War and Foreign Debt Settlement in Early Republican Spanish America*

(Preliminary Draft. Please do not quote without permission)

Rich Sicotte
Department of Economics
University of Vermont
Richard.Sicotte@uvm.edu

Catalina Vizcarra
Department of Economics
University of Vermont
Catalina.Vizcarra@uvm.edu

June 2007

* Prepared for the 11th Conference of the International Society for New Institutional Economics Conference, Reykjavik Iceland, 2007.

Introduction

A comparative advantage of the New Institutional Economics is that it is well suited for analyzing questions from an interdisciplinary perspective. One of the strands of research that falls into this category is the investigation of the relationship between institutions, political order and economic development. In the study of Latin American economic history, this meta-question has risen to the fore. Using what historical economic data exist, a number of scholars, led by John Coatsworth (1998, 2006) and Stephen Haber (1997), conclude that the 19th century, in particular the early independence period, is when Latin America "fell behind" the rapidly growing countries in Western Europe and North America. Political historians, in considering this same period in Latin American history, unfailingly note the prevalence of uprisings and civil wars. Scholars also point out the institutional weaknesses of the new republics. Formal institutions, including constitutions and other vital legal institutions that define and defend property rights and contracts, were often unstable, ignored, or absent (Dye, 2006). Society was fractured, leading to widely divergent beliefs about what form the state should take, and what constituted a legitimate system of individual and property rights. The unhappy picture that emerges is that this triad of institutions, peace and economic progress was not in good shape.

It took decades for Latin America to emerge from this period into a somewhat brighter one. Can we identify the mechanisms by which this condition perpetuated itself? Can we identify the factors that ended it, or at least made it somewhat better? Much research has focused on the military and political conflict of the caudillo period, and a number of plausible theories have been put forth, including ideological divisions between liberals and conservatives, social tensions as an outgrowth of economic and political inequality, and the political vacuum created by the end of Spanish colonial rule.[1] One of the hypotheses that has gained force more recently has focused on the relationship between war, the fiscal condition of the central government, and the creation of stable institutions. Grafe and Irigoin (2006) maintain that the fiscal fragmentation resulting from the fall of the Spanish Empire was an important source of inter-regional disputes. North, Summerhill and Weingast (2000) note that the independence wars and civil wars left the economy in ruins and the government highly indebted. Fiscal weakness, like a weak immune system, made governments susceptible to outbreaks of internal rebellion. Because "political survival depended on financial survival," these effects of the wars thus meant that the victors were even more likely to violate property rights, incite further rebellion, and so on. In other words, there was a vicious cycle of war and debt.[2]

In this paper, we evaluate this argument through an examination of the political economy of sovereign debt settlements in early republican Spanish America. Many of the new countries that were established out of Spanish colonies had contracted substantial foreign loans during their struggle for independence (Dawson, 1990; Marichal, 1989; Neal, 1998). By 1827, each had defaulted. Yet it took years, even decades, for these countries to re-schedule these debts. The parallels between the lengthy period of default and the "lost decades" of political disorder and economic decline are tantalizing. How

[1] For a recent survey, see Safford (2000). See Engerman and Sokoloff (1997, 2005) for their studies of inequality. See Grafe and Irigoin (2006), Irigoin (2006), and Prados de la Escosura (2006) for arguments that emphasize the economic consequences of independence.

[2] For North, Summerhill and Weingast, belief systems are primal. They argue that deeply-seated disagreements within the Latin American the nature of the state and the citizenry meant that war and debt could not work together to form a virtuous cycle leading to political consolidation and the rise of financial capitalism. See also North and Weingast (1989), Neal (1991), and Weingast (1997).

are the two related? Did foreign debt contribute to political violence? Did violence contribute to default?

The paper is organized as follows. We construct a new and improved database on the external debt service histories of Spanish American countries from 1830-1870. We compare these series with our own database of wars, which augments the Gleditsch (2004) revision of the Correlates of War project (Singer and Small, 1994). Note that all the countries begin the period of our study in default. Motivated by the hypothesized link between war and debt, we seek to answer three specific questions. Did countries settle their external debts and maintain debt service during peacetime? Not all re-scheduling agreements succeeded. Did the unsuccessful ones coincide temporally with the outbreak of violent conflict? These first two questions are motivated by the search for a causal relationship from war to debt settlement. Debt settlement often follows an interval of relative tranquility, and failure to maintain debt service after re-scheduling is often associated with another war. The third question we examine is whether countries maintaining debt service were less likely to engage in war after settlement. Here the evidence is less clear-cut.

In order to understand the link between war, debt service and the fiscal condition of the state more precisely, we proceed to examine the Treasury accounts of the independent countries. We see that wars often lead to large budget deficits, because of decreased government revenues and because of increased expenditures. These deficits were financed in the main through (largely domestic) borrowing. Governments gave priority to maintaining this line of emergency credit, rather than to try to get back in the good graces of the bondholders. The bigger the war, the greater the demands on these emergency lines of credit, and it was not unusual for the relatively weak accounting systems to become overwhelmed by the exigencies of war finance on-the-fly. Treasury reports were simply not printed or were printed with incomplete data. It could take years to recover financial footing, thus explaining the gap between the end of war and debt re-scheduling. Because the Treasury data are missing at some vital junctures, we present additional evidence from the London Stock Exchange that shows how investors perceived the implications of wars for bond returns. These data confirm the strong negative financial impact of the wars where Treasury Accounts are missing. Moreover, they suggest that, for some countries, international wars - not internal wars - seem to have had the most significant effects. At least for some countries, a greater threat to fiscal solvency may have been posed by foreign intervention.

Loans, Defaults, and Settlements

Beginning in 1822, the new countries of Spanish America contracted loans with major financial firms in London to achieve and consolidate their independence, and to finance the new states and militaries.[3] Table 1 gives some of the basic details of these loans. The amounts varied from one million pounds each to Buenos Aires and Chile, to 6.75 million and 6.4 million pounds to Gran Colombia and Mexico, respectively. Armies from Gran Colombia and the southern cone were critical in the liberation of Peru, and as a consequence Peru acknowledged responsibility for a portion of these other countries' debts.[4]

---

[3] Central America, which also took out loans in the 1820s, is omitted from this study.
[4] An analysis of the degree to which the new countries were "fleeced" by savvy London bankers is beyond the scope of this paper (see Dawson and Marichal). For our purpose it is sufficient to note that the countries began nationhood encumbered with foreign debt.

