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JEL Classification: N23, N43, H63, F34

Carlos Álvarez-Nogal: Departamento de Historia Económica e Instituciones, and Researcher at Instituto Figuerola, Universidad Carlos III, Calle Madrid, 126, 28903 Getafe, Spain.
E-mail: carlos.alvarez@uc3m.es
http://www.uc3m.es/portal/page/portal/instituto_figuerola/directorio/calvarez

Christophe Chamley: Department of Economics, Boston University, 270, Bay State Road Boston, MA, 02215, USA, and Paris-Jourdan Sciences Économiques (PSE), 48 boulevard Jourdan 75014 Paris, France.
E-mail: chamley@bu.edu

Debt policy under constraints between Philip II, the Cortes and Genoese bankers[1]

Carlos Álvarez-Nogal[2] and Christophe Chamley[3]

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Abstract

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[2] Universidad Carlos III
[3] Boston University

1. Introduction

In the second half of the 16th century, the large nation-wide domestic public debt was created in Castile[4]. The debt to GDP ratio exceeded fifty percent according to some estimates, and the ratio between interest service and tax revenues at the end of the century was about fifty percent, as in England or France two centuries later[5]. These impressive numbers were achieved without the efficient centralized administration and the capital markets that supported the fiscal policies of other countries in later centuries. How could this performance be achieved then? The answer to this question requires a general analysis of the fiscal system of King Philip II of Spain, which is the purpose of the present paper.

Philip II, as head of the first modern super-power, managed a budget of a scale that had not been seen since the height of the Roman Empire[6]. No country before had faced such extraordinary fluctuations and imbalances, both in revenues and expenditures and both in times and places. Large military expenses were necessitated by the politics of Europe and the first revolution in military technology. The variability in expenses was met by large public borrowings up to modern levels, a historical innovation that, in later centuries, would be followed by the Netherlands, France and England. As in 18th century England, but at an earlier stage of the development of capital markets, Castile drew its military supremacy from its superior ability to mobilize large resources through borrowing.

[4] Castile represented about 80 % of today's Spain.

[5] At the end of 1792, the service of the English debt was 9.2 million pounds sterling (Grellier, 1810). Tax revenues in 1790 were 17.51 million (Mathias and O'Brien, 1976). In the last budget of the Ancien Régime that was established by Loménie de Brienne (Compte Général, 1789), the service of the debt is 50 percent of revenues, but the interest service is smaller since a large fraction of the debt was in life annuities. In Castile, the service of the long-term public debt consumed 46% of government revenues in 1598.

[6] At 6 million ducats (the average around 1560), with a ducat at 35 grams of silver, it amounted to 210 tons of silver per year with a population of about 5 million while the Roman empire's budget was between 500 and 1000 tons for a population of 50 million (Hopkins, 1995). The size of the budget per capita had been very small throughout the Middle Age in Western Europe (Bean, 1973).

Compared with other European countries, Philip II faced four additional challenges: (i) a large fraction of revenues was subject to independent shocks on the mining and transfer of silver from the Americas; (ii) the majority of expenditures were abroad; (iii) capital markets had not yet developed into centralized places with daily trading (as would be seen in Amsterdam or London); (iv) most importantly, the central government had no direct control over a large part of the tax administration[7], and had to negotiate with the eighteen cities that represented the Spanish Realm and administered the main taxes.

The adjustments to short-term shocks on the budget were first met by short-term loans. As in 18th century England, financial transactions, transfers and debt issuances were managed by "moneyed men", here mainly Genoese bankers, who were in the unique position to handle triangular transactions between Castile, Italy and Flanders. An accumulation of the short-term shocks would imply a permanent shock that was met by issuing long-term debt. Following the routine of the previous century (Andrés Díaz, 2003), the Crown converted any significant accumulation of the short-term debt into long-term domestic debt. Short-term debt that was not collateralized by long-term debt never exceeded ten percent of the total public debt. Yet Philip II suspended payments on the short-term debt four times. These "defaults" have attracted a large literature that has taken explicitly or implicitly the view of a modern government with a centralized budget. That view is historically erroneous and cannot account for the credibility of the debt of Philip II and the suspensions of payments.

We present two arguments in this paper. The main one follows a sequence: the short-term debt could not be credible (and therefore exist) without the possibility of its conversion into long-term debt; the credibility of the long-term debt required funding through credible tax revenues, which, in turn, required the alignment between the debt holders and the people in charge of establishing the taxes that would service that debt; in the historical and political context of Castile[8], that alignment was achieved by the

[7] Such an administration began in England just before the Glorious Revolution (Brewer, 1988), and in France under Bonaparte.

[8] The alignment of tax collectors and debt holders has been critical for the credibility of large levels of the public debt in all centuries. The issue is discussed in the advice of Saint-Simon to the Regent in 1715. Stasavage (2000) argues that an important factor in the decrease of the borrowing cost in 18th century England was the administration of the Whigs in which the annuity holders controlled the taxes. See also Epstein (2000).

decentralization of the debt and the taxes through the intermediation of the eighteen cities that were represented in the Cortes; the level of taxes for debt services put a ceiling on the debt service that had to be negotiated by central bargaining in the Cortes; delays in these negotiations blocked the entire system of debt financing and triggered all the suspensions of payment on the short-term debt.

That argument implies that the long-term borrowing capability of the Crown was enhanced by its lack of control of the taxes. The system was in effect a generalization of the public debt in Italian city-states. The long-term debt would have been less credible and entail a higher cost if the Crown had been in charge of these taxes. Indeed, the interest rate on the domestic debt decreased during the century despite the large borrowings.

This system generated three crises because of imperfect information and divergent motivations. Each of the three crises occurred when the service of the long-term debt reached the ceiling of the tax revenues that had previously been agreed upon by the cities in the Cortes. All the previous literature (to be reviewed below) on these crises focuses on the negotiations between the Crown and the Genoese bankers. In our argument, the main issue was the relation between the Crown and the cities. The first two crises (1557 to 1560, and 1575 to 1577), led to an increase of the taxes that could be used to service the long-term debt. The resolution of the second and the third crisis (1596 to 1597) involved a reduction of the interest rate.

The second argument of this paper highlights the difference between interest reduction and debt reduction. The domestic debt was in perpetual annuities redeemable at par (*juros al quitar*): the Crown could repay the principal of an annuity at any time. That feature had been introduced in the 15th century and by the end of that century, the Crown had routinely used the redeemability of the annuities to lower their interest rate as the market rate decreased gradually over the century. In England, the first interest reduction on the entire debt was achieved by Pelham in 1749-1750, after the failure of the first attempt in 1737 (Chamley, 2011). In Castile, the interest reductions of the 15th and 16th century were not conducted in a centralized capital market and without the agreement of a parliament (as in England). Instead, debt instruments were heterogeneous because financing was through heterogeneous cities. But each interest

reduction was not forced and included the escape clause that the debt holder could take the cash payment of the face value of the principal instead of the interest reduction[9].

Interest reductions were conducted during the settlements of crises in 1575-1577 and 1596-1597. At the same time, some of the debt was reduced. The literature ignores the interest reductions that are explicitly stated in the settlements and assume that any lower interest payment is a default. That misunderstanding obviously leads to an exaggerated evaluation of the "defaults". Our view is that the haircuts were relatively small.

The finances of 16th century Spain, and in particular the payment stop of 1575, have been the subject of a vast literature. A trendsetting work in the English literature has been the article by Lovett (1980) who wrote, "the bankruptcy of 1575 took place because the bankers refused to advance any more money and the king, in desperation, resumed for his own use the revenues assigned to pay royal debts."

Conklin (1998) built his argument on that idea: the Genoese bankers would lend up to a ceiling that was determined by the penalty that they could inflict for non-repayment; the penalty was the loss of the Netherlands that would follow the stop of the bankers' transfers to the Spanish army fighting a rebellion in these provinces. However, there is no evidence for the numbers that Conklin alleges as that ceiling (about 8 million ducats). Historians have never taken seriously the thesis of Conklin (Carlos Morales, 2008).

The present paper differs from the work of Drelichman and Voth on three fundamental issues. Drelichman and Voth (2010) view the Castilian government as a modern government that is in control of taxes and faces a standard foreign debt problem to which they apply International Monetary Fund (IMF) criteria on the long-run level of debt to GDP. The present study shows that such a view is not historically accurate. Second, we do not link the debt crises to a temporary liquidity problem and the timing of silver remittances, as they do. Thirdly, Drelichman and Voth (2011) grossly overestimate the haircuts in the settlements of 1577 and 1596 because they ignore the redeemability of the domestic debt that enabled the government to legally lower the interest rate (as other countries did in later centuries) and proceed as if the credit market in Castile was centralized with one interest rate, as in a modern economy. In this paper,

[9] We will see that the choice was actually between cash repayment of the principal and additional payment (*crecimiento*) on the principal to keep the same annual income.

we will bring some evidence on how the market for the domestic government debt actually worked in 16th century Castile.

Needless to say, much more needs to be done, and there is a wealth of documents in Simancas that is available. Drelichman and Voth (2011) present computations of the rate of return on the loans made by the Genoese bankers under the implicit assumption that bankers lent on their own funds. But there is evidence (referenced in this paper) that Genoese bankers provided only partial equity for their loans raised funds either in the credit market or through the selling of collaterals of their loans. There is also evidence that the actual payments on loans deviated from the contracts either at the time of the initiation of the loan, or, more important, when a rescheduling took place. Our argument reinforces the conclusion of Drelichman and Voth that Genoese bankers made very good return on their loans to the Spanish monarchy despite the latter's alleged bankruptcy. However, we think that any attempt to provide more than approximate estimates of the rate of return on the funds of the Genoese bankers is, in the current state of our knowledge of the actual transactions, a futile exercise.

Our paper is obviously related to the issue of debt credibility and institutions but that literature is too vast to be referenced here. For example, we do not want to discuss whether the government of Castile was "fragmented" or "absolutist". Our purpose, instead, is to analyze the remarkable case of the finances of Castile, and to use economic rationality as a tool for the interpretation of the archival evidence and the previous studies of historians.

Historians have either specialized on the relations between the Crown and the Cortes (Fortea Pérez, 1990), on the relations between the Crown and the bankers (Carlos Morales (2008) with the cited literature). We claim that the two are intertwined, especially in the most important crisis of 1575-1577. For the data on revenues, we use some of the standard references in the literature, with small alterations, and the archives in Simancas for information on loans from Genoese bankers and actual payments made by the Crown.

The paper is organized along the lines of the main argument. The instruments of the long-term debt are presented in Section 2. The sources of funding that debt are analyzed in Section 3; specifically, in relation to their capability to ensure the credibility of the long-term debt. We show that the properties of the financial instruments in that debt

(market, redeemability) are related to the structure of revenues. Section 4 is devoted to the short-term debt in relation to the long-term debt. Section 5 discusses the theory of debt policy under the constraint of quantum adjustment of taxation. It is shown that some accumulation of short-term debt can be efficient despite its higher cost. That accumulation of short-term debt is entirely converted into long-term debt when there is a tax adjustment, as actually occurred under Philip II. In Section 6, each of the three crises, 1558-1560, 1575-1577, 1596-1597, is analyzed in view of our main argument. The first two led to a significant increase of the domestic taxes to fund the domestic debt. In the last two crises, the government applied some interest reductions. We discuss such a policy in regard of similar interest reductions in Spain in the previous century and in other countries for later centuries.

