Limited Governments, Powerful States

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1. Introduction

States with limited government present a paradox for international relations. In contrast to authoritarian states, states with limited government have obvious disadvantages (e.g., Lippmann 1955; Friedrich 1938; Morgenthau 1973). The authoritarian states' relative lack of political constraints seems to endow them with the capacity to act quickly and decisively, while liberal states can be slow to react and uncertain in their ability to adhere to announced policies. A common illustration is England's perceived failure in the 1930s to prepare for conflict, while Hitler's Germany built up its capabilities (Taylor 1961).

And, yet, recent work suggests that liberal states tend to win the wars they fight (Lake 1992). Moreover, since the late sixteenth century, liberal states have triumphed in every extended, multidecade rivalry with an authoritarian state for world power (Schultz and Weingast 1996): the Dutch successfully fought Habsburg Spain, the most powerful state in Europe, from the late sixteenth through the early seventeenth centuries; England won a series of wars over France in the eighteenth century and, after the defeat of Napoleon, emerged as the dominant state in Europe; the Anglo-French-American alliance successfully triumphed over Germany, from the late nineteenth century through World War II; and, in the latter half of the twentieth century, the United States and its allies triumphed over the Soviet Union in the Cold War. How do we explain this pattern of events? What are the sources of the advantage enjoyed by liberal states over their authoritarian counterparts?

The principal argument of this essay is that states with limited governments have a heretofore unrecognized advantage that more than compensates for their perceived liabilities in extended rivalries (Schultz and Weingast 1996). Liberal institutions constrain the discretion of the state by providing low-cost mechanisms by which citizens can monitor and punish government officials. This means that, in contrast to authoritarian states, liberal states have a greater ability to make credible commitments: the state is less likely to renege on its obligations when it is subject to sanctions for doing so.
The ability to make credible commitments conveys two critical advantages. First, it endows liberal states with the ability to provide the political foundations for secure property rights and long-term economic growth (De Long and Shleifer 1993; North 1990; North and Thomas 1973; Olson 1982; Root 1994; Weingast 1995). Ceteris paribus, limits on potential political exactions promote economic growth, providing a larger and healthier economy and increasing the total resources that can be tapped in prolonged rivalries.

Second, liberal states’ greater capacity to commit implies far greater access to credit. Institutions that permit creditors to punish the state in the event of default make loan agreements credible and thus improve the attractiveness of investments in public debt. As the “sinews of power” (Brewer 1989), access to deficit financing in times of perceived need allows liberal states to access resources far beyond their capacity to generate tax revenue (Schultz and Weingast 1996).

Although previous international relations scholars emphasized the liabilities of liberal states, they failed to recognize these states’ compensating advantages. Put simply, limited government provides a powerful asset not available to authoritarian regimes: an ability to honor its promises and hence to grant credible commitments. That, in turn, provides significant advantages in long-term international rivalry.

To learn more about the unrecognized advantage of liberal states, this essay focuses on the second advantage accorded to liberal states—the ability to finance deficits via debt during periods of heightened conflict. The advantage of debt in extended conflict is that it allows states to raise far more resources than they could through taxation alone. If two states have roughly the same resources via taxes, then the state with the greater borrowing capacity can outspend its rival, affording it a competitive advantage.

The logic of the enhanced borrowing capacity of liberal states follows from the economic theory of sovereign debt (e.g., Atkeson 1991; Bulow and Rogoff 1989; Eaton, Gersovitz, and Stiglitz 1986). The core finding of this literature is that a sovereign’s willingness to honor a loan agreement depends on whether or not creditors can impose sanctions in the event of default. If no such sanctions exist, then the sovereign cannot credibly commit to repay its debts, and lenders will be reluctant to extend any loans. If, on the other hand, significant punishments can be imposed in the case of default, then the sovereign’s commitment to repay is credible. This framework yields an important comparative statics result: any increase in the penalty lenders can impose on the sovereign should also increase the sovereign’s access to credit.

This comparative statics result provides for the role of political institutions, since these institutions create the means by which lenders can punish the sovereign. Unorganized creditors can only engage in partial credit boycotts, which, in the presence of multiple lenders, are not particularly costly to the sovereign. Institutions that can coordinate creditors’ responses to impose a complete credit boycott have considerably more effect (Weingast 1997). Liberal institutions, however, provide for greater limits on sovereign behavior by allowing the lending community to depose the sovereign in the event of default. States possessing such institutions therefore have far greater access to credit than states with less effective punishment regimes do.

To illustrate these claims, we study the financial aspects of two early rivalries between liberal and authoritarian states: the Dutch revolt against Spain in the sixteenth and seventeenth centuries and the rivalry between England and France in the eighteenth century. The evidence reveals the substantial financial advantages held by liberal states. Ceteris paribus, greater financial capabilities allowed these states to finance larger and longer wars. In both cases, deficit finance provided an important margin in victory.

This essay proceeds as follows. Section 2 presents a model of the sovereign debt problem and discusses the role of political institutions in solving it. Section 3 applies the theory to the rivalry between Spain and the Dutch Republic. Section 4 examines the Anglo-French rivalry. Our conclusions follow in section 5.

2. Political Institutions and Sovereign Debt

The central dilemma of sovereign debt concerns how loan agreements are enforced (e.g., Atkeson 1991; Bulow and Rogoff 1989; Conklin 1995; Eaton, Gersovitz, and Stiglitz 1986; Rasmusen 1992). Private loan agreements in developed economies are enforced by the courts and backed by the sanction of the state. When a private borrower obtains a loan to purchase a house, the latter typically serves as collateral so that if the buyer defaults on the loan the lender may seize the house. In contrast, when the borrower is a sovereign power, this type of arrangement is generally unavailable. If prospective creditors lack any means of imposing punishment in the case of default, then the sovereign’s loan agreements are not credible and creditors will be wary of extending loans that the sovereign cannot be forced to repay. The credibility of the sovereign’s contracts—and thus his access to credit—depends on the creation of some mechanism for punishing the sovereign in the event of default.

A Model of Sovereign Debt

To illustrate the sovereign debt problem and the role of institutions in mitigating it, we present a simple model of the debtor-creditor relationship. The model has two actors: a sovereign and a lender. We assume for now that the sovereign has some exogenously generated need to borrow a sum of money. This loan is consumed in the first period and must either be repaid or defaulted on in the
second. If the sovereign chooses to repay the loan, he must raise taxes to do so. Because there is a political cost to raising these taxes, the sovereign must decide whether to incur the costs of higher taxes or suffer whatever sanction the lender can impose for default, if any.

The lender selects the interest rate that it will charge for such a loan. Though we treat the lender in this model as a unitary agent, it in fact represents a competitive market consisting of multiple lenders, and the interest rate is determined by this market. We assume that lenders have an alternative investment for their capital that has some fixed, risk-free rate of return. Because the market for loans is competitive, the expected return on loans to the sovereign must equal this risk-free rate. We also assume that the lenders can impose a penalty, \( P \), on the sovereign for a failure to repay the loan. The exact nature and credibility of this penalty will be discussed later.

The sovereign’s finances, and hence his ability to repay the loan, depends on a number of factors, including the state of the nation’s economy and the outcome of international wars. We represent uncertainty over these outcomes by assuming that nature determines the state of the world, \( s \), after the loan is extended but before the sovereign decides whether or not to repay. There are two possible states of the world: good and bad (\( s \in \{G, B\} \)). Nature’s choice affects the political costs of raising taxes, which are greater in bad times than in good. This stylized interaction is intended to capture the uncertainty involved in lending to sovereigns engaged in international military competition.

The political costs of raising taxes are a function of the amount being raised and the state of the world, \( s \). Denote the costs associated with taxes of magnitude \( T \) as \( c(T; s) \), with \( s \in \{B, G\} \). We set \( c(0; s) = 0 \) and assume that both total costs and marginal costs increase with \( T \). Moreover, since raising taxes is harder in bad times than in good times, \( c(T; B) > c(T; G) \).