Default came quickly, with Peru the first to miss payment in April 1826 and Buenos Aires the last to join the ranks in January 1828. The literature attributes the defaults to several factors, including continuing war, and a severe commercial crisis with intercontinental dimensions (Dawson, 1990; Marichal, 1989; Neal, 1998). In many cases, default was averted temporarily because a portion of the loan proceeds had been held back in London to cover the first few dividend payments. Just prior to and in the period immediately following the initial default, several of the countries directed their diplomats in London and Paris to try to contract new foreign loans to cover dividend payments on the original loans. In at least one case, potential creditors offered terms that were refused.[5]

The re-scheduling history of the countries is assembled in Table 2. We believe this to be the most complete and accurate compilation to date of the re-scheduling agreements and debt servicing histories of these countries. The table shows the defaulted principal and interest at the time of re-scheduling. A major problem resulting from default is the accumulation of interest arrears. This became a major issue for the Latin American countries because of the length of time that they were in default. Re-scheduling packages often included retiring old bonds, and issuing two classes of new bonds - one for the defaulted principal and one for the interest arrears. There was a (sometimes temporary) reduction in the interest rate on the original principal, and deferred scheduling of payment on the interest arrears (e.g., Mexico, Peru, Venezuela, New Granada).[6] Often there were formulae for increasing interest rates incrementally,

---

[5] Dawson, pp. 132, 155. Dawson refers to an offer in Paris to loan to Peru at a 40% discount.
[6] In the special case of Mexico in 1850 the agreement was tied to a one-time payment by Mexico of nearly 900,000 pounds sterling, more than half of which came from an indemnity paid to Mexico by the U.S. government after it took California (Bazant 1968, Tenenbaum, 1995).

presumably reflecting a belief in a gradual improvement in government finances over time. When old bonds were not retired, as in Buenos Aires and Chile, new bonds were also issued for the interest arrears. By the time of re-scheduling, it was not uncommon for the foreign debt to have increased dramatically in size because of the capitalization of interest arrears.

The agreements typically stipulated that a portion of customs revenues was earmarked for the debt service. In the case of Ecuador, the unusual step was taken that tied a specific amount of customs receipts to the debt service. In Peru, revenues from the government's sale of guano "guaranteed" payment rather than customs. The special hypothecation of customs revenues did not ensure service, however. This was sometimes due to government seizure, and other times because the government had earmarked more than one hundred percent of customs, because other creditors also had liens. In New Granada's 1861 agreement, a penalty provision was included so that if four consecutive coupon payments were missed, the interest rate of two percent would revert to the interest rate on the original Colombian debt, which was six percent.

Because we are interested in the durability of the settlements, we need to be careful about how precisely to define subsequent default (de Paiva Abreu, 2006). The default dates listed on Table 2 are based on a strict definition – the first missed coupon payment. Sometimes countries, however, were late and continued to make payments, although in arrears. Ecuador missed coupon payments in 1859 and 1860, but it resumed service on its debt until 1869. During the period 1860-1869 it was always two or more coupon payments behind. Other countries that missed payments paid bondholders in kind through the issue of customs certificates or additional bonds capitalizing the interest arrears. For this reason, in some cases we include a second date in italics that represents the definitive date at which such payments stopped. When we compare the incidence of war to debt service, we will be sensitive to both dates.

Finally, special mention must be made about the case of Gran Colombia. The country ceased to exist around 1830, and its debt was partitioned between Ecuador, New Granada and Venezuela after these countries were created. However, it was only in 1834 that the formula for the partition of the debt was negotiated by New Granada and Venezuela, representatives of Ecuador not being in attendance. It was only in 1838 when the governments of all three countries formally recognized the debt according to this agreement. New Granada, present-day Colombia, assumed 50% of the debt and arrears, Venezuela 28.5%, and Ecuador 21.5%. Venezuela was the first of the three to re-schedule its debt in 1840, New Granada followed in 1845 and Ecuador in 1855. None kept their original re-scheduling arrangement all the way to 1870.[7] Clearly one of the reasons for the delay in re-scheduling was the dissolution of Gran Colombia and the necessity of negotiating an agreement for dividing its debts among successor states.

If one arbitrarily defines "successful" re-scheduling as one that lasted at least ten years, then only Chile, Peru, New Granada (1861), and Buenos Aires qualify. Chile settled in 1842 and maintained an excellent reputation as a good debtor for most of the rest of the century. Peru followed in 1849, and serviced its foreign debt faithfully until 1876. Buenos Aires settled its debt in 1857, and became part of Argentina, one of the biggest borrowers of the late 19th century until the Baring Crisis.

---

[7] See Liehr (1989) for a study of the Gran Colombia debt, with an emphasis on the 1820s. Also see Memoria de la Hacienda de Venezuela (1838-1840), Memoria de la Hacienda de Nueva Granada (1838-1840), and Teran (1896).

Wars and Debt Service

After gaining independence through successful revolutions, most of Spain's former colonies suffered through decades of warfare. In some cases, the record of conflict is almost incessant. But there were qualitative and quantitative differences between the different conflicts that we can exploit. Because we are focused on the relationship between war and finance, we need to pay special attention to those conflicts that had the most severe financial impact.

There are two classes of variables to consider. First, wars are more expensive the more extensive the conflict. One dimension of the extension of the conflict is the size of the army. Another is the geography of the conflict. A third is the length of the war. Large armies require a greater diversion of productive assets to the military, most obviously through salaries and logistical expenses. Far-flung military campaigns would also entail great cost, such as sending the army of Gran Colombia to liberate Peru from the Spanish. Finally, a long war can have a large cumulative expense. The second major consideration is the direct impact of war on the economy. Wars that interfered with commerce had greater financial effects. This especially applies to international commerce, because customs revenues were so important to the Treasury (Centeno, 2002; Coatsworth and Williamson, 2004). One of the acts of war that was most disruptive to commerce was the naval blockade. Another was the destruction of the factors of production, through battlefield and civilian deaths, and damage to land, capital and livestock.