2. The long-term debt

The center of the fiscal system of Castile was its long-term debt. Its credibility rested on its funding system and that credibility supported the credibility of the short-term debt. In order to understand the funding mechanism and the interest reductions on the debt, we have to examine the financial instruments of this long-term debt.

Domestic long-term bonds, called *juros*, had been introduced in the 12th century as pension rewards for services during the *Reconquista*[10]. Their marketability increased gradually over the centuries. Given the stage of development and the institutions in the 16th century, there was no central market with price quotations as in centuries later in the Netherlands or England, and there could not be one. The *juros* were serviced at the city level to ensure their credibility. Thus, for a *juro* issued in Sevilla, the coupons had to be collected in Sevilla and not in Madrid. The same office would service the *juros* and collect the local sales tax revenues on which the service of *juros* had first claim. *Juros* were also ranked by local order of seniority according to their date of issuance. No default took place on *juros* in the 16th century, but there could be local delays of payment. *Juros* were traded and not attached to a particular holder (transactions had to be registered); furthermore, they were not homogeneous like the 3% or 4% annuity found in 18th century England.

[10] See Toboso (1987), Pérez-Prendes and Torres López (1963), Barthe Porcel (1949).

Juros were either perpetual and redeemable annuities (*juros al quitar*), or life annuities (*juros de por vida*), which were also redeemable. *Juros al quitar* had been introduced at the beginning of the 15th century. A *juro al quitar* had a face value, the principal, which could be paid back by the government at any time. The redeemable feature enabled the government to reduce the debt in a time of surplus and, more importantly, to refinance when the interest rate decreased. Such interest reductions had taken place in the 15th century, from 10 to 7 percent and from 8 to 6 percent. At the same time, the Crown sold new *juros* at rates of 7% and 6% (Andrés Díaz, 2004). Under Philip II, most *juros* were redeemable[11]. The definition of life annuities (*juros de por vida*) is less clear at this stage. They seem to have had a longer term than the standard life annuities found later in other countries, such as France or England. We will show examples of some *juros de por vida* that had a face value at which they were redeemed.

The redeemability of the perpetual annuities is a central issue in the fiscal policy of Castile and needs to be discussed. A helpful reference is the later case of 18th century England where, despite a centralized and sophisticated financial market, the government faced significant hurdles in lowering the cost of its redeemable debt. English annuities were redeemed by one of two methods. In the first method, the budget surplus fed the Sinking Fund to refund the annuities at par when the long-term interest rate was lower than the rate of the annuity. This method was slow as it reduced the interest on the debt by a flow. In the second method, the government converted the whole stock of the debt to a debt at a lower interest rate. In order to save on transaction costs, since the holders of the new and the old debt were identical, it was more efficient to reduce the interest rate on the entire debt, with the provision that annuity holders could opt for cash repayment instead of accepting the interest reduction. Such an operation, which should have been straightforward in a perfect capital market with competitive agents, created in fact a game in which the coordination of annuity holders could induce the failure of the interest reduction (Chamley, 2011). Indeed, in 1737, the English government failed in its first attempt to reduce the interest rate from 4% to 3%. In 1750, it succeeded, under very favorable circumstances, but for the next war ten years later, the English government did not issue any redeemable annuity and the next interest reduction on the

[11] According to Artola (1982), the fraction of juros al quitar was 76% in 1559, 82% in 1575 and about 90% at the end of the century.

entire English debt took place only at the end of the 19th century after an extraordinarily long period of low interest rates.

The events of England in the 18th century illustrate why *juros al quitar* could not be redeemed *in toto* in 16th century Castile. Two additional features prevented the refinancing of the entire debt in Castile. First, as described before, the market for *juros* was fragmented and not centralized (as it had been for a 4% English annuity). Second, in the Castilian tradition, the interest on the annuities was not reduced by a decrease of the annual income for a fixed face value. The rate reduction was achieved by the payment of an increase of capital for a fixed annual income.

A *juro* was defined by the capital amount needed to generate 1000 *maravedis* (mrs henceforth). For example, "14.000 *al millar"* means an interest of 7.14 percent. That definition obviously reflects the important motive of a stable rent (*juros* were appreciated by widows and monasteries). An interest reduction was called a *crecimiento* because the holder of the *juro* was given the choice between either receiving its face value in cash, or paying the difference with the new face value. For example, in a reduction from 7.14 to 5 percent, the holder of a *juro* with a rent of 1000 had the choice between receiving 14 000 in repayment of the *juro*, or keeping it and making a one time payment of 6000. The *juro* that had been "increased" bore the new face value which would be paid if it were redeemed at a later date. *Crecimientos* were not forced interest reductions because of an escape clause (see an example in the Appendix).

The very definition of the *juros* provided a commitment device against a forced reduction. When the interest was reduced, the "invariant" was not the principal (as for an annuity in 17th century France or 18th century England), but the annual income. When the face value is the invariant, it is relatively easy to force a reduction of the annual income. But when the invariant is the annual income and the only way to reduce the interest rate is to increase the principal, such a forced "reduction" is much more difficult to impose on the *juro* holder. No *juro* had its annual income reduced during the reign of Philip II. All interest reductions were voluntary. The issue will be discussed again in the context of the 1575-77 and the 1596-1697 crises.

In a perfect capital market with competitive agents, interest reductions through dividend reductions and capital increases are trivially equivalent. In Castile, a reduction, either gradual or *in toto*, of the interest rate on the long-term debt could have been achieved by

a combination of *crecimientos* and trade with the market prices anticipating the probability of *crecimientos* in a perfect capital market. This context was no more relevant in 16th century Castile than in 18th century England. Since the method of the *crecimiento* generated an increase of the capital stock, it had to be applied gradually on different *juros* with different rates that coexisted at the same time.

3. Funding the juros

The funding of the domestic debt should, above all, have a stable basis. Since the existence of public debt, the standard method to increase the credibility of that debt is the earmarking of revenues[12]. In 18th century England, each new bond issue was tied to a tax on specific items, typically an excise that was collected by the newly created elite administration (Brewer, 1988). In Castile, *juros* were also defined with respect to their funding - however, there was no central control as in the English Parliament.

Table 1

Table 1 presents an overview of the revenues according to their capability for debt servicing. There are four parts in the table, each defined by its reliability for the servicing of the public debt.

(i) On the left side, the *ordinary revenues* provided a stable source of funding. In the top part, the fixed contribution of cities provided the most reliable base because it was in control of the cities and the service of the juros had first claim on these revenues. In the lower part, the taxes that were administered directly by the Crown (e.g., import duties, monopolies) were less reliable because there was no independent control on their use and they were subject to the fluctuations of economic activity.

(ii) On the right side, the *extraordinary revenues* were of two types. In the top, the contributions of the cities were stable but they had no permanent legal status

[12] In the US, retirement benefits in the social security system are financed by a special tax and budget. The Bush administration failed in its attempt to include the Social Security tax in the general budget because of the protests that it would endanger the future benefits.

and had to be renewed by voted every few years. Hence, they could ot be used to service the long-term debt. In the lower part, the revenues were neither politically nor economically stable.

Cities and the encabezamientos

Throughout history, the most important feature of a credible public debt (with low interest rates) has been the alignment between the debt holders and the people who control and enforce the taxes that service the debt. It is therefore not surprising that the public debt emerged in the Italian city-states of the High Middle Age with the institution of the Monte (Pezzolo, 2008): the government of the city was run by the ruling class of the merchant activities that were the "raison d'être" of the city. This class and their family relations were at the same time the holders of the city's debt and in control of the determination and the administration of the taxes that serviced that debt[13].

What was good for a city-state could also be used by a state that included cities. The Italian system was applied to 16th century Castile on a grand scale[14]. The setting was ideal: most of the Castilian realm was represented by eighteen cities, with their surrounding regions, and negotiations between the Crown and the Realm were centralized in the Cortes.

The main features of the Castilian fiscal system were formalized in the Cortes of 1536. The main tax in Castile was the *alcabala* (Zabala, 2000), a sales tax with a nominal rate of 10 % that acted more like a legal maximum. The actual rate was much lower, possibly around 2%[15]. Before 1536, the tax had been collected both by tax farming and lump payments (*encabezamiento)* guaranteed by cities[16]. In the Cortes of 1536, the system of *encabezamientos* was generalized to *alcabalas* in Castile as the

[13] In the city of Burgos (1650), out of 800 families, 120 holded *juros* for a total amount of 2 million ducats and "all but two or three of them were from the *caballero* elite which ran the city" (Thompson 1994, p. 161).

[14] In 1522, Francis I introduced that system in order to finance his fight against his arch enemy, Carlos V. Francis I issued a loan through the city of Paris (Vührer, 1886). The Rentes sur l'Hôtel de Ville de Paris can be considered as the formal start of the public debt in France.

[15] See the Appendix and Artola (1982), p. 50.

[16] *Encabezamiento* can be translated as "heading" (of different revenues). It is equivalent to the "bottom line". See Alonso García (2007).

encabezamiento general. The amounts of the annual lump-sum payments for each city were set for about six years. They were discussed in the Cortes and adopted by majority voting. That system provided obvious benefits to all parties[17], but it also reinforced the asymmetric information between the Crown and the cities, which had an impact on all the payments stops of Philip II, as we will see later. The *juros* had been serviced at the local level before 1536, but the *encabezamiento* provided the most stable basis of the servicing of the *juros*.

The lack of a central administration to directly collect the *alcabalas* enhanced the borrowing capability of the central government. The delegation of tax revenues and the debt service was a commitment device that enabled the Crown to increase the domestic debt to a level that was unprecedented in the 16th century.

Although *juros* were administered by cities, they were not contracts between holders and cities, but between holders and the Crown. They could thus be traded in the entire realm with registered sales and transfers. An example is provided in appendix. Because of the delegation of revenues collections, there was no centralized market (as in 18th century England) and it should not be surprising that the coupon rates for apparently similar *juros* were not identical. However, there was an active market for *juros* as can be verified in the clauses of some financial contracts[18].

Some tax farming was used by cities after 1536, but only when it proved to be a more efficient method locally. Cities had an incentive to extract the best quantity of revenues through auctions for tax farming in order to reduce the difference from the

[17] Whether the cities or the central government pushed for the change has been debated in the literature. According to Perez Fortea (2009), the central government was the driving force behind the change. Cities used the *encabezamiento* to increase the share of the tax burden toward the region that they controlled (Morales García, 1997, p. 127).

[18] In the *asiento* signed with Lorenzo Spinola on December 31, 1572, a clause specifies that some *juros* have to be evaluated according to the market and the evaluation of the market should be certified by three or four other bankers, (AGS, Contaduras Generales, leg. 85-2: Asiento de Lorenzo Spinola, 31/12/1572.). There were many other similar examples.

encabezamiento that was fixed[19]. Monitoring and enforcement remained in the control of the cities, rather than the Crown[20].