The sequence of the game is as follows. The lenders have the first move and must determine the interest rate, \( i \), they will charge for a loan of size \( D \). We leave open the possibility that lenders will refuse to extend the loan at any interest rate and assume that they have an alternative, risk-free investment that yields a return of \( r \). Nature moves next, determining the state of the world; the state is bad with probability \( q \) and good with probability \( 1 - q \). Both actors observe nature’s choice. The sovereign then chooses either to raise taxes and repay the loan or to default (and not alter taxes). If the sovereign defaults, lenders can impose the punishment of \( P \). Figure 1 depicts this interaction.

The appendix provides a formal statement and solution of this model. The following discussion summarizes the basic results.

The core finding of the model is that the sovereign’s decision on whether to repay the loan depends on the magnitude of the punishment. And, since the payoff to the lenders hinges on whether or not they will be repaid, the interest rate they charge also depends on the magnitude of the punishment. In particular, there are three kinds of sovereign behavior, depending upon the value of \( P \), each associated with a different interest rate, \( i \).

**CASE 1:** Large Punishments (\( P \geq c(D(1 + i); B) \))

For sufficiently large punishments—\( P \) large relative to the costs of raising taxes—the sovereign will repay the loan regardless of the state of the world. Because the sovereign always repays, the loan is risk-free. Thus, the lender charges the prevailing risk-free interest rate, \( r \).

**CASE 2:** Middle-Sized Punishments (\( c(D(1 + i); B) > P \geq c(D(1 + i); G) \))

For medium-sized punishments—those larger than the costs of raising taxes in good times but lower than the costs of taxes in bad times—the sovereign will repay the loan in good times but default in bad times. Because the sovereign defaults in bad times, the lenders will lose their money with some positive probability, \( q \). In equilibrium, the interest rate must adjust to compensate lenders for this
risk. The market clears at an interest rate of $i^* > r$. The sovereign must thus pay a risk premium when there is a prospect that he will default.

**Case 3: Low Punishments ($P < c(D(1 + i); G)$)**

For relatively low punishments—those less than the cost of raising taxes to repay the loan even in good times—the sovereign always defaults and is thus a poor credit risk. Given this behavior, lenders will lose money at any interest rate, so they are better off investing their capital elsewhere. This case therefore exhibits credit rationing: despite the sovereign’s demand for funds, there is no interest rate that will induce lenders to extend a loan. This holds because the sovereign’s promise to honor the loan agreement is not credible.\(^5\)

The core result of the analysis is illustrated in figure 2. As the punishment the lenders can impose increases, the interest rate that they charge decreases stepwise. The intuition behind this finding is straightforward: the harder it is to sanction the sovereign for default, the riskier are loans to the sovereign. Consequently, lenders demand a risk premium when lending to a sovereign that cannot be readily punished.

**Predictions of the Model**

The model yields a rich set of predictions.\(^6\) The first comparative statics result concerns a seeming paradox. In terms of his ability to borrow money, the sovereign benefits from an increase in the punishment that lenders can impose on him for defaulting. *The greater that penalty is, the greater is his access to loans.* For a sovereign who is credit constrained (case 3), an increase in the punishment available to lenders potentially puts him in case 2 or 1, thus providing access to loans. The reason this holds is that the boundaries between the cases depend on the relative magnitude of $P$ and $D$. Significant increases in $P$ have the potential to move the sovereign from one case to another, thus potentially increasing his credit.

A second comparative statics result concerns the size of the loan sought by the sovereign. The above results assumed that the sovereign’s demand for funds, $D$, was fixed. In reality, when states are engaged in prolonged international competition, they seek greater and greater funds in an effort to outspend their rivals. Because the definitions of the three cases depend on the relationship between $P$ and $D$, *increases in $D$ potentially make loans to the sovereign more risky.* Thus, in a competitive environment driving states to larger and larger military expenditures, sovereigns will reach the limits of their debt.

The formulas defining the cases also imply that, for a given $r$, $q$, and $P$, there are explicit debt ceilings defining the maximum debt the sovereign can borrow at interest rate $r$ and at interest rate $i^*$. These debt ceilings are an increasing function of $P$, so *the maximum the sovereign can borrow at a given interest rate increases with the punishment that can be imposed upon him.*

A final comparative statics result deals with the political costs associated with raising a given amount of taxes. *As the cost of paying off a given amount of debt decreases, the punishment needed to enforce that debt also decreases.* Declining costs of raising revenue also imply an increase in the debt ceilings.

**Punishments and Political Institutions**

Up to this point, we have left the problem of penalties on the sovereign abstract. The foregoing model raises two issues about these punishments: their magnitude and their credibility. Clearly, these are related issues, since the effectiveness of a punishment depends in part on how likely it is to be imposed. The nature of a state’s domestic political institutions can affect both factors.

There are two separate credibility problems identified by the literature on sovereign debt. The first arises because there is a community of lenders, and a default by the sovereign against one does not automatically imply that all other lenders will apply costly sanctions. Indeed, Weingast (1997) demonstrates in the context of a repeated game that the sovereign can provide sufficient incentives to induce other members of the lending community to defect from the
sanctions. Solving the lending community’s coordination problem is one factor in improving the credibility of sanctions against a sovereign.

But coordination among lenders is not the only credibility problem. The reason is that sanctions are costly for lenders to impose. Bulow and Rogoff (1989), for example, show that when the sanctions are in the form of a trade embargo, lenders cannot credibly impose the maximum feasible penalty because an embargo hurts them as well. The sovereign can generally forestall punishment by offering to renegotiate the loan, leaving lenders better off than if they were to impose the sanctions. This second credibility problem induces a search for forms of punishment that hurt the sovereign while limiting the harm imposed on the lenders.

These results suggest a partial ranking of punishments. The maximum penalty that can be credibly imposed on the sovereign when lenders have solved neither problem is \( P(0) \). When lenders have solved their coordination problem but not the second problem of minimizing harm to themselves, the maximum penalty they can impose on the sovereign is \( P(1) > P(0) \). When they have solved both problems, the maximum penalty they can impose on the sovereign is \( P(2) > P(1) \).

The ability of lenders to overcome these credibility problems depends in large part on their institutional capacity. Unorganized lenders with no means of coordinating their behavior have little credible punishment. At best, those lenders who have been harmed by a default can unilaterally withhold future loans, but in a market with multiple lenders this threat carries little weight. The marginal value to the sovereign of any one lender is low (Weingast 1997).

Lenders can impose a higher level of punishment if they possess institutions that can coordinate a full, community boycott of future loans. Such institutions must have some means of ensuring that lenders do not defect from the boycott. In general, this requires that lenders have the ability to monitor and sanction each other to ensure compliance (Greif, Milgrom, and Weingast 1994). Institutional mechanisms of this sort are evident in the Genoese-led banking cartels that the Spanish Crown relied on for short-term loans, in the corporate lending bodies formed by the French Crown during the ancien régime, and in the Bank of England.

Although such coordinating mechanisms enhance the magnitude and credibility of the lenders’ punishment, they do not overcome the second credibility problem. Because a full credit boycott harms the lenders as well as the sovereign, the sovereign can generally induce lenders to renegotiate the terms of the original loan instead of imposing the boycott (Bulow and Rogoff 1989). The prospect of getting some of the original loan back is often sufficient to forestall a permanent cutoff of funds.

Liberal political institutions provide a more effective punishment for enforcing sovereign loans because they make available a punishment of high magnitude and credibility: removal from office. Like the other authors in this volume, we assume that state leaders are primarily interested in staying in power. Although a credit boycott can make it difficult for the sovereign to carry out his desired policies, the threat of removal jeopardizes the sovereign’s core interest.

Though all sovereigns face a threat of removal, liberal institutions provide a low-cost mechanism for doing so. In contrast to the uncertainty of coups and revolutions, liberal institutions provide regular means for removing sovereigns, governments, and elected officials who violate fundamental political rules. Moreover, liberal institutions concentrate the costs of the punishment on the sovereign, rather than on the lenders, thereby helping lenders overcome the second credibility problem.