Unfortunately, not all of the potential variables are well known for all the recorded conflicts. We use two alternative lists of wars. The first is the Gleditsch (2004) revision of the Correlates of War (1992) database. This database employs the criterion that counts wars only if more than 1000 people died per year.[8] A problem with the casualty threshold is that it introduces a bias against recording wars in small countries. For example, Ecuador, a small country, fought a war known as the Guerra de los Chihuahuas in 1833-34 that does not appear in the popular political science database, but it was by all accounts a major event in 19th century Ecuadorian history. So we construct a second list by augmenting the Gleditsch revision by examining histories of conflicts as described in Scheina (2002) and Bethell (1987). This list takes a broader definition of wars, so as to include even some short-lived rebellions. We interpret these lists as lower and upper bounds in measuring the frequency of violent conflict. In both cases wars are coded as indicator variables: "1" for war; "0" for peace. Clearly, this is an extremely coarse way to measure conflict. The wars themselves were quite heterogeneous in intensity, breadth and origins. But we are utilizing the list to look for the coincidence of debt settlement and service with conflict of any sort. After noting the relationship, we will return to the issue of the types of wars observed under different debt service situations. We include international wars in our database, because it will be instructive to see the relative importance of international and internal conflict financially and for debt service. The literature on internal political disorder is focused naturally on civil wars, but when looking for a link between fiscal weakness and war, it would be remiss

[8] See Gleditsch, p. 234, for a description of the nuances of the criterion when applied to different types of conflicts.

not to include cross-border conflicts. Figures 1 and 2 display the patterns of conflicts that emerge.[9]

In both databases, Buenos Aires and Mexico lead in conflict, with conflict being almost unceasing in Mexico. There are significant differences between the upper and lower bound measures for some countries. Ecuador is particularly under-represented by the lower bound because of the death threshold, but other countries are also greatly affected. Much early conflict in the 1820s is not picked up, and a number of rebellions in the 1830s and 1840s (Ecuador, Mexico, Peru and Venezuela) do not register in the lower bound case. Still, even using the upper bound criteria, certain interludes of relative peace appear for some countries: Buenos Aires from 1853 through 1858, Chile in the 1840s, New Granada for 1843-1850, Ecuador from 1835-1845, Peru in the late 1840s and Venezuela from 1838 until 1845. Mexico is the only country that did not have more than a three-year period of relative calm.

Let us now compare the data on debt settlement and service to the patterns of wars, in order to address the three questions posited in the introduction. Did countries settle their external debts and maintain debt service during peacetime? Did the unsuccessful ones coincide temporally with the outbreak of violent conflict? Were successful debtors less likely to fight after settlement? Table 3 shows that most of the debt settlements took place in peacetime, whether one uses the broad (I) or narrow (II) list of wars. These peacetime settlements usually occurred three to five years after the most recent war had ended. Thus, these interludes of peace observed in the war databases were often associated with debt settlements. Further, the settlements that lasted

[9] It is also possible that international war was related to internal order. Moreover, there are numerous examples of conflicts that have internal and international dimensions, such as the war of Texas' secession in 1835-1836. The underlying list of wars is presented in the appendix.

longer were agreed to in peacetime, with the exception of New Granada's 1861 settlement reached during a civil war. Mexico attempted several settlements during war, but these were not very successful.

Table 4 shows a comparison of the pre and post-settlement military histories of the successful settlement countries. On the basis of these data, the evidence appears mixed on whether debt service is associated with fewer wars. Chile is probably the best case in support of that hypothesis, and Buenos Aires and Peru the worst. If one chooses to focus exclusively on internal conflicts (see list in the appendix), the picture would be similar.[10] Table 5 shows the behavior of serial defaulters, and shows that in several cases default occurred during a time of war. Curiously, New Granada is again an exception to the norm. The evidence on the timing of war, settlement, and default, is consistent with the view that war may be a cause of default and inhibit successful debt settlement. However, the data are weaker with respect to the hypothesis that debt service is associated with less warfare. There are two caveats. First, these data are a coarse indicator of the relationship between war and the external debt because they are specified yearly. Second, timing alone does not prove the existence of a relationship.

Why would relatively peaceful interludes contribute to debt settlement? How did war finance affect the behavior of the debtor states? The answers to these questions require a framework for thinking about government decision-making with respect to their sovereign debt.

[10] Chile in 1851 and 1859; Buenos Aires in 1859, 1861, 1863 and 1870-1871; Peru from 1853-1858, and 1867-1868; and New Granada from 1860-1863. See the appendix.

Inside the Treasury

Costs and Benefits of Debt Service

Decision-makers in debtor nations determine whether or not to honor the country's sovereign debt, and the decisions are political in nature.[11] The decision-makers are sensitive, perhaps to a large degree, to the costs and benefits of debt service, and how those costs and benefits are distributed in society. There is a large literature on the economics of sovereign debt service, which has been successful in identifying a number of potential rationales for faithfully serving foreign debt obligations. These include reputation so as to ensure access to future credit (Eaton and Gersovitz 1981; Tomz, 2001), and fear of military and economic policy sanctions (Bulow and Rogoff, 1989; Mitchener and Weidenmier, 2005).

The political costs of debt service depend on the size and distribution of financial costs. The ratio of debt service to government revenue is one indicator of the size of the costs to domestic interests, because it implies the amount of adjustment that must be made. It is reasonable to conclude that the higher that ratio is, the less likely that a government will fulfill its obligations with foreign creditors. Table 6 shows the debt service ratios during five-year intervals between 1825 and 1870. We use the estimates for debt service from tables 1 and 2 when calculating the ratio. Recall that these estimates are calculated from the amount of debt issued, and do not account for amortization. Some countries issued additional loans after settlement, and the interest charges on those new loans are included in the debt service calculations (the additional

[11] North and Weingast (1989). The relationship between political institutions, constitutional structure, and debt service is a fruitful area for inquiry that is complementary to the relationship between question of political disorder and debt service that we examine here. In the interest of space, however, we cannot address it fully, although we will have some preliminary statements further on.

loans are listed in Table 2 of the appendix). In the denominator, we use ordinary government revenues – revenues excluding the proceeds from loans. Thus, they are a rough indicator of the debt burden of meeting interest payments alone. Also, note that because many countries were in default much of the time, the debt service is only hypothetical – it is what debt service would have been.

The data show that the original independence era debt was a heavy burden for many countries, twenty percent or more of total government revenues. Negotiated resettlements typically resulted in lower absolute payments for reasons outlined above, and therefore a lower debt service ratio. This was true for Ecuador, New Granada, Peru, and Venezuela. In the latter three cases, interest rates adjusted upward over time and deferred bonds kicked in, raising the absolute debt service. The debt service ratio would remain the same only if government revenues rose proportionately. In the case of New Granada and Venezuela, revenues rose more slowly than the interest burden. Buenos Aires and Chile did not receive any interest rate concession, and capitalized their deferred stock, thus actually increasing the absolute debt service above the original levels. Finally, Buenos Aires, Chile, Peru, New Granada and Venezuela all floated new loans in London in the 1850s and/or 1860s. This resulted in a rising absolute debt service, with differing impact on the debt service ratio because of different trends in government revenues.