The amounts of the *encabezamientos* for the cities were determined by centralized negotiations among the cities within the meeting of the Cortes. These amounts were determined to be at a fixed nominal level for long intervals (see Figure 1). Each readjustment of the *encabezamiento* would require lengthy negotiations and that cost imposed some interval of time between these negotiations. During these intervals, the real value of the revenues would decrease due to the inflation rate (an average annual rate of about 1.3 percent).

Other ordinary revenues

The central government collected customs and profits from regulated monopolies. As the government had no tax administration, and these taxes were collected at specific locations (e.g., customs, salt production), it was relatively easy to subcontract their collection to local entrepreneurs through tax farming. These revenues were under direct control from the central government and thus did not benefit from the special protection that was given to the taxes collected by the cities. They provided a base for debt funding, but that base was not as stable as the *encabezamientos* because of the direct control by the central government and because of the fluctuations in trade and general economic activity. Accordingly, they supported *juros* of lesser grade.

Extraordinary revenues

The extraordinary revenues, on the right of Table 1, could not provide a good source of funding for the public long-term debt. Few *juros* were written on these revenues, at least in the 16th century, and they traded at a discount.

The *servicios* (with two components, *servicio ordinario* and *servicio extraordinario*) were similar to the *alcabalas*. They were administered by the cities and their level was

[19] The king's representative (*corregidor*) in Sevilla informed the king of this practice, disapprovingly (Fortea, 1990, p. 233, note 93, cited by Morales).

[20] The crown had a local controller (*receptor real*), often a banker or a lender to the crown, to monitor the tax revenues. Edward I had done likewise in England when he allowed Riccardi supervisors in the customs offices. When he did not need the Riccardi, he fired the supervisors and bankrupted the banking family. Genoese bankers were never put in that position because Philip II could not “fire" the cities that serviced the *juros* taken as collaterals for the *asientos*.

determined by centralized negotiations in the Cortes in a bargaining joint with that of the *alcabalas* (see below for 1575). But compared to the *alcabalas*, the *servicios* were a voluntary contribution of the cities and the duration of the contract was only for three years (Carretero 1998, p. 45). They were renewed repeatedly - though cities, hoping to keep some room for bargaining, insisted that such renewals were not automatic. Their levels were very stable under Philip II but, because of their legal status, they could not be used to service the domestic debt, at least until the end of the century. We can include in this type of tax the *millones* that, following the disaster of the Armada, were voted for a period of six years and let to expire after that period.

Other revenues, from the Church and other sources, were too fragile, either politically or economically, to fund the debt. The highly variable revenues from the silver trade (through a 20% mining tax in America) were large but could not form a stable basis for funding. Castile relied on the same method as Edward I in 13th century England when wool exports were restricted to specific harbor for better monitoring: Sevilla was the unique legal port of entry for American precious metals (essentially silver). The revenues from the tax were subject to the uncertainties of production and transportation, thus highly variable, making Castile a somewhat unique case before the raw commodity exporting economies of the 20th century.

Between 1560 and 1575, some *juros* were funded by the revenues of the *Casa de la Contratación* that managed the silver revenues and was directly controlled by the Crown (Ruiz Martín, 1965). Not surprisingly, they were traded at a significant discount. In this sense, there cannot be a meaningful relation between the revenues of silver and the debt service.

The evolution over time of the different types of revenues is presented in Figure 1. One observes the volatility of the silver revenues which were higher on average in the last quarter of the century, the step-like revenues of the *alcabalas*, a gradual increase of all other revenues in the first part of the reign and their stagnation afterwards. Because of inflation (1.3 % per year), caused by the inflow of silver, real revenues fell toward the end of the century. (Revenues deflated by the price level and by population are presented in Figure 3.)

Direct revenues from customs and monopolies are put together under “Farms”. Revenues from the Indies are represented in actual numbers by points and, in a 3-year

moving average, by a curve. The *Millones* (to be described later) are included in the *servicios* for the years 1591 to 1596. The variability of the other revenues is illustrated by Figure 4.

Figure 1: Revenues

4. The short-term debt and financial contracts

Expenditures (essentially military as in all countries before Waterloo) were driven by wars and thus highly variable, with levels that were inflated in the 16th century by the revolution in military technology. Since revenues were also affected by the large fluctuations of the silver imports, these unprecedented shocks had to be absorbed by financial contracts and short-term loans. As for the long-term debt in the previous section, the case of 18th century England presents a useful reference since it is well-documented and it took place when policy faced fewer constraints.

The English method of debt financing became operational after a long transition that has been called a "financial revolution" by Dickson (1967). Dickson and others have emphasized that, even after the completion of that transition, the government could not issue large quantities of liabilities, both long- and short-term, without the collaboration of institutions such as the Bank of England and the South Sea Company, and of skilled financiers (the "moneyed men")[21]. The task of these agents was greatly facilitated by the workings of the centralized financial market in London that was open six days a week.

We should therefore be aware that the role of financial agents was even more critical in 16th century Castile. when large financial institutions and a centralized financial market did not yet exist. Carlos V had a special relation with the Fuggers. Under Philip II, from 1561 on, the main players were the Genoese bankers (Ruiz Martin, 1968). They had the expertise to handle the complex transactions between Castile, the Netherlands and Italy, and within Castile, they operated through letters of exchange and other short-term contracts.

[21] See also Chamley (2011). As a counterexample, the failure of France in the same century to issue marketable bonds may be related to the absence of such a class of finance people. Notaries may have been partially substituting for financiers. See Hoffman, Postel-Vinay and Rosenthal (2000).

The contracts between the Crown and the bankers were called *asientos*[22]. They specified, with some but not complete details, the payments between the bankers and the Crown (e.g., date, place, currency, exchange rate, interest rate). When they included loans, the average maturity was about two years – however, some contracts could last up to ten years. When the exact dates for repayments were not fixed, the *asiento* often specified an interest rate. In the period of 1570 to 1575, the standard rate was 12 percent per annum, with some exceptions. Contrary to some descriptions in the literature (Conklin, 1998), the greater share of *asientos* was not written in loans to pay the army in Flanders. Indeed, not all contracts were loans and more than half the contracts involved only domestic transactions, which illustrates the role of the Genoese bankers in the workings of capital markets within Castile (as the moneyed men would in England later).

Some *asientos* were collateralized by *juros*. The collateral had two purposes: first, to be a collateral; second, in keeping with the overall fiscal policy model, when the spending shocks turned out to be more than transient, the short-term loan had to be converted into a long-term loan. The lender could then sell the collateral instead of receiving cash. Such a sale should not be taken as a sign of failure from the Crown, but instead as part of an efficient overall policy.

Under Carlos V, the *juros* as collateral could be sold only if the Crown did not meet the terms of the *asiento* (*juros de caución*). In 1561, following an initiative of the banker Juan Curiel de la Torre, some collaterals were *juros de resguardo* (*al quitar and por de vida*): the banker could sell such a *juro* provided that he would return a similar *juro* if the Crown met the payment schedule of the *asiento* (Ruiz Martin, 1968). In this case, the service of the *juro* that had been sold would be deducted from the liability of the Crown. An example is described in the Appendix. The system of the *juros de resguardo* enabled bankers to refinance *asientos* at a low interest rate[23]. That system affects the

[22] These contracts are easily available in the archives of Simancas, set by Philip II himself, nicely stacked by year and alphabetical order of bankers. The reading of the originals often provides very useful information about financial transactions at that time. For summary statistics of the contracts, see Table 3 in Drelichman and Voth (2011).

[23] When the crown paid back the *asiento* to the banker, the banker had to return a *juro* to the crown and that *juro* would naturally be evaluated at par (How could the crown acknowledge in a contract that some *juros* were below par?). The loophole was that the banker did not have to return the same *juro*. He could then buy a carefully chosen *juro* with low market value to satisfy the obligation to return a *juro* at par.

rate of return on the investment of bankers on their own funds, and therefore invalidates the method of Drelichman and Voth (2011) who ignore the financing methods of the bankers.

5. Cycles in the debt policy

In the standard modern theory of public finance, the optimal fiscal policy of a central government in a frictionless economy is to minimize tax distortions. Accordingly, the debt policy should be driven by the smoothing of taxation: at any time, the announced program of future taxes revenues should, by and large, be a constant fraction of output, and that fraction should be adjusted to meet the government budget constraint that equalizes the present value of the expected future revenues and expenditures, including the service of the debt. Any mismatch between the flows of revenues and expenditures should be met by increases or decreases of the debt, as for private individuals in their saving plans[24]. England presented a textbook illustration in the 18th century (Barro, 1987). It also, however, despite being endowed with a centralized government and a well-developed modern-like capital market, departed from these principles a number of times.

Borrowings in the second part of the Napoleonic wars were relatively small despite higher expenditures because the government had exhausted its borrowing capacity. England also made the distinction between the long-term funded and the relatively costlier short-term unfunded debt. Short-term debt was used in all the wars. Its level was high at the beginning of the 18th century, then was much reduced during the "Financial Revolution", a period that took fifty years between" from 1690 to 1740 (Dickson, 1967). Short-term debt was allowed to accumulate again during the War of American Independence.

The constraints in Castile

In Castile, any accumulation of the *asientos* that was not transitory should be accounted for as a permanent liability of the government and therefore be refinanced through the

The trick should have fooled no one but could be useful in granting side payments to the bankers for special favors or loans. The cities objected to such less-than-transparent deals.

[24] See Barro (1979) for a quadratic loss function with uncertainty, and Chamley (1985) for the theory of second-best taxation.

long-term debt in *juros*. That was the core of the fiscal policy of Philip II. However, he had to adapt to specific constraints. Compared to the later case of England, the government of Philip II faced two types of additional constraints.

1. No lengthy financial revolution had taken place that could lower the transaction costs in long-term debt financing. The *juros*, although redeemable at par, remained less flexible than English annuities. We have described in Section 2 the decentralization and the fragmentation of their capital market.

2. The most important constraint was the absence of a unique government. As described in Section 2, the delegation to the cities of the servicing of the funded public debt enhanced the credibility of that debt. But that delegation imposed constraints on the adjustments of taxation that could not proceed smoothly as in 18th century England. We now turn to this issue, that is central to our paper.

In an economy with a central fiscal authority like the Parliament of 18th century England, that authority has the available information about future revenue needs. In Castile, authority on expenditures was the exclusive domain of the Crown, yet cities that were represented in the Cortes had some partial authority on taxation.

We have seen that the cities collected the most stable funding tax, the sales tax (*alcabala*), and that the amount of these revenues was set through collective bargaining in the Cortes. The Cortes could not meet independently like a modern parliament. Instead, it had to be called by the Crown. No increase of the *encabezamiento* could be done without a meeting of the Cortes and an agreement of the cities. They did not have the power to completely oppose a tax increase, but they could reduce the amount of the increase, or delay its implementation for a few years.