Introduction of Cases

To probe the empirical plausibility of the theory presented in this section, we analyze two military rivalries pitting a liberal against a nonliberal state: the rivalry between the Dutch Republic and Spain in the sixteenth and seventeenth centuries and the rivalry between England and France in the eighteenth century. Both cases involved prolonged competition and frequent warfare, requiring states to mobilize enormous resources over a long period of time. Moreover, they coincide temporally with the “military revolution” that greatly increased the importance of state borrowing to finance wars (Parker 1988, 1990). With the transition from feudal to professional armies, the fiscal burden of warfare exceeded the level that could be financed through taxation or forced loans. Consequently, these rivalries permit us to explore the long-term effect of domestic political institutions on a state’s ability to sustain international competition.

These cases are also particularly interesting because in both instances the liberal state appeared at the outset to be the weaker rival. According to traditional indicators of power—such as population, territory, and size of the economy—both the Dutch Republic and Great Britain were at a marked disadvantage when the rivalries began. Nevertheless, in each case, the liberal states emerged victorious. The Dutch won their independence from Spain and went on to become the dominant European power during the seventeenth century. Great Britain defeated France in a series of wars and emerged as a leading power for much of the eighteenth and nineteenth centuries. The nonliberal states, on the other hand, came out of these rivalries economically and politically exhausted. Spain lost much of its empire and would never again be considered a great power. France lost its New World colonies and plunged into revolution.

We recognize that the outcomes of century-long rivalries such as these hinge on no single factor. A large number of variables influences who wins and
loses in war. Our goal in looking at extended rivalries rather than single events is to uncover a long-term pattern: even if access to credit was not decisive in any one war, its effects may be discerned over a century of conflict.

This analysis suggests that political institutions play a key role in this respect, but we cannot exclude alternative explanations for the observed outcomes. Moreover, since much of our theory is built on the analysis of comparative statics, proper testing requires cases in which other relevant variables are held constant. We cannot claim that such controls exist in our case studies. Thus, we offer these cases more as illustrations of our theory than as proof.

3. The Dutch Revolt against Spain

In 1568, when several towns in the Netherlands rose in armed revolt against Spanish rule, the rebellious regions had a population of only 75,000; by the turn of the century, the seven provinces that formed the Dutch Republic had around one million people. The Spanish monarchy, by contrast, controlled a population of around 16 million and could draw on resources from a vast empire. And yet, when the Eighty Years’ War ended in 1648, the Dutch Republic emerged as the predominant European state, while Spain lost its status as a major power.

In all, the Dutch spent 88 of the 132 years between the beginning of the revolt and the eighteenth century engaged in wars (see table 1). Of these, it lost only one, the Anglo-Dutch war of 1652–54.

In this section, we study the institutional and financial factors helping the Dutch succeed in their unlikely triumph against Spain. At the outset, it must be conceded that many factors contributed to Dutch military success. Spain, while powerful, had a range of other military commitments. At the same time that it sought to suppress the Dutch Revolt, it was expanding its empire in the New World, repelling Turk advances in the Mediterranean, and fighting occasional wars against France and England. Geography—including the distance between Spain and the Netherlands and the unusual features of the Low Countries themselves—worked in favor of the rebellious provinces.

Nonetheless, we argue that institutions limiting the discretion of the Dutch government were necessary for the Republic’s success. The Dutch Revolt established a system of representative government that underpinned strong public finances. Because lenders’ interests were represented in government, investment in public debt was both safe and popular. As a result, the Dutch had access to seemingly inexhaustible sums of money at low interest rates. This permitted the Republic to exercise military power out of proportion to its small size and population. Spain and the other monarchies, by contrast, suffered from high interest rates and credit rationing endemic to such systems. Institutions of limited government thus gave the Dutch Republic an advantage in international competition against these states.

Political Institutions and Sovereign Debt in Spain and the Dutch Republic

The Dutch Republic

The system of public finance employed by the Dutch Republic emerged half a century before the revolt against Spain, largely at the urging of the Netherlands’ Habsburg rulers. In 1515, the ministers of Charles V convinced the estates of several provinces to assume responsibility for the collection and repayment of long-term debt. The estates were assemblies consisting of representatives of each province’s wealth holders and merchants. Thus, the Habsburgs sought to shift responsibility for public borrowing from the central government in Brussels to the local level.

The impetus for this reform came from the growing deficits caused by Spain’s recurrent wars against France and the inadequate methods the government had to finance those deficits. Until that point, the primary source of credit for the Brussels government consisted of short-term loans from bankers in Antwerp. The interest rates on these loans were quite high; though rates below 10 percent are reported on a few occasions, they were generally in the 12 to 16 percent range and often topped 20 percent (Homer 1977, 114–15). The reason that credit was so costly follows from our discussion in section 2: as Tracy (1985, 41) reports, “lenders had no confidence in the personal bond of Charles V or in any of his princely kin.” Margaret of Austria, the Habsburg regent in the Spanish Netherlands from 1506 to 1530, called these loans a “cancer” on the body politic” and thus resorted to the Antwerp exchange as little as possible (41–42).

Reorganizing state borrowing from the central to the provincial level was seen as a way out of this sovereign debt problem. Provincial estates began to sell long-term debt instruments called renten and pledged the collective re-

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sponsibility of the entire province as security. By law, this meant that if a province failed to keep up with interest payments on the renten it sold, the injured parties could recover damages by confiscating the wealth of any burgher from that province whom they encountered (Tracy 1985, 58). These reforms thus transferred control over debt repayment from an accountable sovereign to representatives of the very people who would suffer in the event of default: wealth holders and merchants. In terms of the model laid out in section 2, the punishment regime available to debt holders shifted from \( P(0) \) to \( P(2) \).

This reform had a dramatic effect on public finance. While the central government was paying double-digit interest rates on its loans, the same government, relying on the borrowing power of the provincial estates, could now raise money at a rate of only 6.25 percent (Tracy 1985, 60–62). Not surprisingly, the sale of renten became the preferred way for the government of the Netherlands to finance its deficits. Thus, the reforms of 1515 bear out the comparative static result of section 2: an increase in the punishment that debt holders can inflict increases the borrower’s access to credit.

Further reforms reinforced this change. Starting in 1542, the central government gave provincial estates the right to establish and collect new taxes on land, wealth, and commerce in order to secure renten sales (Tracy 1985, chap. 3). Up to this point, provinces repaid these loans through the ordinary taxes levied on behalf of the Brussels government. This practice, however, began to drain the revenues going to the Crown. Thus, the provinces were allowed to raise their own taxes—at whatever rates and on whatever items they chose—in order to pay the interest and principal on outstanding renten. Decisions over taxes, as well as the duty of collecting them and disbursing the revenues, fell under the jurisdiction of the provincial estates and their administrative bodies. This reform further improved the creditworthiness of the estates. The very people who had an interest in seeing the renten repaid now had the power to raise the funds to ensure that repayments could be made.

A natural outgrowth of this system was that renten purchases were popular among town magistrates and members of the "regent class" that controlled the provincial estates (Tracy 1985, chap. 5). Investments in public debt were particularly attractive to such people because they were in a position to approve the taxes and make the payments that would ensure the return on those investments. Indeed, the strength of Dutch credit can be traced to the fact that the people most able to lend money had control over the mechanisms of public finance; as Parker notes, "the chief investors ran the government" (1974, 572; see also Tracy 1985, 216–17; ’t Hart 1993, 178). Over time, as the estates gained a reputation for paying their debts, the base of people willing to buy renten greatly increased and even included citizens in the lower middle class (Tracy 1985, chap. 4; ’t Hart 1993, 220). The provinces had a remarkable ability to sell debt domestically, to a broad range of citizens, without resort to coercion (’t Hart 1993, 179).

Upon its secession from Spain, the new Dutch Republic inherited these arrangements largely intact. The new state was built on a federal structure, with an Estates-General at the union level, provincial estates at the next level, and town councils at the lowest level. Bodies at each level had the ability to raise debt, but it is interesting to note that governmental units high in the federal hierarchy had more access to credit than those above them did. The union government had little ability to borrow on its own and generally had to have its loans guaranteed by the provincial estate of Holland. Similarly, local receivers in the towns and cities generally collected more than their counterparts at the provincial level (’t Hart 1993, 165–68, 220). Consistent with our argument, wealth holders were more likely to extend loans to governmental units that were close and easy to police.