What is clear from table 6 is that although high debt service ratios in 1820s suggest great difficulty in meeting obligations, the ratios later on are not a universally accurate predictor of which countries were in default and which were not. For example, Buenos Aires and Mexico had lower debt service ratios than Chile when the latter country was servicing its debt and the former were in default. The reason is that many governments, even with relatively small debt service ratios, had large budget deficits. Tenenbaum (1986, p. 182) has shown that between 1830 and 1856 Mexico was routinely running budget deficits of between 10% and 50% of total expenditures. Amaral (1995), Burgin (1946), Cortes-Conde and McCandless (2001), Halperin Donghi (1982), and Irigoin (2006) have all shown that during much of Rosas' dictatorship in Buenos Aires budget deficits were in the same range. Gootenberg (1996) has shown the same for Peru before the guano period, and Rodriguez (1985) for Ecuador. Deas (1982) writes of the "strangled cries" of New Granada's Treasury, and Berglund (1995) describes the spiraling Venezuelan deficits after 1848. Even a relatively small debt service ratio could imply significant political costs for debt service if a country is running a large budget deficit.

Budget Deficits and Wars

We argue that resuming external debt service took a back seat when governments were running budget deficits, because the deficits themselves implied a political inability to spend within their means, and that the demands of domestic interests took precedence over the external debt. Governments had four options for eliminating the deficit. First, they could raise taxes. Second, they could cut spending. Third, they could cover it through an inflation tax. Fourth, they could borrow money. We will show each of these was inextricably linked to war finance.

For most of these countries, taxes increases although tried from time to time, were not adequate. Scholars of Latin American history have emphasized weak administrative structrure, lack of political will to tax the property of the landed elites, and general poverty as reasons that tax increases were not an attractive or viable option (Centeno 2002; Deas, 1982; Gootenberg, 1996; Rodriguez, 1985; Tenenbaum, 1995). For this reason customs revenue was so important – it was the easiest tax to collect because it was collected at a physical bottleneck for the transit of commerce. The same reason that customs was easy to collect, however, made it easy to attack. Naval blockades in times of war could have a crippling impact on customs revenue and contribute to ballooning government budget deficits.

Most of the countries had one or two major ports that accounted for an overwhelming portion of the traffic. In Mexico, it was Veracruz and Tampico; in Ecuador Guayaquil, in Peru, Callao. But perhaps none of the debtors was more reliant on customs than Buenos Aires. Figure 3 shows the trend of customs revenues, total revenues, military expenditures and total expenditures in Buenos Aires for the years 1830-1851.[12] The dominance of customs for revenue, and military for expenses is clear. But what is most striking is that during the blockades of the late 1830s and the mid 1840s revenues plummet and the budget deficit increases dramatically. The government financed the deficit through issuing currency, causing the value of the paper peso to plummet (Burgin, 1946; Irigoin 2000). When Peru blockaded Guayaquil for ten months beginning in 1858, it completely cut off trade, and led directly to Ecuador's default.[13] Although trade rebounded, and with it customs revenues, Ecuador remained in arrears until it repudiated the 1855 settlement in 1869. France blockaded Veracruz during the so-called Pastry War in 1838, a war that France started because of a dispute over the

---

[12] Throughout the paper, when possible, we present all figures converted to British pounds sterling. The figures are not deflated, as reliable price indices do not exist in nearly every case.
[13] Fenn's Compendium, 1867, p. 289. See also Teran.

claims of private French citizens, one of whom was a pastry chef. In short, the naval blockade was a potentially potent and debilitating tool of war.

Aside from wars potential negative impact on revenues, the military costs of wars could wreck havoc with any austerity measures aimed at righting the fiscal ship. In Table 7 we present the average and maximum ratio of military expenses to total government expenditures. It indicates not only that the levels of spending were highly important to the budget, but that they also could rise to extremely high levels. A closer look at individual countries makes the point clearer. In Figure 3, Buenos Aires' military expenses are clearly dominating the government budget, and are particularly onerous during wartime – 1833-34 and the "permanent war" of the 1840s.

In the case of Mexico (Figure 4), wars under the Gleditsch-Correlates of War criterion are shaded. There are several spikes in the military expenditures series: corresponding with the Federalist Revolt of 1832, the Texas War of 1835-1836, again in 1838-1841, and just prior to the U.S. invasion. Total expenditures peak in 1852, but this is due to the disbursement of proceeds from the U.S. war indemnity. Again military expenditures rise during the Ayutla Revolt of 1854-55. In each case large budget deficits result. But just as significant is the complete absence of expenditures data for the height of the U.S.-Mexican War, and for the internal War of the Reforma. These wars were immensely costly and disruptive of the Treasury. There were twenty-nine changes at the head of the Treasury Ministry in the thirty-six months from January 1846 to December 1848.[14] There is little wonder that the country did not serve its foreign debt. Similarly, although not shown, data from the Treasury are missing during Ecuador's wars in 1833, 1845, 1852, and 1859-1860. Venezuelan and New Granadan data during the height of

[14] Stevens 1991, p 11.

their civil wars are also either missing or incomplete. Peru's Treasury did not publish an annual report between 1832 and 1845. The effects of war on the Treasury can be seen in these missing data as Sherlock Holmes' dog that did not bark.

Covering the Deficit with Emergency Credit

How did governments cover the burgeoning deficits caused by wars? Inflationary finance was always an option, and Irigoin (2000) has shown its importance in the case of Buenos Aires. Other countries also had limited issues of paper currency during wartime, but far and away the choice most governments made was to borrow money to cover the deficit. Because they were in default on an enormous foreign debt, formal sovereign debt issues through leading banking houses in Europe were off the table (Fenn's, Committee of Spanish American Bondholders, 1866).[15] So governments borrowed from the merchant houses and citizens that were the most accessible.