An agreement on the level of ordinary taxes managed by cities effectively imposed a ceiling on the service of the domestic debt. Because of the costly negotiations, the taxes could be adjusted only at widely separated moments in time and not continuously (as in the standard model of optimal fiscal policy).

The negotiations in the Cortes were affected by two main issues. First, the utilities of the expenditures might have differed between the Crown and the cities, that might have little interest in the war in Flanders. Second, even if the Crown and cities had agreed on

the utilities of expenditures[25], they faced a situation of asymmetric information. That problem was well known in all feudal countries where the sovereign faced the constraint of "evident necessity" and had to justify the taxation (in men or money) for wars. A contribution to the solution of the information problem was found in 12th century in the Cortes of Aragon[26] and the 13th century in England[27].

The debt cycle

Because of the fixed cost of each renegotiation of the debt service ceiling and the asymmetric information, the fiscal policy under Philip II went through debt cycles in four phases. In the second half of the 16th century, three such cycles occurred which are illustrated by Figure 2.

Figure 2: Debt service and ordinary taxes

(a). *Regular regime*

In the first phase, the service of the *juros* (*situado*) is below the ceiling of the ordinary revenues and increases gradually over time. There should be no large accumulation of the short-term debt except under the prospect of short-term windfall gains in silver income. Negative permanent shocks on the budget are absorbed by an increase in the long-term domestic debt. This regime applies for some years before 1558, and after the settlements of 1560 and 1577.

(b). *Accumulation of asientos*

[25] Under the most favorable circumstances spending would be on a public good (e.g., the glory of the country), each city would always have an incentive to bargain more in order to reduce its contribution.

[26] As the *raison d'être* of public finance was the military expenditures, the Reconquista between the 11th and the 15th centuries shaped the institutions and the fiscal system that were in place at the beginning of the 16th century. Already in the 12th century in northern Spain, fiscal issues were discussed in assemblies with a representation of the three orders (Church, nobility and merchants in the third estate). Under the legal basis of the fundamental law ("Ley de Ordenamiento") of 1328, these assemblies evolved into the Cortes which in the 16th century, represented only the third estate ("testamento") of the merchants and patricians of the cities. The only real purpose of the meetings was the determination of the tax policy.

[27] For an analysis of the role of asymmetric information in some clauses of Magna Carta (1215), see Green (1993).

As the service of the domestic debt nears the ceiling of the ordinary revenues, refinancing the *asientos* through *juros* becomes more difficult: because of the decentralization of the *juros*, some towns may be up to the revenue constraint before the aggregate service reaches the aggregate ordinary revenues. The level of *asientos* increases in that phase which took place before each of the three crises in 1558, 1575 and 1596.

(c). *Crisis, payment stop and parallel negotiations with the cities and the bankers*

When the level of *asientos* has reached some value, the Crown initiates negotiations with the cities. At a time that cannot be predicted accurately, by definition, the Crown declares a payment stop on all the *asientos*. The payment stop would not be necessary if the cities would easily agree to the increase of the debt service ceiling. In a situation of asymmetric information, the payment stop may be a powerful argument to convince the cities of the "evident necessity". The payment stop satisfies also the function of the information event in the Townsend (1979) model, as will be discussed below. That phase took place in 1557 to 1562, in 1575 to 1577 (but the Crown attempted to raise taxes 1573), and in 1596 to 1598.

(d). *Simultaneous settlements and conversion of all asientos into juros*

Separate settlements with the bankers and the cities end the negotiations. The bankers take a haircut in a general agreement (*Medio General*), while the cities accept higher taxes in the settlements of 1560 and 1577. In 1598, taxes are not increased but the interest rate is reduced on some *juros*. However, that settlement should be viewed as a prelude to the next negotiations of 1607, as the temporary settlement of 1558 preceded that of 1560. A key feature of the settlement is the conversion of all the *asientos*, net of any haircut, into long-term *juros*. That feature has been neglected in the literature but reinforces our interpretation of the debt policy.

A stylized model of short-term and long-term debt

The average interest rate on *juros* was between 7 and 5 percent. The rate on *asientos* was double that, around 12 percent. Before the payment stops of 1557, 1575 and 1596, the amounts of outstanding *asientos*, gross of the collaterals, were 7.5, 15 and 7 million ducats, respectively. Why would the Crown let *asientos* accumulate despite the high

cost? The explanation is the high cost of raising the ordinary revenues for the funding of the long-term debt.

The Crown delayed the tax increase (originally intended to fund the long-term domestic debt) and accumulated instead some costly short-term debt. This was done because of future discounting, and the probability that a tax increase would not be necessary, should the war turn out favorably. Assume the lump sum cost to be C, the discount rate per period (a period being a year) to be r, and the probability per period of avoiding the tax rate is π. Thus, the gain from delaying another period is $(r + \pi) C$.

The cost of delay is the higher interest rate on the *asientos*. Let R be the interest rate on the *asientos*, per period, and assume that the discount rate on the *juros* is the same as the discount rate of the Crown, r. If the stock of *asientos* is equal to a, the cost of delay for another period is $(R - r) a$. The Crown should delay and let *asientos* accumulate up to a level $\bar{a}$ such that the marginal cost and benefit from delaying one more period are equal. Hence,

$$(R - r)\, \bar{a} = (r + \pi)\, C \qquad (1)$$

The argument has two implications:

(i) Whatever the parameters, the Crown should always let some *asientos* accumulate, despite a higher interest rate, before beginning negotiations on a tax increase and the debt conversion. That property is due to the fact that from a position of zero *asiento*, the cost of *asientos* is second order with respect to the time of delay, while the gain from delay is of the first order. The cost is second order because of the product of two first order terms, the flow of the accumulation of *asientos* and the flow of the income paid on the *asientos*.

(ii) The maximum level of *asientos* in the previous formula depends on the parameters of the model. As an example, since the interest rate of the *asientos* was about twice that of the *juros*, with $R = 2r$, and assuming a probability of avoiding the tax rate at six percent per year, the previous formula becomes

$$\bar{a} = 2C. \qquad (2)$$

To put numbers in context, suppose that the Crown has accumulated *asientos* of 5 million (a plausible estimate for the debt in 1575, net of the *juros de resguardo*). Under the previous formula, that amount would be optimal for a cost of 2.5 million ducats. That is not an unreasonable estimate of the cost of the Cortes. It is equal to the increase of the *alcabalas* that was declared by the Crown in September 1474, and not implemented by the cities. In this example, the cost of the Cortes is equivalent to a postponement of that increase for one year. The negotiations actually lasted three years.

The suspension of payment to the bankers was a signal to the cities that the Crown needed an increase of its ordinary revenues. Each suspension of payments occurred when the Crown was negotiating with the Cortes an increase of the cities' contribution. Once negotiations had led to a higher level of ordinary taxation, the Crown had new space to increase gradually the level of the long-term debt and to have more collateral for *asientos*.

In the traditional view among historians and economists, the payment stops were caused by liquidity shortages. Such shortage could occur only if the Crown could not sign new *asientos* because of an "excessive" level of short-term debt. If that were the case, which is not obvious in the analysis of the 1573 to 1577 crisis below, the Crown should have been able to reduce the short-term debt by issuing more long-term debt, as it was doing in the phase (a) of the cycle. Our argument is that this possibility was closed to the Crown because it was constrained by the ceilings that had been established by the cities. The payment stop on the short-term debt was at the same time a consequence of the inability to increase the long-term debt and a signal to the negotiating cities to raise their contribution.

6. The debt negotiations and conversions

The service of the long-term debt reached the ceiling imposed by ordinary revenues three times during the reign of Philip II. We now analyze these three events in more detail.

6.1 The first crisis (1557-1560)

The events of 1557 to 1560 have to be considered as a whole, which fits well into the general framework that is presented in the previous section. The events were triggered by the constraint on the service of the domestic debt. They ended with an increase of that ceiling and a complete conversion of *asientos* into *juros*.

At the beginning of his reign in 1556, Philip II inherited from his father, Carlos V, a debt of 7.5 million ducats in *asientos*[28]. He quite naturally ordered a review of the accounts and began negotiations with some bankers to refinance *asientos* into *juros*. But the service of the debt was reaching the total amount of ordinary revenues, leaving no room for more *juros* (Figure 2). On April 17, 1557, Philip II declared his first payment stop from London, where he was spending time with his wife, Mary Tudor, queen of England. The suspension affected only the repayments that were due on the *asientos* but not the service of the *juros* - as for any stop payment of Philip II.

The decree did not intend to repudiate the debt, even partially. It declared a swap of some *asientos* into *juros* at 5% - the bankers could sell these on the market[29]. That swap did not apply to the Fuggers who were, at the time, some of the main creditors, and it did not address the main problem, which was the ordinary revenue-derived ceiling. The second part of the policy was the promulgation on April 30, 1558, by the regent in Castile, the princess Doña Juana, of a new tax on the exports of wool. New customs were also created between Portugal and Castile on January 30, 1559 (Ulloa, 1977).

Genoese bankers had accepted the *juros* at 5% in order to settle the negotiations. However, *juros* at 7.14% were obviously selling faster than *juros* at 5%. The bankers therefore proposed to convert the swap into *juros* at the rate between 7.14% and 10% in the following years while they would grant new *asientos*. That policy which was probably viewed as a stopgap, was initiated by Nicolao de Grimaldo in May 1558 and followed by all other bankers between 1558 and 1560.

[28] Carlos Morales (2008). See also a report in March 1557 (AGS Estado, leg. 121, fol. 61) that is referenced by Toboso (1987, p. 115). The computation of the short-term debt is always an approximate. *Asientos* were not traded in a market and the indebtedness on a particular contract at a particular point of time depends on assumptions about the interest rates and the exchange rates. There is no such thing as "the interest rate", in today's economies and a fortiori, in the fragmented capital market of Castile.

[29] Ruiz Martin (1965) reports that for the year 1552, redeemable *juros* (47% of all *juros*) were at 7.14% (for a fraction of 47.6%), 5.5% (5.2%), 5% (30%). The remaining 16% paid other rates.

The suspension of 1557 and the following negotiations were not concluded by a general settlement (*Medio General*) because each banker settled separately with the Crown. In the current state of knowledge, it is doubtful that the first payment stop of Philip II generated any default on the *asientos*.

When Philip II returned from Flanders to Castile on September 8, 1559, he intended to bring the finances of the Crown in order. He summoned the Cortes in Toledo and ordered a general review of the budget. The stock of *juros* was 21.659 million ducats with an interest service of 1.5 million (Pulido, 2002, p. 76). The debt in *asientos* was 4.5 million (Neri, 1989, p.83), as the 1557 decree had refinanced only some of the short-term debt. Negotiations would last for the entire year, 1560. On November 14, 1560, the king declared his second suspension of payment (always on the *asientos*). One motivation for this payment stop was probably similar to that of the other two stops in 1575 and 1596: namely, to convince the cities of the "evident necessity" to raise the level of taxation.