Spain

Institutional arrangements in Spain were markedly different. Spain is generally described as an absolutist state, though it is important not to overstate the Crown’s power. Like most absolute monarchs, the Spanish Crown faced important constraints, especially with respect to debt and taxes.

Significant enforcement mechanisms underpinned both short- and long-term loans to the Spanish Crown (Conklin 1995). The primary source of short-term capital was a Genoese-led banking cartel. In addition to providing short-term loans, called asientos, the cartel provided a number of exchange and transfer services, including the transport of money from the Mediterranean to the Low Countries. Indeed, asientos were crucial to financing Spain’s military campaigns since the money raised was sent directly to areas where troops were fighting in the local coin of the region (Conklin 1995, 2). Loans from the Genoese were backed by the threat of a cutoff of these services. Such a cutoff occurred following the bankruptcy of 1575, and for more than two years the Crown could not get sufficient funds to its troops fighting in the Netherlands. The ability of the cartel to impose such a boycott suggests it had the institutional capacity to overcome the problem of coordinating multiple lenders. In terms of the model described previously, the punishment regime available to them can be characterized as \( P(1) \).

Despite this, the Crown’s creditors did not have to resort to the kind of representative institutions that empowered wealth holders in the Dutch Republic. A revealing episode during the financial crisis of 1575 clearly illustrates the relative impotence of Spain’s creditors. Genoese bankers pleaded with Philip II not to repudiate his obligations to them. Unmoved, Philip went ahead with his plans to declare bankruptcy and noted that "the decree was passed without listening to them" (Lovett 1980, 910). Philip’s freedom to ignore his creditors contrasts markedly with the limitations placed on Dutch decision makers.

The Crown’s long-term debt was issued in the form of annuities, called ju-
ROS, the primary holders of which were important subjects in Castile. Conklin maintains that the implicit punishment underlying the juros arose from the “political standing” of their holders: “The Crown found it better to honor that debt than to alienate the politically powerful holders of the instruments and possibly jeopardize its reign” (1995, 3). Indeed, while the Crown frequently reneged on asientos, it made a concerted effort to honor the juros. This suggests that the enforcement mechanism underpinning these long-term instruments was more effective than that underlying the asientos, at least temporarily. Nevertheless, despite their political importance, the Castilian notables lacked institutionalized means for removing the Crown. Indeed, as we will see, even the juro was an unsafe investment by the 1630s.

Financial Consequences

Spanish political institutions placed some constraints on the discretion of the Crown but not to the extent of those in the Dutch Republic. The consequences of this difference follow logically from the theory presented previously: relative to the Dutch, Spain faced greater limits on its credit, including higher interest rates.

Spain’s financial history during this period demonstrates that the commitment technology underlying its loans was not sufficient to fund the wide-ranging demands on its treasury. Bankruptcies were a regular occurrence, with major ones taking place roughly every 20 years: 1557, 1575, 1596, 1607, 1627, 1647, 1686, and 1700. The crises were triggered when the Genoese bankers refused to extend further loans. Such a cutoff is consistent with the theory of sovereign debt: creditors impose a debt ceiling at the maximum level of debt that can be enforced. The Genoese generally cut the Crown off when arrears reached the level of one year’s royal revenue (Conklin 1995, 27). On each occasion, the Crown responded by restructuring its debt. Short-term, high-interest loans were converted into long-term, low-interest juros, in some cases with a write-down on principal as well. The conversions entailed substantial losses for the Crown’s creditors, and indeed many weaker creditors were ruined or refused to extend new loans (Conklin 1995; Thompson 1994, 160–62).

The Crown’s ability to convert its debts in this way shows that the Genoese could not overcome the second credibility problem discussed in section 2. Because a financial boycott harmed the creditors as well as the Crown, it could easily be defused by offers to renegotiate the original loan.

As predicted by our model, the danger of periodic bankruptcies led to higher interest rates on Spain’s debt. The Genoese demanded a return of 8 to 20 percent on asientos even though the opportunity cost of the funds lent was only 1.2 to 4 percent (Conklin 1995, 4). The difference in part reflects a risk premium, since creditors had to demand an interest rate “high enough to recoup, in advance, the loss which was known to be inevitable” (Lovett 1982, 2). Thus, even with the frequent bankruptcies, the Genoese enjoyed a high overall rate of return (Conklin 1995, 5).

Nevertheless, the long and costly war against the Dutch made this pattern of high interest rates and recurrent bankruptcies unsustainable. High borrowing costs created a large burden of debt service, which, together with military expenditures, forced the Crown to borrow still more. This cycle could be sustained only as long as the Spanish economy was growing and precious metal kept flowing in. When growth slowed in the early seventeenth century, the financial crises became more acute.

By the 1630s, even juros had become unreliable investments. Interest payments were made in copper, if at all (Homer 1977, 130). At that point, “the juro and suspension decrees simply became arbitrary exactions” (Thompson 1994, 164). Interest rates rose in reflection of the increased risk of lending to the Crown. Though data are not available for most of the seventeenth century, there is evidence of a short-term loan in 1673 at a rate of 40 percent and interest rates of 16 to 20 percent on juros during the 1680s (Homer 1977, 130; Thompson 1994, 164). By the end of the century, a bankrupt Spain was forced to withdraw from the center stage of European politics.

The Dutch Republic, on the other hand, underwent a financial revolution following its split from Spain. Over the next century, the Dutch became renowned and envied for their ability to raise large sums of money quickly and at low interest rates. The success of Dutch finance can be seen in figure 3, which plots the interest rates on Holland’s government bonds and the size of the province’s debt over the seventeenth century. Despite the fact that the provincial debt increased 40-fold from 1620 to 1676, interest rates declined from 3.3 to 5.3 percent at the end of the century. The two increases in rates correspond to the French invasion in 1672 and the Nine Years’ War (1688–97). However, the war with Spain (1621–48), two wars against England (1652–54, 1665–67), and a war against France (1668) witnessed no similar increases (Homer 1977, 128).

The decline in interest rates reflects both the institutional mechanisms discussed previously, which led to a high level of trust in government securities, and the Republic’s strong economic growth in this century. “With prosperous trade, there was usually more capital seeking investment than there were safe borrowers” (Homer 1977, 125). Government debt became an attractive investment precisely because it was the safest investment to be found.10

This appetite for Dutch securities gave the Republic a major advantage in wartime. Whereas most European countries funded wars through high-interest, short-term loans, the Dutch could rely on low-interest, long-term bonds. In 1664, as the second Anglo-Dutch War was approaching, a loan issue of one million florins at 3 percent was fully subscribed in just two days. Two years into the war, the leader of the Estates-General, Johan de Witt, predicted that he could
raise 20 million more at 4 percent with no problem (Barbour 1950, 81–82). By comparison, emergency loans to the English Crown during that period had interest rates ranging from 8 to 30 percent; short-term loans to the French Crown carried rates of at least 15 percent and could go as high as 50 to 60 percent; and, as we have already seen, a short-term loan to the Spanish Crown in this period bore a rate of 40 percent (Homer 1977, 126–30).

Military Consequences of Financial Strength

The Dutch Republic’s superior access to credit had direct consequences on the battlefield and in large part explains its military success over Spain and other rivals. The ability to raise large amounts of money in wartime permitted the Dutch to exercise military power out of proportion to their limited natural resources and small population.

First, the Dutch were able to field large armies despite a relatively small population. The Republic’s military manpower routinely exceeded that of other states when measured as a percentage of population. In the 1630s, for example, the Dutch population of roughly 1.5 million supported an army of 50,000—or about 3.3 percent. The Spanish monarchy, by contrast, fielded an army of 300,000 out of a population of roughly 16 million—or 1.9 percent.11 Also im-

pressive is the comparison of the Dutch Republic and France during their war in the 1670s. While the Dutch mustered an army of 110,000 men, France, with a population 10 times as great, fielded a scarcely larger force of 120,000 (Parker 1990, 96).