Borrowing took many forms. Governments often owed their employees, and even the military, back pay for one year or more. There were also forced and unforced loans from merchants, mortgages of different "ramos" of the treasury, and government bonds. New Granada's Memoria de Hacienda in 1851 details many different types of debt, with interest rates ranging from 0% to over 18% per year. Venezuela had so institutionalized domestic debt rollover by 1856 the division in charge of it, known as the "Ramo de Liquidacion" or "Solvency Branch," accounted for the 75% of total (ordinary plus extraordinary) government revenues. The largest elements, together making up 63%, were "acreedores corrientes" (principally back pay), and "acreedores por contrato"

[15] The only exception to this rule was Venezuela in 1862 and 1864 (see Table 2 in the appendix). We discuss foreign borrowing below.
[16] Memoria de la Hacienda de Venezuela, 1857.

(merchant loans).[16] The accounts detail a bewildering array of short-term emergency credit operations.

The case studies by Berglund (1995), Deas (1982), Gootenberg (1996), Halperin Donghi (1982), and Tenenbaum (1986) show that although foreign resident merchants provided the funds for some of the revolving debt, most was domestically financed. The governments of European countries and the United States were engaged in nearly constant diplomatic disputes on behalf of their citizens who had claims against the various Spanish-American governments. The debtor states had to choose carefully which debts to honor and which to repudiate, balancing domestic political concerns against diplomatic risk in addition to the standard desire of amortizing the highest interest loans first. On top of these short-term creditors were the holders of long-term government bonds, and into that category falls the sovereign debt at the center of our study. Accurate data series on the true size of the domestic debt and domestic debt service do not exist. The multiplicity of interest rates for the different classes of these debts make even a rudimentary domestic debt service calculation extremely difficult. But by all accounts it was a considerable sum. Although garden-variety mismanagement and graft were also likely culprits, the evidence from Figure 3 and 4, as well as from the case studies others have done, is that the major catalyst for this revolving debt was war. Before any serious effort to service the external debt could take place, these war debts had to be serviced.

The chaos that often accompanied the severe conflicts meant that it could take several years for the Treasury even to become aware of the full scale of the new debts, and regain financial footing. In 1845 the Treasury of New Granada was just starting to

[17] Memoria de la Hacienda de Venezuela, 1857.

get a handle on the financial effects of the War of the Supremes, which ended in 1842. In New Granada's 1845 Treasury Report, the accounting for the war starts to emerge. The minister explains that in 1840 and 1841 there were decreed forced loans, voluntary loans, and fines on the rebels, and in 1843 much of these funds finally made it to Bogota, and that they have been able to pay interest on domestic debt in 1844. He then enumerates the types and rough estimates of the debt accrued during the war. These include back pay for Hacienda employees (100,000 pounds) and the military (33,000 pounds), treasury bills emitted to cover missed coupons on domestic bonds (15,000 pounds), forced loans (32,000 pounds), debt to Ecuador for assistance provided (20,000 pounds), debt to tobacco planters (30,000 pounds), and for contracts with private firms and individuals (in excess of 100,000 pounds). Ironically, one of the private creditors is the British firm of Powles, Illingworth and Co., the agents for the British bondholders, who in 1841 loaned the government 25,000 pounds at an interest rate of six percent. About one half of the war debt had been paid back by January 1845, leaving about 240,000 pounds of special debt still to pay, over and above the domestic debt pre-dating the war. These debts, most of which were from the Gran Colombia domestic debt, plus the unpaid interest on them amounted to about two million pounds sterling. They carried interest of between zero and six percent.

Prior to the beginning of the war, New Granada had representatives in London in discussions with foreign bondholders, at the same time as representatives of Venezuela (Committee of Spanish American Bondholders, 1840). The proposed settlement was scuttled because of the war. In his 1844 report to Congress, the Treasury Minister wrote,

> "Despite the sincere desires of the government to conclude a satisfactory agreement with foreign creditors and on the part of New Granada, nothing has been done about the matter and things remain in the same state as they were at the end of the last Congressional session…Although the President is fully authorized to arrange for payment taking necessary funds from the national revenue, it is also true that a substantial debt weighs on those revenues, a debt that was contracted for the maintenance of constitutional government during the last war, and for the satisfaction of that debt the richest branches of the treasury are especially mortgaged. If it was possible to deduct from these funds a considerable sum for paying the foreign debt, the credit of the nation would not advance, what would be gained abroad would be lost at home, and if unfortunately the revolutionary occurrences that have caused such enormous damage to the Republic should repeat themselves, the Government would not be able to find anyone to lend it money."

In sum, New Granada presents an example of a country heavily burdened by debt, accruing extraordinary expenses during war, funding them by emergency measures, and giving preference to emergency creditors over external bondholders for clearly articulated political reasons.

For some countries at times the debt burden was so great that the service of many domestic debts were suspended. The frequent revolutions in Venezuela from 1846 to 1856 lead to a serious of emergency loans. Figure 5 shows the evolution of Venezuela's finances from 1844-1856. The peaks in military spending and widening government budget deficits correspond clearly with wars. Note that because Venezuelan fiscal years were from July 1 to June 30, there is a lag in the effect of some of the wars. The very large increases in total expenditures in the early 1850s reflect attempts to consolidate the debt, and, according to Berglund (1995), military-related expenses as well. The Treasury Minister of Venezuela pleaded with Congress in early 1857, just after another revolution, to rein in spending, so that they could properly serve their debts. If they did not, he said, the government would be forced to serve its creditors selectively, which would cause widespread discontent and fuel another revolution.[17] In 1847 the domestic debt was about 325,000 pounds sterling, and consisted mostly of long-term bonds inherited from Gran Colombia. By 1858, the domestic debt had reached a size nearly equal to the foreign bonds: about 3.5 million pounds sterling (22.2 million pesos), while the external debt was at that time nearly 4 million pounds including interest arrears since 1848. The most serious civil war since independence then broke out, but the Treasury was already in what the minister described as "chaotic conditions." Local loans were being offered only at an interest rate of 1.5% monthly, for full payment in 20 months, and with a mortgage of ½ of the customs. Only at this juncture did the government go to London to try to arrange for a settlement and new foreign loan.[18] This was forthcoming in 1862, a few months before the government fell to the rebels.