Refinancing through funded debt was achieved through the agreement with the 1559-1560 Cortes that specified an increase of 37% of the *alcabalas*, effective in 1562. In agreement with the model of the previous section, all *asientos* were converted into *juros*[30]. There was no *Medio General* after the payment stops of 1557 and 1560. After the settlements, which were made separately between individual bankers and the Crown, the signing of new *asientos* resumed rapidly. In January 1561, a consortium of bankers loaned one million ducats to the Crown. The gradual conversion of *juros* on the *Casa de la Contratación* into *juros* of higher grade was implemented through contract clauses in new *asientos* (Ulloa, p. 763). From 1562 onwards, *juros de resguardo* on the new *alcabalas* would be used.

Between 1562 and 1574, the *encabezamiento* on the *alcabalas* was not revised (Figure 2). Other ordinary revenues increased gradually, because of economic growth and because the government extended its revenue base (Figure 2)[31], while the debt service

[30] Because the settlement of the *asientos* took place in two steps, there is no official document that applies to the entire short-term debt. However, there is an indirect proof in the decrees of the payment stops. The decree of 1560 applies to the *asientos* written before 1557 that were not converted in the 1558 settlement (Carlos Morales, 2008, p. 85). The decree of 1575 applies to all *asientos* written since 1560, thus giving indirect evidence that *asientos* written before 1560 had been converted in *juros*.

[31] From 1564 on, the government collected the revenues from the salt monopoly, thus increasing its permanent revenues about about 0.2 million ducats (1/6 of the *alcabalas*).

also increase gradually following the model of the previous section. As the revenues of ordinary taxes stayed ahead of the debt service, the system worked until the early 1570s.

6.2 The main crisis (1573-1577)

The crisis of the 1570s was a pivotal moment for the finances of Philip II and has been the subject of a number of studies. Most of them focus on the negotiations between the Crown and the foreign bankers, and yet this does not provide a convincing explanation, as discussed in the introduction. We emphasized in the previous section that center stage should instead go to the relations between the Crown and the cities[32].

In the early 1570s, military expenditures increased rapidly both in Flanders and on the sea (Battle of Lepanto, 1571). As revenues from the Indies were low during this period (Figure 1), the deficit increased. The *encabezamiento* had been fixed, in nominal terms, in 1562. Other ordinary revenues did not increase after 1567, partly because of the ongoing war. The service of the debt had now reached a point where it absorbed most of the Crown's ordinary revenues (Figure 2). Following the model described in the previous section, the situation called for an increase of tax revenues for the funding of the public debt. This required the meetings of the Cortes. The crisis developed in two phases. In each of these phases, the Crown faced two fronts: the cities and the bankers.

Before 1575, the accumulated arrears on the *asientos* were financed by *juros de resguardo*, some of which were put in circulation. As the service of the *juros* was on a collision course with the stationary level of ordinary revenues (Figure 2), from 1573 onwards, the Crown pressed the cities for a widening of the tax base. The failure of these efforts led the Crown to promulgate the tripling of the *alcabalas* in the autumn of 1574. As the cities were in charge of the tax collection, the decree was ineffective[33]. This stalemate between cities and the Crown precipitated the second phase.

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[32] For the historical description of the dealings between the Crown and the cities we rely on the reference work of Pérez (1990). See also Fortea Pérez (2008).

[33] It is standard in the literature to take the tax increase for granted. There is no evidence that the decree of the Crown was applied. Rather, there is evidence to the contrary. Pedro Luis de Torregrosa reported to the king in a letter dated on August 4, 1575, that if the increase of the *alcabalas* would be recovered in Toledo by tax farmers—recall that the Crown had no administration--the merchants of that city threatened to reduce their trade in that city, thus bringing the tax farmers to bankruptcy (AGS CJH 149).

During the first half of 1575, the new *asientos* were either very short-term or written on the promise of an increase of the *alcabalas*. In the stalemate, the Crown suspended payments to the bankers on September 1, 1575 and, in the following month, recalled the Cortes. The simultaneous negotiations with the Cortes and the bankers were concluded only in November and December 1577, respectively.

Before 1575: attempts at tax increases and new *asientos*

In April 1573, Philip II summoned the Cortes and, as in previous negotiations in 1559, proposed a 30-year plan to get rid of the public debt (*desempeño*) (Fortea Pérez, 1990, p. 45): higher taxes would generate a surplus for twenty years and, for the last ten years, the burden would be reduced to finish off the remaining debt. Initially, the cities accepted the plan's general idea; however they continued to negotiate through the Cortes. No stable agreement could be achieved without the formal approval of all the cities.

While negotiations dragged on, Philip II tried his second plan in December 1573: a new flour tax would be created that would be applicable without exemption. The emphasis was on an equal share throughout the Spanish realm of the increased tax burden. The flour tax, even at a small rate, would have provided a huge extension of the tax base[34] and was strongly resisted by the cities. Indeed, the cities insisted on a commitment to a permanent reduction of taxation in the future and to a stop on the sales of offices. Furthermore, they were skeptical regarding the Crown's commitment to a budget surplus – a claim no more credible in the 16th century than it would be in the 21th. (Discussions between the cities and Philip II were similar to the debates on the budgets in some contemporary economies.) The Cortes was suspended at the end of 1573 to enable the delegates to return to their cities for consultation. Heated discussions delayed the resumption of the Cortes until June 1574.

Each delegate came back with special *ad hoc* demands, much like the "pork" in the current US congress. There was a further complication in that the taxation of the clergy required a papal decree. During the summer of 1574, other issues were discussed such as the formal transfer of the *juros* in quotas to the cities, which would then be free to choose how to service or redeem it, or the sharing of the tax burden between the cities.

[34] The tax could have yielded between three and four million ducats (Fortea Pérez, 2009, footnote 7).

The cities were particularly concerned with the unfunded debt of the *asientos* and the role of the Genoese bankers[35]. The strong popular sentiment against *asentistas*, similar to the reaction today against finance, was used in the following year by Philip II in his *decreto* of payment suspension to the bankers. Unable to find a compromise, the Crown took a different strategy.

The new tax plan of the Crown

In its first proposals, the Crown may have used the debt reduction as a bait to increase taxation. In its new strategy, the Crown did not bother to mention the principle of the *desempeño a*lthough the cities continued to insist on it (Fortea Perez, 1990, p. 73). Instead, the Crown noted the increase in recent large expenditures, and the subsequent rise in other tax revenues. Yet – it noted – the last forty years had seen only minimal increases in the *encabezamiento* (which had increased by a third in 1562 and left untouched in the Cortes of 1570 and 1573). The service of the domestic debt had continued to be on a collision course with the ordinary revenues during the protracted negotiations.

On September 20, 1574, Philip II simply tripled the *encabezamiento general* from 1.2 to 3.7 million[36]. The procedure was extraordinary in its timing and the amount of the increase. All the previous levels of the *encabezamientos* in 1536, 1547, 1552 and 1562 had been determined during meetings with the Cortes. Without the agreement of the cities, the tax would could not have been expected to be stable. Instead, it was no doubt seen as just another extraordinary levy. Despite the effort of Philip II to employ a special task force of "administrators, tax-farmers and public inspectors"[37], one doubts whether the level specified in the decree of 1574 was actually collected. Thompson (YEAR) claims that revenues could even have decreased, in reaction to such an unexpected tax increase. Why Philip II insisted on such a large increase is not clear. Obviously, a smaller increase would have provided sufficient room for larger debt service - as was the case for another ten years after the final settlement of 1577.

[35] The city of Salamanca instructed its delegates to reject the redemption plan unless a commitment was made to throw out of the kingdom all foreigners who dealt with *asientos* (Fortea Perez, 2009, p. 62).

[36] It was expected that a large part of the increase would be an extension of the tax base to bread, wine, fruits and agricultural products that had been exempted de facto so far, and that would now be taxed at about 4 %. (Fortea Pérez, p. 711990? 2008? 2009?).

[37] See Lovett (1985) , p. 31, and Hernández Esteve (1986).

Relations with the bankers before September 1575

During 1574, the new *asientos* amounted to 6.219 million ducats, close to the record level of 1572 (6.248 million ducats). That total included 2.658 million ducats to be paid in Flanders, about 3 million ducats in Castile and the rest in Italy (AGS CCGG 86).

1575 was critical. A complete list of all the *asientos* signed between January and the payment stop is presented in the Appendix. For the eight months before the suspension on September 1, 1575, Genoese bankers signed new *asientos* for 4.8 million ducats, the highest amount within such an interval of time. Between March and July, Nicolao de Grimaldo made the most important loans, by far, for a total amount of 1.9 million ducats. The first ones (1.3 million ducats) provided for disbursements during 1575 and repayments by the king during the same year 1575 in three tranches after each *quatrimestre* (37.5 percent for each of the first two)[38]. The short term of that loan (disbursement and repayment would occur within the same year; 1575) shows that Grimaldo was prudent. All bankers must have been cognizant of the financial situation of the Crown. As moneyed men, they had close ties with the government in Castile. Some may even have participated in financial committees of the government. The king had tripled the *alcabalas*. The cities would resist the increase, but the bankers were confident that the base for higher taxes was there. *Asientos* for almost a million ducats were written during spring 1575 on the promise for higher *alcabalas* in 1576 and after. The situation is easy to picture in the context of 2010 financial crises of lending to Greece. The bankers knew that the situation was risky but they would not have made these record loans in spring 1575 if they had anticipated the suspension in September.

(ii) The payment stop: 1575-77

Philip II signed the *Decreto* that put a stop on payments to the Genoese bankers on September 1, 1575. There had been discussions of the plan before but the exact date may have been chosen to shortly follow the arrival of the fleet[39] that came in on August 11, 1575. The Crown then negotiated in parallel with the towns and the bankers for the next two years, until the agreement with the cities in November 1577, and the *Medio General* with the bankers on December 5, 1577.

[38] See the Appendix.

[39] Revenues from the Indies in 1575 were 0.9 million ducats, about half more than the average in the previous three years.

Negotiations in the Cortes

The business of the Cortes was to readjust three types of taxes, the *encabezamiento* of the *alcabalas*, the ordinary and the extraordinary service. The usual sequence was to grant first the ordinary and the extraordinary service, and then to bargain on the *encabezamiento*, which was the main item. This time however, the Cortes, in order to increase their bargaining power, reversed the order and requested first a reduction of the 1574 decree (that had tripled the *encabezamiento*), before voting on the two services. Cities were fired by bitter feelings against the bankers and these cities rejected the higher taxes – taxes which were perceived as bankers' profits, the more so because of the lack of information (Fortea-Perez, 1990).

Negotiations were very slow. Philip II knew that he had to play a political game with the cities that represented the realm and did not follow the facile advice of impatient aides to use force. It took almost a year, until August 1576, to agree that the discussion on the *encabezamiento* would take place between the granting of the *servicio ordinario* and the discussion on the *servicio extraordinario*. That discussion took more than another year, until October 29, 1577. In the adjustments of 1547, 1557 and 1567, increases had been roughly proportional across cities. For the contract of 1577, however, the shares of some cities jumped up: Sevilla from 10.2 percent in 1557 to 17.5 percent in 1577, Toledo from 5.8 to 7.6 percent. Grenada's share dropped from 9.2 to 5 percent[40]. After the parties had finally come to an agreement on the *encabezamiento*, the voting on the *servicio extraordinario* was sped up and an agreement was reached in the following month.