The Dutch were also able to finance a sizable navy. In the first half of the seventeenth century, the Republic possessed the largest navy in the world, measured in total warships (Modelski and Thompson 1988, 64–68). During the second phase of Eighty Years’ War (1621–48), the Dutch navy outnumbered Spain’s by more than two to one. Dutch dominance in this area declined only in the second half of the century, as first Britain and then France caught up.

These numbers tell only part of the story, however. The Dutch also enjoyed an advantage when it came to keeping their troops loyal and disciplined by providing steady pay. With the increasing importance of mercenary soldiers, the primary challenge facing a state was to provide sufficient funds and supplies to keep the army fighting. Poor or delinquent pay resulted in mutinies, desertion, and “movements governed not by strategic calculation but by the search for unplundered territory” (Howard 1976, 37). Governments often had only tenuous control of their troops, leading to wars that were nasty, brutish, and long.

The Dutch, however, managed to avoid these problems. As Howard observes, “there was, in western Europe, one great exception—the armies of the United Provinces; and they were exceptional for the very simple reason that they were regularly supplied and paid” (1976, 37). Although mutinies were an occasional problem in the early years of the revolt, they disappeared with the consolidation of the Republic. During the second stage of the Eighty Years’ War (1621–48) the Dutch did not suffer a single mutiny despite the growing costs of the war effort (Parker 1990, 102).

Spain’s experience was markedly different. The Crown’s finances could not keep pace with its international ambitions. Even after borrowing at high interest rates, revenues were often not enough to cover expenditures. However, rather than scale back the military effort, Spain went into arrears on its payments:

Faced with insufficient funds military expenditures were not so much reduced as ignored. . . . Budgets and appropriations were frequently drawn up to cover only two-thirds, one-half or even one-third of total requirements, and not a single year could have passed [from 1575 to 1607] in which the military budget was met in its entirety. (Thompson 1976, 73–74)

By 1607, total arrears owed to the military amounted to 4.8 million ducats, almost twice the military budget for that year (Thompson 1976, 73, 287).

In practice, military arrears meant that the troops were not being paid. It was common for soldiers to go two or three years without pay and sometimes
as much as five or six years. And even when troops forced a settlement, generally by mutinying, they rarely received full payment. The impact of this situation on military effectiveness is predictable. Units were understaffed. Troops went hungry and had insufficient clothing. Morale and discipline were poor, with soldiers sometimes leaving their posts to go begging in the streets (Thompson 1976, 74–75; Parker 1977, 232; Parker 1990, chap. 5).

The most damaging consequence, however, came in the form of recurrent mutinies. Unpaid troops would overthrow their officers, abort their campaign, and often seize a loyal town in order to hold it for ransom. This was a recurring pattern during the Dutch Revolt. Every campaign by the Spaniards drained the Treasury, but often to little avail: mutinous troops would simply abandon their conquests and allow the rebels to reclaim whatever was lost. Moreover, because mutineers took out their vengeance on loyal towns, people in these towns often resisted paying higher taxes to buy off the army that was supposed to be protecting them. This created a vicious cycle of more mutinies and further resistance to tax increases (Parker 1977, 172–73). Under these conditions, Spain simply could not continue to prosecute the war against the rebels.

Summary

Dutch success in the seventeenth century owed a great deal to its institutions of representative government and a system of public finance that placed paramount importance on the interests of potential lenders. This system brought about a financial revolution that permitted the government to raise ever greater sums of money at diminishing rates of interest. As a result, the Dutch were able to finance longer and larger wars, which their rivals, who faced considerably higher borrowing costs, could not sustain. As Parker concludes, the Republic’s innovations in government and finance “enabled the Dutch to raise an army and go on fighting, whatever the cost, until they got their own way: something no previous government had been able to do” (1990, 102).

Dutch dominance lasted until the end of the seventeenth century, when England and France replaced the Dutch Republic and Spain as the main major power rivals. As we show in the next section, the key moment in this transition occurred in 1688, when England deposed its king, enshrined the sovereignty of Parliament, and imported both a Dutch ruler, William III of Orange, and Dutch methods of public finance.

4. The Anglo-French Rivalry, 1689–1815

England’s Glorious Revolution of 1688–89 put the country at war with France, beginning a rivalry for world leadership that lasted over 125 years. These states fought six major wars and were at war more years than not during this period (69 of 126 years; see table 2). When the rivalry started in 1689, France had several obvious advantages over England: three times the population, an economy twice as large, and considerably more resources to draw on. And yet in two wars in quick succession—the Nine Years’ War (1689–97) and the War of Spanish Succession (1701–14)—England first held off France and then defeated it. In the following century, England lost only one war to France, the War of the American Revolution.

This section reports on the institutional and financial advantages that helped England surpass France. Although England’s economy was considerably smaller than France’s in 1689, its new constitutional institutions underpinned a surprising ability to raise revenue via debt, greatly expanding the scale and scope of war that England could finance. These institutions formed England’s “sinews of power” (Brewer 1989; Dickson 1967; North and Weingast 1989; Weingast 1997). Over the next century, Britain’s financial capacity seemed almost unlimited, allowing it access to more and more credit at cheaper rates, far outstripping the ability of its rival to finance wars. Indeed, by the end of the Seven Years’ War (1756–63), France was financially exhausted, had lost its New World empire, and was on the verge of bankruptcy.

Political Institutions and Sovereign Debt in England and France

England’s surprising financial capacity lies largely in its liberal political institutions and their effects on the creation of a credible, limited government (North and Weingast 1989; Weingast 1997). Early modern European sovereigns had considerable problems in honoring their debt agreements. Not only was the risk of default substantial, but sovereigns were significantly constrained in their ability to raise debt. The theory developed in section 2 provides the reason: because these sovereigns were above the law—often ruling by virtue of divine right, a stature that placed them above the limits of mere worldly courts—it

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<th>TABLE 2. Wars between Britain and France, 1689–1815</th>
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<td>War</td>
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<td>Nine Years’ War</td>
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proved difficult to impose costs on them. And, as the theory suggests, this lack of constraints curbed their access to credit. Prior to their rise as preeminent powers, both England and France faced problems with credibility and hence credit. The institutional routes taken by the two states had similar aims—to increase access to credit by “tying the king’s hands” (Root 1989)—but differential effects.

France

Significant institutional innovation occurred during the reign of Louis XIV (1661–1715), greatly increasing the Crown’s access to credit (see, e.g., Bien 1987; Hoffman 1994; Root 1989; and Rosenthal 1997). In terms of the theory developed in section 2, these innovations succeeded in part because they raised the punishment creditors could impose on the Crown in the event of default. Specifically, by fostering the coordination of lenders, these innovations improved the ability of the financial community to resist the Crown. This raised the punishment the community could inflict on the Crown in the event of default from $P(0)$ to $P(1)$.

The formation and expansion of the officers’ corps, one of the principal institutional innovations, illustrates our contention. The officers’ corps organized groups of lenders into corporate bodies that provided funds to the Crown in exchange for rights, honors, and privileges (e.g., a title, an office, and often an exemption from taxes). Corporate bodies had significant advantages in coordinating the action of lenders, raising the costs of reneging by the Crown. As our theory suggests, these institutions limited the ability of the Crown to play off subsets of financial interests one against the other. The result was substantial access to credit, as the recent work of Hoffman, Postel-Vinay, and Rosenthal (1997) on the eighteenth century reveals.

Nonetheless, France’s political institutions placed significant limits in its ability to raise revenue via debt, and we note two here. First, in contrast to England, France had no centralized representative assembly to negotiate with and counterbalance the Crown. Not only were the means of deposing the Crown limited, but the Crown retained unilateral authority over the terms of the debt. Default had obvious financial costs in terms of a potential financial boycott. Still, the Crown did not need the permission of the representatives of the bondholders to default. Nor did unilateral default by the Crown, in itself, risk the threat of the king being deposed.