Finally, what about the countries that settled their debt, continued to fight wars, and maintained debt service? An informative case is that of Chile, as shown in Figure 6. There are also clear increases in military expenditures during wartime, and substantial budget deficits, especially in 1859 and the mid 1860s. However, by this time Chile was servicing its debt. In the mid 1830s the increase in military expenditures associated with the war against Peru and Bolivia was not financed through a deficit. Chile then ran budget surpluses around the time of renegotiating their debt. The large deficit of the mid 1860s reflects a large foreign loan. Four of the five countries that were servicing their debt in the 1860s - Argentina, Chile, New Granada, and Peru – took out additional

[18] Berglund 1995, p. 445, Eastwick, 1868.

foreign loans. For Argentina, Chile and Peru, they were to finance wars with foreign powers.[19]

International and Internal Wars: Additional Evidence from the Bond Market

The previous sections have shown that war was a major cause of debt, but that for some countries the most serious wars coincide with the complete absence of Treasury data. Bond market reaction is a substitute indicator of fiscal health, as bond prices reflect investors' perceptions of the likelihood of debt service. Also, the literature on war and debt has focused on the importance of internal rebellion to the cycle of war and debt. That is, debt should lead to more internal rebellion, and internal rebellion should lead to more debt. However, the evidence we have put forth suggests that international conflicts may have been even more severe in terms of their fiscal consequences. A cursory examination of bond price reactions to different wars illuminates the missing data problem, and the relative importance of internal and international differences, and points the way for future inquiry.

From the letters to the Times of London, investor reports in Fenn's Compendia, as well as publications of the Committee of Spanish American Bondholders, and later Corporation of Foreign Bondholders, it is clear that the investing public was tuned into political and military developments abroad. Investors would factor in their own analysis of this relationship when determining their willingness to pay for the bonds in question, and thus their cumulative views should be observable in bond prices. In order to take into account the fluctuations of the market, as well as examine a measure of the risk

[19] Latin American countries also began to use it for railroad construction and other public works. See Marichal, Rippy, and Table 2 in the appendix.

premium of these securities, we calculate the spread between the yield of the Spanish American bonds and the yield of the British Consol.[20] We offer two graphs of these yield spreads as preliminary evidence of the relationship between war and the bonds, pending formal econometric tests. Figure 7 shows the behavior of Mexican securities, and there were clearly major increases in the yield spread (corresponding with declines in the prices of Mexican securities) in 1832, 1836, 1838, 1846-1848, 1851, and mid 1859. The very substantial increases at the end of 1832 coincide with the heaviest fighting of the revolution that year, but also a general increase in the spread for Spanish-American securities (not shown).[21] Note that transportation from Mexico to England was fairly regular, with news taking a few weeks to travel. But the increase in late 1836 comes six months after the decisive battles of the Texas War. The peak in late 1838 does coincide with the French blockade of Veracruz. Finally, the U.S.-Mexican conflict is irrefutably visible, although even that could be diminished with econometric tests that take into account the secular increase in risk premia for many foreign securities during the international crisis of 1848. The peak in mid 1859 occurs during the War of the Reforma. But clearly the signature moment of this series is the U.S.-Mexican War. The U.S. invasion was highly destabilizing, as is indicated by the turnover of high office holders in the government (Stevens, 1991). The indemnity payment, of course, was a key ingredient in the partially successful settlement in 1850, but as Tenenbaum (1986) and Bazant (1968) have noted, government revenues were lower in the 1850s than earlier.

---

[20] Note that these are informal definitions of "yield," since there were no dividends paid. Figures of the bond prices themselves are included in the Appendix.

[21] Fowler (2000), who offers a revisionist interpretation of Mexico's internal conflict during this period, believes that most are overblown, and that they had relatively little impact. He makes two exceptions: the 1832 revolt and the 1854-55 Ayutla Revolt, which he says were the only ones that truly had national implications and involved large segments of the population.

What makes the Mexican case so fascinating is that the French invasion at the beginning of 1862 has precisely the opposite impact on bond yields.[22] The initial reaction in London was very positive to the French invasion and the commitment by the Archduke turned Emperor to service the Mexican debt. As the Mexicans began to gain the upper hand, the yield spread rose back to levels not seen since the U.S.-Mexican War.

We contrast the Mexican case with that of Chile (Figure 8). Aside from the increase in 1832 that may be associated with broader "junk bond" trends, we can see a dramatic deterioration in the Chilean yield spread during the period of the war with Peru and Bolivia. Chile's fiscal performance during that war may have inspired confidence in a negotiated settlement, because the yield spread declines substantially well before Chile actually agrees to resume debt service. The crisis of 1848 is barely noticeable, nor or the revolutions of 1851 and 1859. A new Chilean issue is picked up around 1861 on the Exchange, and its yield rises during the war with Spain. But the overall picture after settlement is one of confidence on the part of investors.[23]

Further, while Chile did not issue any new foreign debt during the rebellions of 1851 and 1859, it floated major issues during and after its war with Spain to cover war expenses (table 2 in the appendix). Much the same could be stated for Buenos Aires, Argentina and Peru: internal rebellions were more easily self-financed than foreign wars;

[22] The French invasion was preceded by a series of events in 1860-1861 that were intimately involved with the foreign debt. A dispute over claims culminated in a mid 1861 announcement that Mexico would begin a two-year moratorium on all foreign debt payments. This was ostensibly the rationale for the French invasion. Platt has argued that Britain did not pursue a policy of military intervention for bondholders during this period, which is backed up by a memorandum by the British Foreign Secretary, Lord Palmerston, and much correspondence published in volumes of the Sessional Papers.

[23] A working hypothesis for further research is the bond market is more sensitive to military and political conflict in countries that are in default than for countries servicing their debt. This could possibly be as much due to the different types of investors who choose to trade in defaulted debt versus debt that pays regular dividends, as to the fiscal fundamentals in the countries.

the latter led to large issues of debt. The evidence is merely suggestive at this stage, but could it be that international conflict was a more important factor determining the fiscal frailty of some of these governments than their much-touted internal political turmoil?

Conclusions

We posed three main questions about the war-debt cycle in the introduction, and careful examination of the data lead us to three corresponding generalizations. Most Spanish-American countries settled their independence-era debt after a peaceful interlude, serial defaults often occurred in the context of war, and debt service is not obviously associated with a reduction of conflict. The evidence from the Treasury demonstrates that war finance contributed to fiscal deficits, which were covered primarily by borrowing.