Negotiations with the bankers

Could Philip II have avoided the payment stop? A moderate increase of the *alcabalas*, in order to keep up with the growth of the economy, would have been accepted by the Cortes and would have secured sufficient space to convert all the *asientos* into *juros*. In fact, after two years negotiations, such a conversion was eventually done, with a small haircut, and without recourse to an immediate increase of the cash inflow. In this sense, the payment stop was not caused by a liquidity shortfall.

All the evidence we have seen points to the use of the payment stop as an instrument by Philip II to achieve his goals. The efforts of the previous two years show that he wanted

[40] See Zabala (2000), Chapter 2 and especially Table 9, p. 64.

to reclaim a higher base for funding the debt and that goal was attainable given the growth of the economy since the last setting of the *alcabalas* in 1560 (effective since 1563). In the context of resentment against the *asentistas* (similar to the one after the 2008 crisis), Philip II used the payment stop in September - before the resumption of the beginning of the Cortes meeting in November - to show that he was going to be tough with the bankers. This also conveyed a signal that the situation was indeed sufficiently dire to require a large increase of taxation.

For the Crown, the payment stop also fulfilled the function of monitoring. The recent literature (Townsend, 1979) has emphasized the role of bankruptcy as the outcome of an efficient loan contract: the standard debt contract with a fixed interest is efficient because it saves on the cost of continuously monitoring the ability of the borrower to pay. All the costly monitoring is done at discrete points in time, when the borrower cannot meet the contractual payment. In 1575, the case was more complex than that of a simple one period debt contract, but the Crown made a special effort during the 1575-1577 period to review all the *asientos* that had been signed since the previous settlement, and requested the books of the bankers, who refused to comply. The bargaining on information delayed the bankruptcy process and increased its cost.

The sales of the collateral (*juros de resguardo*) by the bankers, their returns with *juros* of a possibly different type created a confusing situation in which the liabilities of both parties would be difficult to determine. This justified the Crown's claim to review all the *asientos*. The Crown set very soon the principle that it would pay all its debt to the bankers. The issue was obviously the amount of the debt. A commission (*junta*) reviewed all the *asientos* signed since November 14, 1560: 296 contracts with 66 people (Nicolao de Grimaldo 35, Lucian Centurion 34, Lorenzo Spinola 32, and so on). The balance of each active *asiento* was bringing past payments to the current date with an interest rate of 12%, the rate that was standard in the terms of the contracts (Carlos Morales, 2008, p. 164.)

The Crown and the bankers soon agreed on the amount of 15.2 million ducats, as stated in the final settlement. The larger part of the debt was not in unpaid arrears, but in repayments that were contractually scheduled for the future. We have examined all the *asientos* that were initiated between 1570 and 1575 (and some before 1570), and extracted those that specify contracts after 1575. The total amount of the payments

scheduled after 1575 exceeded 12 million ducats. Given the average maturity of these remaining liabilities, an approximate estimate of the present value of the scheduled repayments is about 10 million ducats. Arrears would then represent about 5 million ducats[41].

The terms of the final settlement between the Crown and the bankers had been set in March 1577, but it took until the end of the year for the parties to sign. Why the delay? A possible interpretation is that bankers may have been looking for a better deal. But the timing of the eventual signing provides a more plausible explanation. The document of the agreement between the Crown and all the bankers, the *Medio General*, was signed on December 5, 1577, immediately after the Crown had concluded its negotiations with the Cortes. That the signature of the agreement between the Crown and the bankers had to wait, without significant change, for nine months until the conclusion of the Cortes is additional evidence that the payment stop was driven by the difficult negotiations between the Crown and the cities.

The resolution in the Medio General of 1577

The debt of 15.2 million ducats was divided into two parts: 10.4 and 4.8 million ducats, respectively[42].

1. The first part, 10.4 million ducats, corresponded to *juros de resguardo*: 8 million ducats were paid by *juros de resguardo* that had been written at 7.14 percent and were reduced to 5 percent. The remaining 2.4 million ducats corresponded to *juros* written on the *Casa de la Contratación* and were accounted for at their market value, 55 percent of the face value.

2. The second part of the debt, 4.8 million ducats, was divided into two parts. Two-thirds were paid by *juros* on salt at the rate of 3.3 percent (30,000 *al millar*) and the other third by *juros* on rents from the Church and some jurisdictions, at the nominal rate of 16.5 and 2.35 percent (16,000 and 42,500 *al millar*).

[41] The existence of arrears is also confirmed by the terms of some *asientos* signed before 1575 that included clauses for the payments of arrears.
[42] We use rounded numbers. The *Medio General* specified exact numbers that can be found in the literature (Carlos Morales, 2008). Here, the exact amount is 15,184,464 ducats.

We now analyze in more detail each part of the settlement. As shown in the description of the *juros*, the reduction of the interest rate from 7 to 5 percent could not be a default, contrary to previous literature that was cited in the introduction. We claim that there was no haircut on that first part of the debt. As emphasized previously, credible financing of the *juros* was achieved at the cost of a fragmented credit market. The reference to a unique interest rate would be a-historical. Second, the reduction of the interest on old *juros* through the *crecimiento* implied necessarily the coexistence of *juros* with different interest rates. In 18th century England, annuities at 3% and 4% were traded simultaneously. The difference between the prices of these two annuities (traded daily) provided estimates of the expectations about the future interest reduction of the 4% annuities. We have learned[43] that in this very sophisticated environment, (i) agents treated differently 4% annuities that had been issued in different years, (ii) they sometimes seriously underestimated the capacity of the government to reduce the interest rate, thus overpricing the 4% annuity with respect to the annuity at 3%.

The real criterion about the interest rate on *juros* is the marketability of new *juros*. Ruiz Martin (1968) had provided some evidence of *juros* at 5 percent that traded during the period of 1570 to 1575 for 17,000 *al millar,* which is equivalent to a rate of 5.88 percent. In the archives of Simancas, there are numerous documents, still unexplored, but possibly in the hundreds, that show sales of *juros* at 5%, or even lower (see below), throughout the 1570s. Consider one example: Bernabé Centurión signed an *asientos* of 100,000 ducats in 1572 and was partially repaid by selling *juros*. These repayments, which had not been specified in the contract, illustrate the complexity of the actual financial transactions between the bankers and the Crown which were much more intricate than the terms of the contracts. Bernabé Centurion received the charge to convert *juros de por vida* paying 14% into *juros al quitar* at 5%. The first had a face value of 7,000 *al millar*[44]. Sixteen *juros de por vida* were "increased" from 7,000 to 20,000 *al millar*, with no change of their annual incomes (6,000 mrs to 115,000 mrs), for a total of 528,083. Most of the *juros* kept the same owner, who paid to the banker

[43] See Chamley (2011).

[44] *Juros de por vida* were obviously more flexible than simple life annuity on a given head.

the difference of 13,000 per 1,000 annual income. Six of them changed ownership (AGS CMC 1ª época 483-12)[45].

After the signing of the *Medio General*, the Crown issued a number of orders to specify the details of the payments. Special provisions empowered bankers to apply the *crecimiento* to some *juros* they had sold in order to recover the increment of the face value of the *juros*, along the lines of the transactions conducted by Barnabé Centurion. Another example of *crecimiento* is provided in the Appendix in relation to the next crisis of 1596 to 1597.

On the second part of the debt (4.8 million ducats), the terms of the *Medio General* do not enable us to have a precise evaluation of the terms of the settlement. The rate of the *juros* written on the salt farm was equal to 3.33% (30,000 *al millar*). There is some indication that the "market rate" of such *juros* was below 5%, but this issue remains to be researched in the archives. When we apply the same discount to the other third of the debt of 4.8 million ducats, the upper-bound of the haircut of the 1575 short-term debt is equal to 1.6 million, that is, 11 percent of the total.

6.3 The period 1580-1598

The Millones

The disaster of the Great Armada in the summer of 1588 and the need to rebuild provided clear evidence on the revenue needs of the Crown, as mentioned in the account of the 1589 Cortes (Jago, 1985)[46]. The cities quickly granted a special tax increase. It was levied like the *alcabalas* under the *encabezamiento*, but the cities insisted on the specific purpose of the tax, which was given a different name, the *servicio de millones*. This special tax to compensate for the failure of the Great Armada illustrates the role of signals in the situation of asymmetric information between the Crown and the cities, as during the payment stops in 1557 to 1560 and 1575. Note that contrary to these two previous episodes, the *Millones* were not motivated by the need of the Crown to

[45] One "new" owner was the father of the daughter on whom the *juro de por vida* had been written which made good sense from a family point of view.

[46] The observability of spending for something as tangible as ships played a role in the development of public finance in 18th century England (Brewer, 1988).

increase the capacity to convert short-term debt into funded long-term debt. As can be seen in Figure 2, the ordinary revenues were well above the debt service in 1590. The tax contribution of the cities was clearly meant to deal with the one-time loss of the fleet: the *Millones* were scheduled to last for only six years.

When the *Millones* ended in 1596, as scheduled, the service of the long-term debt, which had gradually increased since the previous settlement, had reached the level of the funding revenues. The contribution of the cities (*encabezamiento* and *servicios*) had not been adjusted since the 1577 settlement (Figure 2).

The Crown attempted first a renewal of the *Milliones*. The cities agreed on July 29, 1596, to the principle of a new temporary tax. In order to avoid the precedent of a straight repetition of the *Millones*, by the same amount, the new tax bore a different name, the *cuentos* (Fortea Perez, 2009).

A new agreement that contained specific clauses was signed on February 22, 1597, but, by mid-1598, only seven cities had approved the new tax. The Crown had to accept new concessions to get the votes of Toledo and Cuenca. A tenth vote was required to get majority. The Crown hoped to get it from Segovia. But the agreement was so flawed that the government decided to instead withdraw the project, leaving its implementation to the next king, Philip III.

The interest reduction in 1596-1598

As in the previous crisis of 1575, the crisis of 1596 was not caused by a liquidity problem. The *Millones* (1.33 million ducats) ended after 1996, but that negative shock on liquidity was more than offset by the record revenues from silver at that time (Figure 1)[47]. If the ratio between the service of the long-term debt and the funding revenues had been the same as in the early 1590s, no crisis would have occurred.

The decree was published November 29, 1596[48]. That date was the time reference for the later settlement. As in 1575, *asientos* were contracted immediately before the stop.

[47] The average of the silver revenues for the years 1591-1594 is 1.225 million ducats. In 1595 and 1596, these revenues were 6.2 million and 3.5 million ducats.

[48] Ulloa, (1977, p. 820).

In September and October, just before the stop, the Crown was negotiating with a consortium including Ambrosio Spínola, the Victoria brothers and the Maluenda brothers. This negotiation was for a large *asiento* of 3.6 millions escudos (about 3.9 million ducats), in twelve equal monthly installments that were to begin at the end of November. At the same time, the Crown secretly prepared the payment stop and ordered an analysis of all the documents related to the previous *decreto* in 1575.

