». in M. Pohl and S. Freitag (eds.). *Handbook on the History of European Banks*. Hants. Edward Elgar. 1994. pp. 812-826.

Reis. 1994

Reis. J.. «Natural monopoly and brand differentiation in free banking: Portugal. 1860-1890». in P. Klep and E. Van Cauwenberghe (eds.). *Entrepreneurship and the transformation of the economy ((10th-20th centuries)*. Leuven. Leuven University Press.

- Reis. 1996
 Reis. J. «First to join the gold standard. 1854». in Braga de Macedo. Eichengreen.
 Reis. 1996.
- Reis. 19^o7
 Reis. J.. *O Banco de Portugal das origens a 1914*. I vol.. Lisboa. Banco de Portugal.
- Rocha. 1996a
 Rocha. Maria Manuela. «Actividade creditícia em Lisboa (1770-1830)». *Análise Social*. 136-137. pp. 579-598.
- Rocha. 1996b
 Rocha. Maria Manuela. *Crédito privado num contexto urbano. Lisboa. 1770-1830*. uupub. PhD. Dissertation. European University Institute.
- Santarém. 1842-1865
 Visconde de Santarém. *Quadro elementar das relações políticas e diplomáticas de Portugal com as diversas potências do mundo [...]*. Paris e Lisboa. 7 vols.. 1842-1865.
- Santos. 1974
 Santos. R. E.. *Os tabacos. Sua influência na vida da nação*. Lisboa. Seara Nova. 2 vols.
- Serrão. 1852
 Serrão. Joel. «Em torno das condições económicas de 1640». *Vértice*.
- Silbert. 1968
 Silbert. A.. *Le problème agraire portugais au temps des premières Cortès libérales (1821-1823)*. Paris. PUF.
- Silva. 1988
 Silva. Álvaro F.. «Estruturas agrárias e relações sociais – fontes para o seu estudo (livros de décima e cartórios notariais)». in Maria José da Silva Leal e Miriam Halpern Pereira (coord.). *Arquivo e Historiografia. Colóquio sobre as Fontes da História Contemporânea Portuguesa*. Lisboa. Imprensa Nacional-Casa da Moeda.
- Silva. 1993
 Silva. Álvaro F.. *Propriedade, família e trabalho no 'hinterland' de Lisboa. Oeiras. 1738-1811*. Lisboa. Ed. Cosmos.
- Silva. 1989
 Silva. António Martins da. *Desamortização e venda dos bens nacionais em Portugal na primeira metade do século XIX*. Coimbra. Univ. de Coimbra. unpublished PhD dissertation.
- Silva. 1993
 Silva. António Martins da. «As finanças públicas». in L. R. Torgal and J. L. Roque (org.). *O liberalismo (1807-1890)*. vol. V. *História de Portugal* dir. J. Mattoso. Lisboa. Círculo de Leitores.
- Silva. 1957
 Silva. José Gentil da. *Stratégie des Affaires à Lisbonne entre 1595 et 1607- Lettres Marchandes des Rodrigues d'Evora et Veiga*. S.E.V.P.E.N.. Paris.

- Silveira. 1987
 Silveira. L. E. da. «Aspectos da evolução das finanças públicas portuguesas (1800-1827)». *Análise Social*. vol. XXIII. 505-530.
- Simonsen. 1957
 Simonsen. R. C.. *História Económica do Brasil (1500-1820)*. S. Paulo. 3ª ed.
- Sindreu. 1991
 Sindreu. Francisco de Paula Pérez. *La Casa de la Moneda de Sevilla. su historia*. Sevilha. Fundacion Fundo de Cultura de Sevilla. Col. Focus.
- Sousa. 1678-1680
 Sousa. Manuel de F.. *Europa Portuguesa*. 3 tomos. 2ª ed.
- Sousa. 1991
 Sousa. Rita Martins de. «Money Supply in Portugal. 1834-1891». *Estudos de Economia*. vol. XII. 19-32.
- Sousa, forthcoming
 Sousa. Rita Martins de. *Moeda e Metais Preciosos no Portugal Setecentista (1688-1797)*. Ph.D. thesis in progress at the Institute of Economics and Management of the Technical University of Lisbon (Nuno Valério supervisor)
- Tallett. 1992
 Tallett. F.. *War and society in early modern Europe. 1495-1715*. London.
- Tengarrinha. 1993
 Tengarrinha. J.. «Venda dos bens da coroa em 1810-1820: os reflexos de uma crise nacional». *Análise Social*. vol XXVIII. 607-619.
- Tomás. 1821
 Tomás. Manuel Fernandes. «Relatório sobre o estado e administração do Reino» (1821). recolha. prefácio e notas de José Tengarrinha. *A revolução de 1820*. Lisboa. Caminho. 2ª ed.
- Tomaz. 1988
 Tomaz. F.. «As Finanças do Estado Pombalino. 1762-1776». *Estudos e Ensaios em Homenagem a Vitorino Magalhães Godinho*. Lisboa. Sá da Costa Editora.
- Valério. 1991
 Valério. N.. «Periodização da História Monetária de Portugal». *Estudos de Economia*. vol. XII. 3-18.
- Valério. 1997
 Valério. N.. «Um indicador da evolução dos preços em Portugal nos séculos XVI a XIX». *Working Paper nº 4. GHES*.
- Verlinden. 1960
 Verlinden. C.. «Formes féodales et domaniales de la colonisation portugaise dans la zone Atlantique aux XIVe. et XVe. siècles et spécialement sous Henri le Navigateur». *Revista Portuguesa de História*. vol. IX. 1-44.
- Wehler. 1987
 Wehler. Hans-Ulrich. *Deutsche Gesellschaftsgeschichte*, Munich.