Second, during the eighteenth century, the French king had considerable difficulty raising new taxes, particularly as it lost more wars. The inability to raise taxes increased the uncertainty over debt repayment, in part because of the “unpleasant monetarist arithmetic” (Sargent and Velde 1995), which required that all debt be paid by future taxes or wiped out via inflation or default. Limits on the ability to raise new taxes therefore translated into limits on the state’s ability to raise new funds.

In part, limits on taxation reflected earlier attempts to circumvent the sovereign debt problem. During the ancien régime, an important source of revenue came from the sale of offices. Because an absolute monarch could not be trusted or forced to pay back a loan, the granting of offices provided a means to ensure that lenders would receive compensation. This technique allowed the king to tap substantial funds, but it also implied a loss of control over taxation. Indeed, the sale of offices would have failed to raise substantial revenue had it been otherwise (had the king retained this power, he would have been able to renge on his promises, greatly depreciating the value of any sale).14

In sum, French political institutions ultimately limited the French Crown’s access to credit. Although these institutions solved the problem of lender coordination, they did not solve the problem studied by Bulow and Rogoff (1989), namely, that lenders must find a means of punishing sovereigns who do not impose high costs on themselves. The relatively frequent defaults—including massive ones in 1720 and during the 1790s—reflect a public financial system inadequate for the demands placed on it by the state (Hoffman 1994; Riley 1986; Sargent and Velde 1995).

England

Following the Glorious Revolution, a series of institutional changes underpinned new limits on the English sovereign. Although these changes were aimed at resolving past problems, not at enhancing the Crown’s access to debt, they had significant forward implications for public finance. In terms of the theory developed in section 2, these changes greatly enhanced the ability of lenders to impose punishments on the Crown; the latter were raised from $P(0)$ to $P(2)$. In turn, this greatly increased the government’s access to credit.

The principal issue of the Revolution concerned limits on the Crown’s power. Although the major parties to the debate disagreed about the nature of those constraints, all agreed that they should center around Parliament and parliamentary power, notably, that Parliament should retain exclusive powers over taxation; that it should gain power over the purse; and, importantly, that parliamentary laws should be sacrosanct. The latter implied that a king—and soon thereafter his ministers—would violate parliamentary laws at their peril.

Willful violation of acts of Parliament became grounds to remove the Crown. This abstract principle had direct relevance for debt. Following the Glorious Revolution, raising debt occurred through acts of Parliament. Revising the terms of debt, including default, therefore required a new act of Parliament. The Crown no longer had unilateral authority over the terms of debt and thus could not default at will. Instead, the king had to propose revisions to the Parliament, which could then approve or disapprove them. Given that violating acts of Parliament now threatened removal, the costs to the Crown of unilateral default had increased dramatically. In the context of representation centering
on wealth holders, parliamentary veto implied that, in effect, the Crown had to obtain the permission of debt holders in order to revise the terms of the debt.

In terms of our theory, it is clear why these and related institutions (such as the Bank of England; see Weingast 1997) raised the costs of default. Not only did they greatly increase the ability of lenders to coordinate, but they linked the issue of debt with parliamentary sovereignty and hence provided a large set of natural allies who sought to coordinate their behavior in order to limit the power of the Crown by defending the Parliament. Unilateral default by the sovereign created a risk of deposition, lowering the costs to lenders of punishing the Crown for reneging on agreements.

Fiscal and Military Consequences

The differences in the states’ political institutions led to marked differences in their access to credit and, hence, in the amount of resources each could mobilize in the event of war. Like the Dutch Republic in the seventeenth century, England enjoyed access to credit at low interest rates, even when the overall size of its debt became quite large. France, by contrast, paid relatively higher interest rates and had a harder time keeping its debt sustainable. As a result, England was consistently able to outspend France in wartime despite its smaller population and economy.

Figure 4 compares the interest rates paid by the two governments on long-term debt. Although the data for Britain during the eighteenth century are quite thorough, interest rate data on France are incomplete. This problem is compounded by partial default, where, on several occasions, the French government unilaterally cut interest rates on outstanding issues as a way of reducing its debt burden.

Two observations stand out. The first is the salutary effect of Britain’s political revolution on its ability to obtain cheap credit (Dickson 1967; North and Weingast 1989). Immediately following the Glorious Revolution, interest rates were high, due in part to the uncertainty surrounding the nature of the financial mechanisms, and, prior to England’s success in the Nine Years’ War, the stability of the new regime. As the parliamentary system became more entrenched, interest rates dropped dramatically. The fall in interest rates in the 1720s is especially striking given that total government debt was growing throughout this period.

The second important conclusion is that, for most of the eighteenth century, French interest rates exceeded British by about two percentage points, or over 50 percent. Like Britain, France saw a downward trend in interest rates during the early part of the century. The drop to 5 percent in 1710 was dictated by the government, but market rates of 5 to 6 percent were the norm from that point on (Homer and Sylla 1991). Still, Britain had a clear advantage, with rates remaining in the 3 to 4 percent range for most of the period. The rise in both countries’ rates in the 1740s reflects the increased demand for debt during the War of Austrian Succession. A similar rise in the early 1760s reflects the impact of the Seven Years’ War. In both instances, Britain enjoyed substantially more favorable interest rates.

This advantage meant that Britain’s debt burden was generally much lighter than France’s. In 1715, French debt was approximately 2,382 million livres, “the equivalent of over 30 years’ ordinary revenue” (Dickson and Sperling 1970, 320), while that for England was a far more manageable 37.4 million pounds, or a little over 6 times ordinary annual revenue (see Mitchell 1988, table XI–7). Because of its relatively low debt service obligations and high political costs for default, Britain did not default on its debt obligations for the first 100 years of this rivalry. France, by contrast, had three major episodes of default.

As in the Dutch case, Britain’s superior access to credit permitted it to mobilize resources out of proportion to its size and population. Figure 5 compares
military spending in Britain and France for the period 1689 to 1790. Limitations of the data aside, this figure indicates that Britain was able to raise tremendous amounts of money in wartime, despite a lower national income and smaller population. This pattern is especially noteworthy when we consider that at the beginning of this period England’s ordinary annual revenue was only one-fifth of France’s (Dickson and Sperling 1970, 285). In the average war year, Britain’s military spending amounted to 1 to 1.5 years’ worth of revenue; in France, the comparable figure was only 0.5 to 0.8. This difference was especially striking during the Seven Years’ War, in which France lost all of its North American colonies. The war brought France to the brink of bankruptcy, and yet Britain still outspent France by 40 percent (Sargent and Velde 1995, 489).

Finally, we observe that Britain’s huge borrowing capacity allowed it to finance wars via “tax smoothing,” a technique economists have shown to be optimal (Barro 1979; Lucas and Stokey 1983). States have two choices for raising revenues in the face of huge increases in war expenditures. They can raise taxes or they can borrow the needed funds. Raising taxes imposes several sources of burdens on the economy relative to borrowing. First, there is considerable uncertainty over the future path of taxes. Second, taxes are very high in some years, implying excessive dead-weight losses. Economists have shown that the total tax burden is less when taxes are smooth, allowing rises in expenditures to be financed via borrowing. In brief, the pattern of expenditures demonstrates that England was able to resort to deficit finance throughout this period while France was not (Sargent and Velde 1995; Schultz and Weingast 1996).

In short, Britain’s surprisingly powerful financial capacity helped provide a competitive advantage over its rival. Moreover, Britain’s financial advantage was not lost on its contemporaries. In 1781, during the War of the American Revolution, French finance minister Jacques Necker lamented that “England still today can find 300 millions to borrow at 3 per cent each year, and exerts amounts of efforts and power out of proportion with its wealth and population” (quoted in Sargent and Velde 1995, 489).

Summary

The financial aspects of the eighteenth-century Anglo-French rivalry provides a significant contrast. England developed the funded debt, increasing its access to credit with each new war. At the same time, interest rates fell to a relatively low rate of 3 percent. The English system also allowed the benefits of tax smoothing. The consequence was a more efficient and predictable system of public finance. In contrast, France faced considerably higher rates of borrowing. Far less tax smoothing took place than in England, and the state’s numerous defaults reflected a system taxing its limits to tap the funds of private capital holders.