Bankers who had signed *asientos* in the previous months were taken by surprise (Ulloa, 1977, p. 821), as in 1575. The short-term debt was now between 7 million and 8 million ducats[49]. All parties had learned from the bitter experience in the 1570s and tried to speed up a settlement. As had happened twenty years before, there was much resentment in the Cortes against the *asentistas* and, again, the payment stop may have helped them to get some satisfaction.

The problem of financing the service of the domestic was not resolved by an increase of taxation, as in 1560 or 1577, but by a reduction of the interest rate on part of the domestic debt. Interest rates on *juros* had decreased since the previous financial crisis[50]. In the previous crisis, part of *juros al quitar* at 7.14% were converted in *juros* 5%. Now it was the time to convert *juros de por vida* at 14% into *juros al quitar* at 7.14%.

Asentistas acted as a group in the negotiation. Within a month, they had set up a consortium in the form of the *Compañía del Medio General*. Contrary to 1575, the stop was not used as a device to increase ordinary revenues. Economic activity had stopped growing since the 1580s - partially explaining the stationary ordinary revenues of the Crown (Figure 1). It was probably felt by the Crown and the Cortes that higher domestic taxation would be difficult to enforce. The conversion of *asientos* in *juros* was therefore achieved without change of the tax structure.

Two-thirds of the short-term debt was thus converted into *juros* at 5% to be funded on available taxes. The remaining third was redeemed by a lowering of the interest rate on existing *juros*[51]. The operation reduced the interest on 1.5 million ducats and generated

[49] 7 million for San Ayan, and 7.831.251 for Castillo.

[50] We have seen that some juros at 5 percent were bought at par in the late seventies. The issue of interest reduction on the juros in particular but also in general, has been discussed in Section 2.

[51] That part was actually divided itself in 2/3 and 1/3 with the first on juros issued in Castile after 1580 while the second concerned juros serviced in Castile, Milano and Naples.

a service reduction of 75,000 ducats per year. For the interest reduction not to be a partial default, but an exercise of the redeemable option by the government, an important condition is that individuals have the choice to get the par value of their holdings instead of new *juros* at a lower rate. That provision was explicitly stated in the Medio General of 1598.

The Medio General of 1598

The total debt recognized by the king was 7 million ducats. By and large, *asentistas* acted as a group in the negotiation. Actually, within a month, they set up a consortium in form of the *Compañía del Medio General*. Contrary to 1575, the stop was not used as a device to increase ordinary revenues. Economic activity had stopped growing since the 1580s, thus explaining the stationary ordinary revenues (Figure 1). The Crown and the Cortes probably that higher domestic taxation would be difficult to enforce. The conversion of *asientos* in *juros* was therefore achieved without change of the tax structure.

Since most of the ordinary revenues were employed to the service of the debt, the new *juros* had to be serviced by extraordinary taxes that were less stable. Two-thirds of the *asientos* were thus converted into *juros* at 5% to be funded on available taxes (except in Naples). The other third was redeemed by the *crecimientos* of existing *juros*[52]. The operation reduced the interest on 1.5 million ducats and generated a service reduction of 75,000 ducats per year. For the interest reduction not to be a partial default, but an exercise of the redeemable option by the government, an important condition is that individuals have the choice to get the par value of their holdings instead of new juros at a lower rate. That provision was explicitly stated in the *Medio General* of 1598.

7. Conclusion

The fiscal system of Philip II was much more ingenious than described so far in the literature. We have attempted to show how it was adapted to the constraints of its time and that its evaluation according to the standards of 21th century economies can lead to serious misinterpretations. The main achievement of the government of Philip II was to

[52] That part was actually divided itself in 2/3 and 1/3 with the first on juros issued in Castile after 1580 while the second concerned juros serviced in Castile, Milano and Naples.

mobilize large financial resources through the transformation of his apparent weakness in fragmented political and market institutions into a strength for the build up of a domestic public debt of a modern magnitude.

The payment stops of Philip II were not caused by liquidity problems but were part of the overall efficiency of the system. We share the point of view Thompson (1994a), who is an exception in the literatura, and wrote that the "very periodicity of fiscal crisis" was "an integral part of the financial system of the Monarchy" and that "the term `bankruptcy' can be misleading. To apply the expression "serial defaulter" to Philip II is a deception. Although the issue of debt reduction is not the main one in this paper, we actually doubt that the payments stops were followed by significant haircuts. Preliminary evidence of the actual dealings between the government (*Tesoro General*) and the bankers shows that what seemed like debt reductions may actually have been transactions at prices closed to the market. Many issues in the finances of Castile under Philip II, large and small, remained to be examined. For this task, the archives in Simancas contain a large amount of information.

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Appendix

A case study: issue, secondary market and redemption

An amount of 2,243,752 maravedís was issued at 7.14% (100=14) in Madrid by the General Treasurer of the king, Juan de Lastur to Teresa Núñez, widow of Cristóbal de Alcocer and resident of Toledo. The income was therefore of 160,268 maravedíes to be serviced at *juros* on the *alcabalas* of Murcia that would be issued on July 1565[53]. The contract included the right to sell the *juros* to an institution or to individuals.

In January 1577, Doña Teresa sold the contract in Toledo to Diego Sánchez Ortiz who paid the total principal in silver[54]. Teresa notified the Crown of the transaction, sending a notarized "letter of renunciation". The new contract was issued March 8, 1577, with the same rights as the previous one. Three years later, Diego transferred the *juros* to Gaspar de Valmasea, "regidor" of Toledo who bequeathed them in the 1590s to his children from two marriages[55]. Eventually two of his children bought the other's parts and shared the total equally. The *juros* were eventually redeemed by the Crown in 1607 when new *juros* were issued at the lower rate of 5%.

[53] 40.000 maravedíes on the alcabala of meat, 40.000 on the alcabala of wine and 24.018 maravedíes on the alcabala of bread. AHN Consejos Juros, leg. 1733. Folio 7.

[54] AGS, Contaduría de mercedes, leg. 227. Copy of the sales act, Toledo, 2/3/1580.

[55] AMM, p. 113, Cuadro 1.

Tables

Table 1: Types of revenues

Ordinary	Share	Extraordinary	Share
Fixed contributions (*alcabalas, servicios*)	36%	Temporary contributions	5%
Taxes set by the Crown	25%	Other revenues	27%
		Silver from the Indies	7%

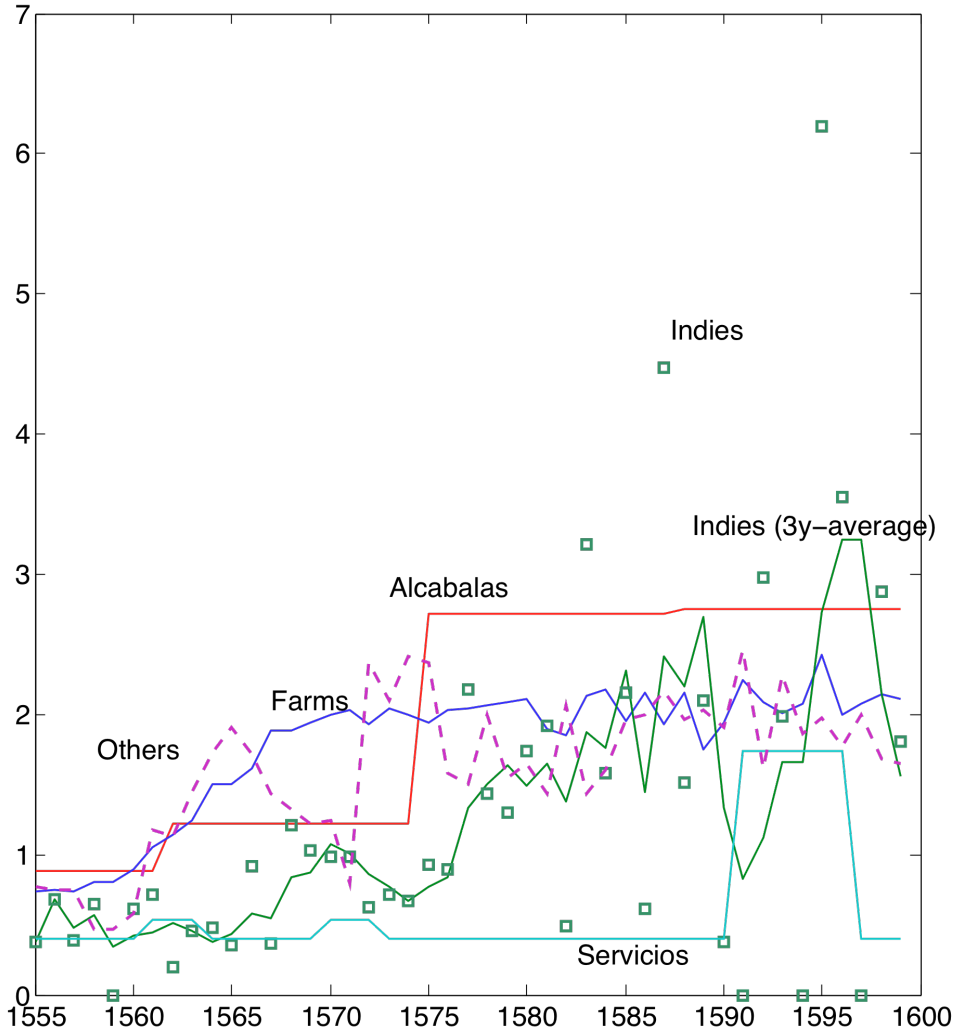
Shares of revenues varied over time and are reported as an indication for the year 1582. Negotiations in the Cortes were on the two items of the first line in the table.