In the 1860s, three of the four Spanish-American countries serving their foreign debt accessed foreign capital markets to fight international wars. If foreign access to credit was so beneficial, why didn't the other countries settle earlier? The evidence shows that they tried. Each reached re-scheduling agreements at one point or another, but chose to suspend debt service, often when a new war engulfed them. It may have been too early for them to be able to parlay their debt service into a reputation sufficiently good that they could float new issues. Peru was only able to do so after three years, and it is the unique case in the region because of the special credible commitment to repay that the guano trade offered (Vizcarra, 2006). Chile waited sixteen years after settling, and Buenos Aires (Argentina) eight. The exception is Venezuela, which floated loans with the express purpose of trying to regain solvency, the discount was enormous, and most of the proceeds simply went to pay off old war debt. The loans were roundly ridiculed in the financial press. The indignant agent for the General Credit Co., which sponsored the second loan, blamed the British government for its traditional reluctance to force payment on behalf of bondholders.[24] At least in this period, 1830-1870, Spanish American governments repeatedly revealed their preference for allocating limited fiscal resources to maintaining the flow of emergency credit from resident merchants, and catching up on the back wages of those unfortunate soldiers and employees who had sacrificed during war. The decision was seen as sensible domestic politics.

Finally, why is there so little evidence that debt service, once resumed, is associated with fewer wars? We cannot answer conclusively, but it certainly is possible that healthier public finance was only one, relatively small piece in the pantheon of political problems faced by Spanish-America's emerging nation-states (Safford, 1992, 2000). North, Summerhill and Weingast (2000), and Haber, Maurer and Razo (2003) note the move from disorder to order in the 1870s. Other scholars also point to that decade as a tectonic shift for much of the region. It seems that large-scale social and economic forces were at work. Latin America's relation to the world economy was evolving through economic growth abroad and improved transportation and communication. The integration of Latin America into this "new global economy" would be underwritten in no small part by a fresh wave of foreign finance.

[24] He wrote that British policy "amounts to almost touting for injuries, and reminds one of Jack in the Tale of the Tub, who 'would stand in the turning of a street, and calling to those who passed by, would cry to one, 'Worthy, sir, do me the honour of a good slap in the chaps.'" Eastwick, p 328.

Bibliography

Adelman, Jeremy. *Republic of Capital: Buenos Aires and the Legal Transformation of the Atlantic World*. Stanford: Stanford University Press, 1999.

Amaral, Samuel. "La deuda publica de Buenos Aires, 1800-1850." In Reinhard Liehr, *La deuda publica en America Latina en perspectiva historica*. Frankfurt: Iberoamericana, 1995.

Bates, Robert, John Coatsworth and Jeffrey Williamson. "Lost Decades: Lessons from Post-Independence Latin America for Today's Africa." NBER Working Paper 12610, 2006.

Bazant, Jan. *Historia de la deuda exterior de Mexico, 1823-1946*. Mexico: El Colegio de Mexico, 1968.

Berglund, Susan. "The Public Debt of Venezuela: Causes and Effects, 1830-1870." Reinhard Liehr, *La deuda publica en America Latina en perspectiva historica*. Frankfurt: Iberoamericana, 1995.

Bethell, Leslie, editor. *Spanish America after Independence, 1820-1870*. Cambridge: Cambridge University Press, 1987.

Bulow, Jeremy and Kenneth Rogoff. "Sovereign Debt: Is to Forgive is to Forget." *American Economic Review* 79: 43-50 (1989).

Burgin, Miron. *The Economic Aspects of Argentine Federalism, 1820-1852*. Cambridge: Harvard University Press, 1946.

Centeno, Miguel Angel. *Blood and Debt: War and the Nation-State in Latin America*. University Park, PA: Pennsylvania State University Press, 2002.

Coatsworth, John. "Economic and Institutional Trajectories in Nineteenth-Century Latin America." In *Latin America and the World Economy Since 1800*, John Coatsworth and Alan Taylor, editors. Cambridge, MA: Harvard University Press, 1998.

_____________. "Political Economy and Economic Organization." In *The Cambridge Economic History of Latin America, Volume 1*, Victor Bulmer-Thomas, John Coatsworth and Roberto Cortes-Conde, editors, 2006.

_____________, and Jeffrey Williamson. "Always Protectionist? Latin American Tarifs from Independence to Great Depression. *Journal of Latin American Studies*, 36: 205-232, 2004.

Committee of Spanish American Bondholders. Colombian Loans. London: A.H. Baily, 1840.

______________________________. Proceedings in relation to the Foreign Debt of the Republic of Buenos Ayres. London: Richard Clay, 1854.

______________________________. Summary Review of the Proceedings of the Committee of Spanish American Bondholders from the Commencement. London: Richard Clay, 1866.

Cortes-Conde, Roberto. Dinero, Deuda y Crisis: Evolucion Fiscal y Monetaria en la Argentina, 1862-1890. Buenos Aires: Editorial Sudamericana, 1989.

___________________, and George McCandless. "Argentina: From Colony to Nation: Fiscal and Monetary Experience of the Eighteenth and Nineteenth Centures." In *Transferring Wealth and Power from the Old to the New World*, Michael Bordo and Roberto Cortes-Conde, editors. Cambridge: Cambridge University Press, 2001.

Costeloe, Michael. *Bonds and Bondholders: British Investors and Mexico's Foreign Debt, 1824-1888*. Westport, CT: Praeger, 2003.

Dawson, Frank. *The First Latin American Debt Crisis*. New Haven: Yale University Press, 1990.

De Paiva Abreu, Marcelo. "Brazil as a Debtor, 1824-1931." Economic History Review, 59: 765-787 (2006).

Deas, Malcolm. "The Fiscal Problems of Nineteenth-Century Colombia." *Journal of Latin American Studies*, 14: 287-328 (1982).

Dye, Alan. "The Institutional Framework." In *The Cambridge Economic History of Latin America, Volume 1I*, Victor Bulmer-Thomas, John Coatsworth and Roberto Cortes-Conde, editors, 2006.

Engerman, Stanley and Kenneth Sokoloff. "The Evolution of Suffrage Institutions in the New World." *Journal of Economic History* 65: 891-921 (2005).

____________________________________. "Factor Endowments, Institutions, and Differential Paths of Growth among New World Economies: A View from Economic Historians of the United States." In *How Latin America Fell Behind*, Stephen Haber, editor. Stanford: Stanford University Press, 1997.

Eastwick, Edward. *Venezuela: Sketches of Life in a South American Republic; with the History of the Loan of 1864*. London: Chapman and Hall, 1868.

Eaton, Jonathan and Mark Gersovitz. "Debt with Potential Repudiation: Theoretical and Empirical Analysis." *Review of Economic Studies*, 48: 289-309 (1981)

Fowler, Will. "Civil Conflict in Independent Mexico, 1821-1857: An Overview." In *Rumours of Wars: Civil Conflicts in Nineteenth-Century Latin America*, Rebecca Earle, editor. London: University of London, 2000.