The end results of the Anglo-French competition are clear, especially after the mid-eighteenth century. With the defeat of Napoleon, France ceased to be a serious military threat to England, and its influence over the continent of Europe diminished considerably. England, in contrast, emerged as the most powerful state in the world. Although finances were not the sole reason for the French defeat, superior access to credit allowed England to finance larger and longer wars, forcing France into financial turmoil and ultimately revolution.

5. Conclusions

The essays in this book reflect a growing critique of neorealism’s treatment of states as unitary actors differentiated only by their position in the systemic distribution of power (e.g., Waltz 1979). The central premise of this critique is that states are led by strategic actors whose responses to the international environment depend greatly on the structure of domestic political institutions. Because institutions shape the incentives of domestic actors, institutional variation can generate variation in the way states react to a given circumstance. This reason-
ing implies that neorealism’s exclusive emphasis on state power is at best incomplete: differences in political institutions can cause two states of identical power to behave differently.

We take this analysis one step further by arguing that domestic political institutions can also have a systematic effect on states’ power. In particular, we show that institutions that impose limits on the discretion of government greatly increase the resources that a state can bring to bear in international competition. We contend that a principal—and heretofore unrecognized—advantage of states with limited government is the ability to make credible commitments. In terms of economics, this allows them to foster larger and healthier economies; in terms of finance, this allows them access to more credit. Focusing on the latter issue, we showed how the institutions of limited government, by allowing lenders to punish the state in the event of default, vastly improved these states’ ability to borrow. Thus, states that possess these institutions enjoy an advantage when in competition with states that do not.

As such, our argument does not directly contradict realism’s logic. Realists take the distribution of power to be exogenous and make little attempt to explain why some states do better than others in international competition. Rather, this analysis criticizes realism’s scope: by ignoring the determinants of state power, realists cannot explain the outcomes of major international rivalries such as those examined here or, for that matter, the Cold War (Gaddis 1992).

We applied our approach to two cases of multidecade contests in early modern Europe: the Dutch Revolt against Spain and the 125-year Anglo-French rivalry that began with the Glorious Revolution of 1689. In both cases, debt finance helped a state with limited government out-compete an authoritarian regime. The advantage held by states with limited government is evident in later periods as well. As we show elsewhere (Schultz and Weingast 1996), although the Cold War rivalry between the United States and the Soviet Union exhibits significant differences from the contests studied here, there are also striking parallels. Moreover, Kugler and Domke (1986) show a similar effect during World War II. Although their focus is less institutional, they emphasize the importance of a state’s ability to mobilize social resources in its war effort.

This argument helps us to address the paradox noted at the outset, namely, that states with limited government have often been held by international relations theorists to be weak in comparison with their authoritarian rivals. And yet they seem to succeed in international competition. We argue that limited government itself—and the attendant ability to make credible commitments—provides this advantage, one difficult to attain as efficiently by authoritarian regimes.

This conclusion suggests that state leaders engaged in military competition face a trade-off between international power and domestic autonomy. The advantages of limited government stem precisely from the fact that liberal in-

stitutions constrain state leaders and facilitate their removal from office. The fact that political leaders rarely tie their own hands in order to enjoy these advantages suggests that the quest for office and its perks often outweighs the quest for international power. It is here that our argument offers it most fundamental contradiction of realism.

APPENDIX: A MODEL OF SOVEREIGN DEBT WITH UNCERTAINTY

In this appendix, we provide a formal solution for the model presented in section 2, along with its comparative statics results.

We assume that the sovereign seeks to borrow a sum D and that the lender selects the market-clearing interest rate, i. Let r be the risk-free rate of return on the lender’s capital. The value of the sum to the sovereign is v(D).

We represent uncertainty over the sovereign’s finances by assuming that nature determines the state of the world, s, after the loan is extended but before the sovereign decides whether or not to repay. There are two possible states of the world: good and bad (s ∈ {G,B}). Nature’s choice affects the political costs of raising taxes, which are greater in bad times than in good.

Sequence of the game. The lenders have the first move and must determine the interest rate they will charge for a loan of size D (see fig. 1). Lenders may refuse to extend a loan. Nature moves next, determining the state of the world: the state is bad with probability q and good with probability 1 − q. Both actors observe nature’s choice. The sovereign then chooses either to raise taxes and repay the loan or to default (and not alter taxes). If the sovereign defaults, the lenders can impose a penalty, P.

Payoffs. The political costs of raising taxes are a function of the amount being raised and the state of the world, s. The political costs of raising T taxes are c(T,s), with s ∈ {B,G}. We set c(0,s) = 0 and assume that:

\[
\frac{\partial c(T,s)}{\partial T} > 0 \quad \text{and} \quad \frac{\partial^2 c(T,s)}{\partial T^2} > 0,
\]

meaning that both total costs and marginal costs increase with T. Raising taxes is harder in bad times than in good times: ∀ T, c(T,B) > c(T,G) and:

\[
\frac{\partial c(T,B)}{\partial T} > \frac{\partial c(T,G)}{\partial T}
\]

The lenders receive id if the sovereign repays the loan and −D if he does not. The sovereign receives v(D) − c(D(1 + i);s) if he chooses to repay the loan and V(D) − P if he defaults and the lenders impose the punishment. Notice that the
sovereign's payoffs depend on the state of the world, while the lender's payoffs do not.

Equilibrium. We solve this model through backward induction. Assume that the lender imposes the punishment if and only if the sovereign defaults. The nature and credibility of this punishment is discussed in section 2. The sovereign will choose to repay the debt if and only if the penalty for default is greater than or equal to the costs of raising taxes.

Given an interest rate of $i$, the sovereign must raise $D(1+i)$ to pay back the debt. Consequently, the sovereign will repay the loan in state $s$ if and only if

$$P \geq c(D(1+i); s).$$

Because $c(D(1+i); B) > c(D(1+i); G)$, condition 3 implies that there are three kinds of sovereign behavior, depending upon the magnitude of $P$. For each case, we also determine what interest rate the lender will demand ex ante. The market clears when the expected payoff for the lender equals the risk-free payoffs the lender could get through alternative investments.

CASE 1: $P \geq c(D(1+i); B)$

For sufficiently large punishments—$P$ large relative to the costs of raising taxes—the inequality implies that the sovereign will repay the loan regardless of the state of the world. Because the sovereign always repays, the loan is risk free. Thus, the lender charges the prevailing risk-free interest rate, $r$.

CASE 2: $c(D(1+i); B) > P \geq c(D(1+i); G)$

For medium-sized punishments—those larger than the costs of taxes in good times but lower than the costs of taxes in bad times—the sovereign will repay the loan in good times but default in bad times. Competition among lenders implies that the interest rate that clears the market, $i^*$, equates the lender's expected payoff with its risk-free payoff, $D(1+r)$. Setting

$$q0 + (1-q)D(1+i^*) = D(1+r),$$

we find that

$$i^* = \frac{r + q}{1-q}.$$  \hfill (4)

Notice that, because $q < 1$, $i^*$ always exceeds $r$. Equation 4 thus implies that the sovereign must pay a risk premium when there is a prospect that he will default.

CASE 3: $P < c(D(1+i); G)$

For relatively low punishments—less than the cost of raising taxes to repay the loan even in good times—the sovereign always defaults and is thus a poor credit risk. Given this sovereign behavior, lenders will lose money at any interest rate, so they do not lend money to the sovereign. This case therefore exhibits credit rationing.

Because the boundaries between the cases are a function of the interest rate charged, we can state them in terms of $r$ and $i^*$. Let

$$P^* = c(D(1+i^*); G)$$ \hfill (5)

and

$$P^r = c(D(1+r); B).$$ \hfill (6)

Notice that our assumptions about the cost function do not determine which of these cutoffs is higher. It might be that costs of repaying the high-interest loan in good times are less than the costs of repaying the low-interest loan in bad times, or vice versa. Nevertheless, we can make the following propositions. If $P < \min[P^*(D), P^r(D)]$, then the lenders will not extend the loan, $D$, at any interest rate, since the expected return is insufficient. If $P^* < P^r$ and $P$ falls between them, then the lenders will charge an interest rate of $i^*$, since they will be repaid in good times at this interest rate. If $P \geq P^r$, then the lenders will charge an interest rate of $r$, since they will always be repaid.