Table 2: asientos issued in 1575

	Date	Banker	Ducats	Disbursement	Repayment
1	08/01/1575	Esteban Lomelin	859	Madrid (feria de octubre de 1574)	En las mismas ferias, en Sevilla, en el banco de Pedro de Morga, en la venta de villas varias, flotas de Indias de 1576, Cruzada de Indias de 1575, etc.
2	09/01/1575	Juan y Pablo Sauri	68	bastimentos y otras cosas por valor de 25.476.975 mrs	
3	09/01/1575	Lucian Centurion y Agustin Spinola	79	Madrid	en ventas de oficios, algunos en 1576
4	01/02/1575	Fucar			Flota de Indias de 1575, 76 y 77
5	02/02/1575	Bernabé Centurion	103	Italia y Madrid	Crecimiento de alcabalas
6	02/02/1575	Simon Lercaro	61	Milán	Crecimiento de alcabalas, 2 y 3 tercio de 1575
7	14/02/1575	Juan de Curiel de la Torre	536	Cartagena y Madrid (ferias de 1574)	Feria de agosto de Besançon y Chamberi
8	28/02/1575	Esteban Lercaro y Pablo Sauri	78	galeras España	Crecimiento de alcabalas en 1575
9	01/03/1575	Nicolas de Grimaldo	1.077	Flandes e Italia	Alcabalas de 1575 (1 y 2 tercio: 168.750.000 mrs) 3 tercio 112.500.000 mrs
10	02/03/1575	Nicolas de Grimaldo	222	Sicilia (Palermo o Messina)	Alcabalas de 1575, 2 y 3 tercio, la mitad en cada tercio 46.875.000 mrs
11	04/03/1575	Esteban Grillo	104	Madrid	Crecimiento de alcabalas en 1576
12	04/03/1575	Esteban Grillo	17	Flandes	Crecimiento de alcabalas en 1576
13	05/03/1575	Lorenzo Lomelín en nombre de Nicolao y Agustin Lomelin	107	4 galeras y Besançon	Alcabalas de 1576 y otras
14	14/03/1575	Esteban Grillo	133	Flandes	Crecimiento de alcabalas
15	19/03/1575	licenciado Miguel de Mena	57	Madrid (feria de octubre de 1574)	
16	19/03/1575	Alonso de Salinas, por si y en nombre de lagunos vecinos de Burgos	323	Flandes	Crecimiento de alcabalas
17	03/1575	Antonio Fucar y sobrinos	9	Alemania a don Francisco Hurtado de Mendoza, conde de Monteagudo, embajador ante el Emperador	En letras de Alemania a Madrid

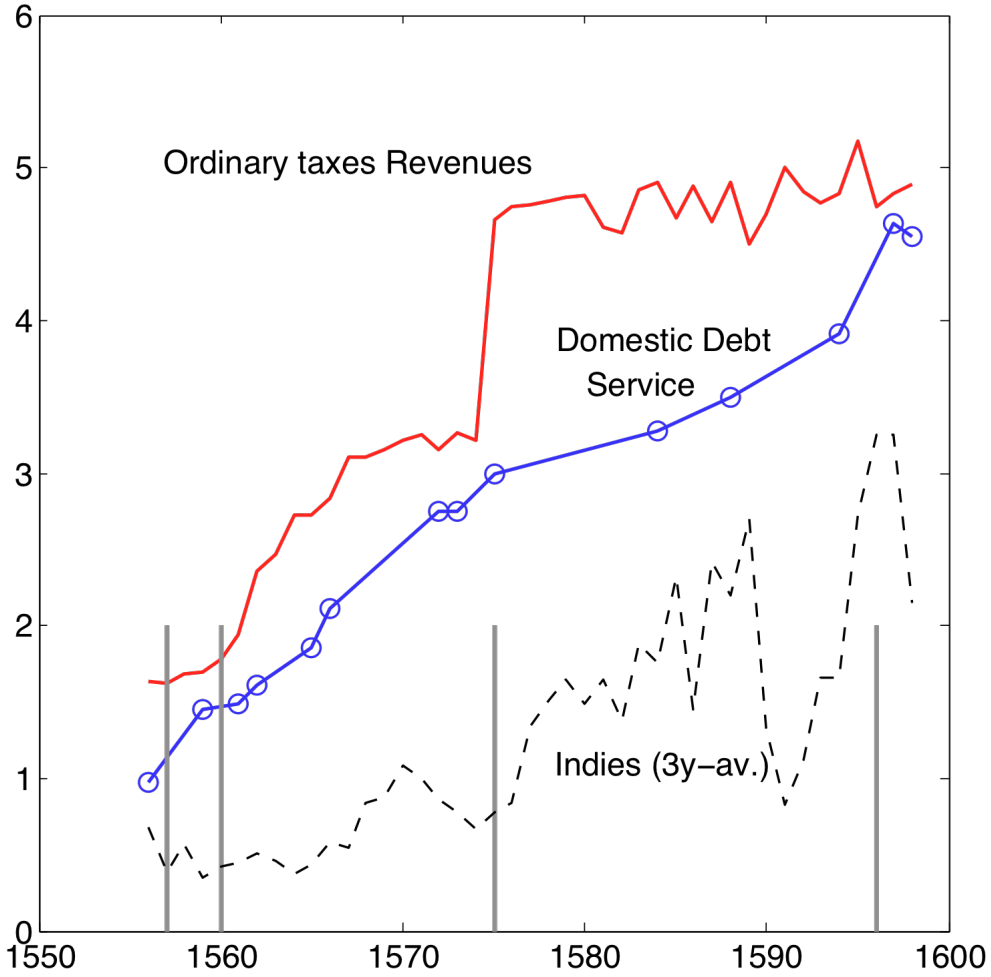
18	04/04/1575	Nicolas de Grimaldo	40	No se proveen, como se le deben se le pagan, la primera es una deuda que cobra en nombre de otros por unos sueldos de galeras	Crecimiento de alcabalas
19	11/04/1575	Juan Curiel de la Torre	212	Besançon y Madrid	Crecimiento de alcabalas en 1576
20	19/04/1575	Nicolas de Grimaldo	465	Flandes y otros banqueros Madrid	Alcabalas de 1575
21	14/05/1575	Nicolas de Grimaldo	154	Madrid (50) Génova (resto)	Distintas personas y crecimiento de alcabalas de 1576
22	25/05/1575	Esteban Lercaro y Pablo Sauri	48	galeras España	Crecimiento de alcabalas en 1576
23	14/06/1575	Esteban Lercaro	16	Madrid (feria de octubre de 1574)	Crecimiento de alcabalas en 1576
24	08/07/1575	Juan Curiel de la Torre	587	Flandes	Flota de indias, alcabalas 1576, concejos de Santiago, y se le dan 8.615.384 mrs de juros los 6 millones a 14.000 y el resto a 20.000 en las salinas para gozas desde 24/6/1575 en adelante. Si no se le hubiere pagado la mitad en octubre de 1575, podría vender los juros contándoselos a él los de 20.000 a 13.000, y los de 14 a 11. Se le dan otros 262.500 mrs de juro a 20 por resguardo y se le permite seguir conservando los juros de resguardo que aún tiene de otros asientos.
25	23/07/1575	Nicolas de Grimaldo	107	Flandes	flotas de 1575

The total of the asientos is of 5,382.455 ducats. The some asientos that specified bankers' payments in kind (galleys, mercury, with a total of about 560,000 ducats) are included.



Direct revenues from customs and monopolies are put together under "Farms". Revenues from the Indies are represented in actual numbers by points and in a 3-year moving average by a curve. The Millones are included in the servicios-for the years 1591-1596. Amounts are in million ducats (nominal).

Figure 1: Revenues



The amounts of the debt service are collected from different sources in the years that are represented by circles. The dates of the payment stops are marked by vertical lines.

Figure 2: Debt service and ordinary taxes (in million ducats)

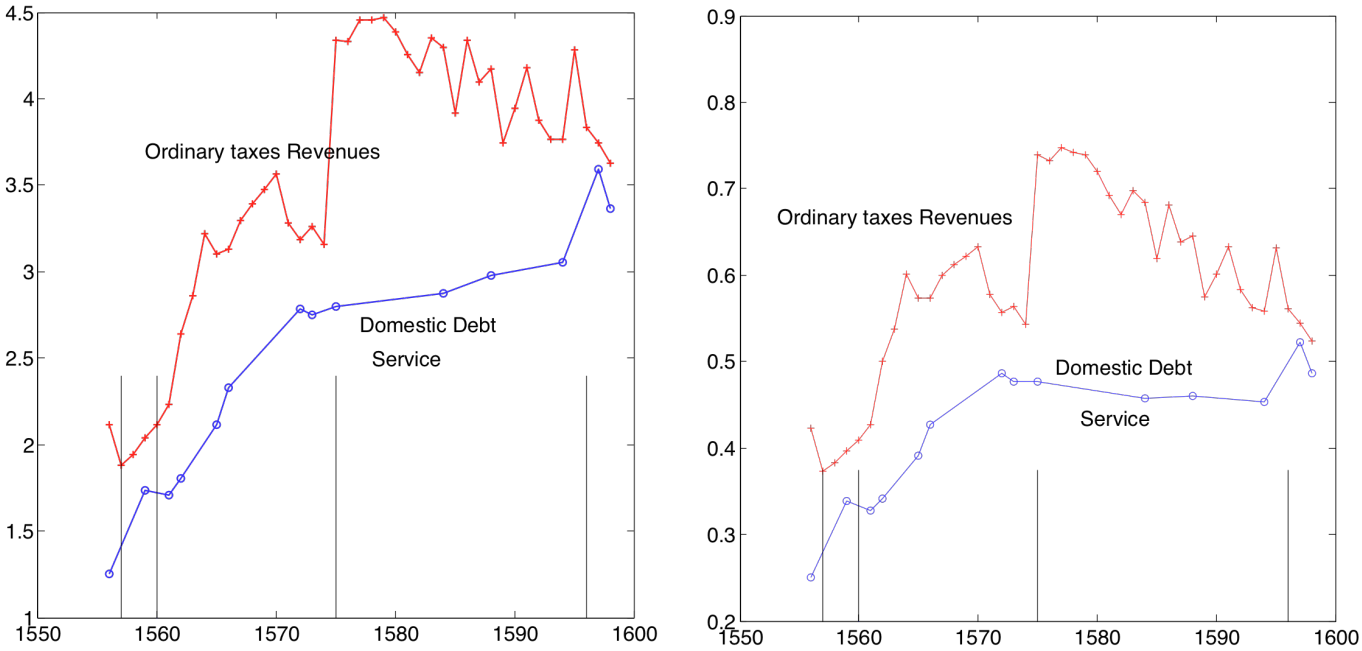
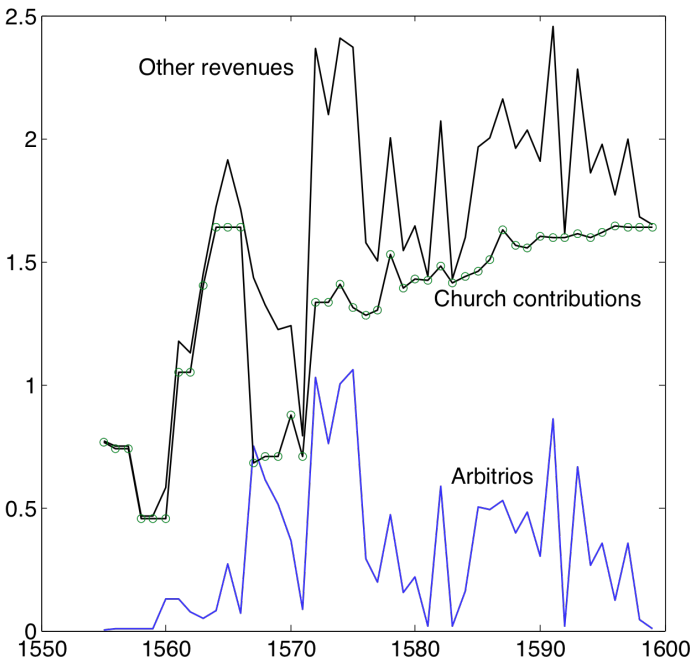


Figure 3: Debt service and ordinary taxes (deflated and per capita)



Amounts are in million ducats (nominal).

Figure 34: Other Revenues