The core result of the analysis is illustrated in figure 2, which depicts the case in which $P^* < P^r$. As the punishment the lenders can impose increases, the interest rate that they charge decreases stepwise: the harder it is to sanction the sovereign for default, the riskier are such loans.

These results yield a seeming paradox. In terms of his ability to borrow money, the sovereign benefits from an increase in the punishment that lenders can impose on him for defaulting. The greater that penalty, the greater his access to loans.

Comparative statics. This approach also yields some interesting comparative statics that show what happens when the amount of money the sovereign seeks to borrow, $D$, increases. Notice from equations 5 and 6 that both cutoff points, $P^*$ and $P^r$, are a function of $D$. From our assumptions about the cost
function, we can specify how these cutoffs move if $D$ changes. First, because $c$ is an increasing function of the tax increase, it is clear that $\frac{\partial P^*}{\partial D} > 0$ and $\frac{\partial P^*}{\partial D} > 0$. Moreover, since $c$ increases faster in bad times than in good, $\frac{\partial P^*}{\partial D} > \frac{\partial P^*}{\partial D}$. Thus, increases in $D$ move the cutoffs higher and drive $P^*$ and $P^*$ further apart. For a fixed $P^*$, the costs of borrowing increase as the magnitude of the loan increases. Further, the higher the level of debt sought, the larger is the range of credit rationing.

The model also implies that the sovereign’s debt ceilings are a function of $P$. To determine this relationship, we assume that the cost function described above, $c(T; s)$, is invertible. Let $\tau(c; s)$ be the tax increase that generates costs $c$ when the state of the economy is $s$. The function $\tau$ is increasing in $c$; further, for all $c$, $\tau(c; G) > \tau(c; B)$.

The sovereign will repay debt at all times at interest rate $r$ if $P \geq c(D(1 + r); B)$. We can solve for the maximum debt at this rate that the sovereign will always repay by finding the value of $D$ that makes the two sides of the expression equal. Following our earlier notation, we will call this cut point $D^r$. Invert $c$, we find:

$$D^r = \frac{\tau(P; B)}{1 + r}.$$  \hspace{1cm} (7)

Any level of debt in the interval $[0, D^r]$ and with an interest rate of $r$ will always be repaid. $D^r$ thus represents the maximum the sovereign can borrow at the low, risk-free interest rate.

The sovereign can secure more debt only by accepting the higher interest rate, $i^*$. This is due to the fact that higher levels of debt are subject to default in bad times. As before, we determine this debt ceiling by noting that the sovereign will repay debt at the high interest rate in good times when $P \geq c(D(1 + i^*); G)$. Let $D^*$ be the value of $D$ such that the two sides of this expression are equal. We solve for $D^*$ by inverting:

$$D^* = \frac{\tau(P; G)}{1 + i^*}.$$ \hspace{1cm} (8)

As with earlier cutoff points, there is no guarantee that $D^* > D^r$. If $D^* < D^r$, then the sovereign can only borrow at the low interest rate to a maximum of $D^r$. If $D^* > D^r$, then $D^*$ represents the maximum amount the sovereign can borrow at any interest rate. Loans in the interval $[D^r, D^*]$ carry the high interest rate, $i^*$.

We now derive the effect on these debt ceilings of changes in $P$. From expressions 7 and 8, it is clear that $D^*$ and $D^r$ are both increasing functions of $P$. Thus, as the punishment that lenders can impose increases, the amount of credit available to the sovereign increases.

A final set of comparative statics arises from the political costs associated with raising a given amount of taxes. As the cost of paying off a given amount of debt decreases, the punishment needed to enforce that debt also decreases. Thus, the cutoffs $P^*$ and $P^*$ decrease as the cost function shifts downward. At the same time, the debt ceilings represented by $D^*$ and $D^r$ increase.

NOTES

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1. Elsewhere we show similar results for the more recent rivalry between the United States and the Soviet Union (Schultz and Weingast 1996).
2. A formal specification of the cost terms is provided in the appendix.
3. This is a standard result in the literature on sovereign debt (see, e.g., Bulow and Rogoff 1989 and Eaton, Gersovitz, and Stiglitz 1986).
4. The appendix provides a specific formula for the relationship between $q, r$, and $i^*$.
5. This result is standard in the literature on sovereign debt. See, for example, Bulow and Rogoff 1989; Eaton, Gersovitz, and Stiglitz 1986; and Rasmusen 1992.
6. Each of the three comparative statics results is derived formally in the appendix.
7. As Parker (1990, 100) notes, “no government could pay for a prolonged war out of current taxation: the income which sufficed for a peacetime establishment could in no way prove equal to the unpredictable but inevitably heavy expenses of a major campaign. The state therefore had to spread the costs of each war over a number of peaceful years, either by saving up in anticipation ... or by spending in advance the income of future years with the aid of loans from bankers and merchants.” For a discussion of the limitations of forced loans, see Tracy 1985, 9.
8. To be sure, these provincial estates were not representative in the democratic sense of being subject to electoral approval, but members were chosen from the class of wealth holders and merchants, and they considered this class to be their primary constituency (Parker 1977, 246–47).
9. Though they refer only to Holland, these figures reflect the creditworthiness of the entire state because the central government did most of its borrowing through Holland. At the end of the Eighty Years’ War in 1648, Holland’s debt stood at around 140 million guilders, while the debt of the union government was only 10 million (‘t Hart 1993, 164–67). Clearly, the war was largely funded through provincial debt.
10. From the limited data available, it appears that comparable long-term interest rates in other countries were considerably higher (Homer 1977, 126–30). France sold rentes on and off during the seventeenth century, usually at an interest rate of 8.3 percent; the best rate achieved in this period was around 5 percent in 1679. England introduced long-term public debt in the last decade of the century at rates of 8 to 14 percent, when Holland was paying only 3 percent.
11. For manpower figures, see Parker 1990, 96. For population figures, see Wilson
and Parker 1977, 1, 37, 64, 81. Population figures for the Spanish monarchy include estimates for Portugal, Spanish Italy, and the Spanish Netherlands in addition to Spain proper; see also Straubling 1981, 33.

12. This section summarizes Schultz and Weingast 1996.


14. Although the sale of offices was less prevalent during the eighteenth century, the obligations inherited from the past remained and played a significant role in the Crown’s inability to pay off loans with new taxes (Sargent and Velde 1995, 483). Indeed, they constituted an important source of “privilege” excoriated during the French Revolution.

15. In addition to those limitations just noted, several additional ones could be mentioned. For example, the French actively obfuscated its total indebtedness; the Crown did not know the full extent of its obligations, raising considerable uncertainty about prospects for payment. Second, on several occasions the French decided against creating a parallel to the Bank of England.

16. As Brewer (1989) emphasizes, the English reforms were accompanied by the development of an efficient tax administration largely above corruption and politics. This contrasts strikingly with France.

17. Britain went off the gold standard during the Napoleonic campaigns, allowing some inflation.

18. These data should be read with caution because data on military spending have important limitations (see Schultz and Weingast 1996 for details).

19. This aspect of the Anglo-French rivalry is discussed at greater length in Schultz and Weingast 1996.

20. Indeed, a number of French officials, including Finance Minister Jacques Necker, understood that liberalizing reforms would be necessary to compete with England (Sargent and Velde 1995). The rejection of Necker’s argument suggests that the French monarch placed a high value on his domestic autonomy.

21. This result parallels that of Eaton, Gersovitz, and Stiglitz (1986). Notice also that when case 3 applies, the formulas defining the cases also imply that there are loans smaller than D, which lenders will lend at i*.

22. If P* > P and P falls within this interval, then the lenders are indifferent between the two interest rates, r and i*. In the first case, they will always be repaid; in the second case, they will be repaid only in good times. In a competitive market, the sovereign should always be able to find lenders willing to offer the lower rate.

REFERENCES