Gleditsch, Kristian. "A Revised List of Wars Between and Within Independent States, 1816-2002." *International Interactions*, 30: 231-262 (2004).

Gootenberg, Paul. "Paying for Caudillos: The Politics of Emergency Finance in Peru, 1820-1845." In *Liberals, Politics and Power*, Vincent Peloso and Barbara Tenenbaum, editors. Athen, GA: University of Georgia Press, 1996.

Grafe, Regina, and Maria Alejandra Irigoin. "The Spanish Empire and Its Legacy: Fiscal Re-distribution and Political Conflict in Colonial and Post-Colonial Spanish America." London School of Economics Working Paper, 2006.

Great Britain. *Correspondence between Great Britain and Foreign Powers and Communications from the British Government to Claimants relating to Loans Made by British Subjects, 1823-1847*. Sessional Papers. London, 1847.

Haber, Stephen. "Introduction: Economic Growth and Latin American Historiography." In *How Latin America Fell Behind*, Stephen Haber, editor. Stanford: Stanford University Press, 1997.

____________, Noel Maurer and Armando Razo. *The Politics of Property Rights*. Cambridge: Cambridge Univerity Press, 2003.

Halperin Donghi, Tulio. *Guerra y Finanzas en los Origenes del Estado Argentino*. Buenos Aires: Editorial de Belgrano, 1982.

Irigoin, Maria Alejandra. "Gresham on Horseback: The Monetary Roots of Spanish American Political Fragmentation in the Nineteenth Century." London School of Economics Working Paper, 2006.

____________________. "Inconvertible Paper Money, Inflation and Economic Performance in Early Nineteenth-Century Argentina." *Journal of Latin American Studies* 32: 333-359 (2000).

Liehr, Reinhard. "La deuda exterior de la Gran Colombia frente a Gran Bretana, 1820-1860." In *America Latina en la Epoca de Simon Bolivar*, Reinhard Liehr, editor. Berlin: Colloquium Verlag, 1989.

Marichal, Carlos. *A Century of Debt Crises in Latin America*. Princeton: Princeton University Press, 1989.

_____________. "Money, Taxes and Finance." In *The Cambridge Economic History of Latin America, Volume 1*, Victor Bulmer-Thomas, John Coatsworth and Roberto Cortes-Conde, editors, 2006.

Mitchener, Kris and Marc Weidenmier. "Supersanctions and Sovereign Debt Repayment." NBER Working Paper 11472, 2005.

Neal, Larry. "The Financial Crisis of 1825 and the Restructuring of the British Financial System." *Federal Reserve Bank of St. Louis Review*, 1998.

_________. *The Rise of Financial Capitalism*. Cambridge: Cambridge University Press, 1991.

North, Douglass and Barry Weingast. "Constitutions and Commitment." *Journal of Economic History*, 49: 803-832 (1989).

_____________, William Summerhill and Barry Weingast. "Order, Disorder and Economic Change: Latin America versus North America." In *Governing for Prosperity*, Bruce Bueno de Mesquita and Hilton Root, editors. New Haven: Yale University Press, 2000.

Platt, D.C.M. *Finance, Trade and Politics in British Foreign Policy, 1815-1914*. Oxford: Clarendon Press, 1968.

Prados de la Escosura, Leandro. "The Economic Consequences of Independence in Latin America." In *The Cambridge Economic History of Latin America, Volume 1*, Victor Bulmer-Thomas, John Coatsworth and Roberto Cortes-Conde, editors, 2006.

Quiroz, Alfonso. "Public Debt and the Domestic Financial Structure in Peru, 1850-1914." Reinhard Liehr, *La deuda publica en America Latina en perspectiva historica*. Frankfurt: Iberoamericana, 1995.

Rippy, J. Fred. *British Investments in Latin America, 1822-1949*. Minneapolis: University of Minnesota Press, 1959.

Rodriguez, Linda. *The Search for Public Policy: Regional Politics and Government Finances in Ecuador, 1830-1940*. Berkeley: University of California Press, 1985.

Safford, Frank. "The Problem of Political Order in Early Republican Spanish America." *Journal of Latin American Studies*, 24: 83-97 (1992).

____________. "Politics, Ideology and Society." In Leslie Bethell, editor. *Spanish America after Independence, 1820-1870*. Cambridge: Cambridge University Press, 1987.

____________. "Reflections on the Internal Wars in Nineteenth-Century Latin America." In *Rumours of Wars: Civil Conflicts in Nineteenth-Century Latin America*, Rebecca Earle, editor. London: University of London, 2000.

Scheina, Robert. Latin America's Wars: The Age of the Caudillo, 1791-1899. Dulles, VA: Brassey's, 2003.

Singer, J. David and Melvin Small. "Correlates of War Project: International and Civil War Data, 1816-1992." Ann Arbor: ICPSR, 1995.

Stevens, Donald. *Origins of Instability in Early Republican Mexico*. Durham: Duke University Press, 1991.

Tantalean Arbulu, Javier. *Politica economico-financiera y la formacion del estado*. Lima: CEDEP, 1983.

Tenenbaum, Barbara. "Mexico's Money Market and the Internal Debt, 1821-1855." In Reinhard Liehr, *La deuda publica en America Latina en perspectiva historica*. Frankfurt: Iberoamericana, 1995.

_________________. *The Politics of Penury: Debts and Taxes in Mexico, 1821-1856*. Alberquerque: University of New Mexico Press, 1986.

Teran, Emilio. *Informe al Jefe Supremo General Eloy Alfaro sobre la deuda anglo-ecuatoriana*. Quito: Imprenta Nacional, 1896.

Tilly, Charles. *Coercion, Capital and European States*. Oxford: Blackwell, 1990.

Tomz, Michael. "How do Reputations Form?" Working Paper, 2001.

Vizcarra, Catalina. Guano, Credible Commitments, and State Finances in Nineteenth-Century Peru. Unpublished manuscript, 2006.

Weingast, Barry. The Political Foundations of Limited Government: Parliament and Sovereign Debt in 17th and 18th Century England." In *Frontiers of the New Institutional Economics*, John Drobak and John Nye, editors. Academic Press, 1997.

Table 1: Spanish-American Sovereign Loans

Country[1]	(1) Date of Loan	(2) Amount (pounds sterling)	(3) Interest Rate	(4) Issue Price	(5) Date of Default	(6) Dates of Re-scheduling Agreements	(7) Debt Service[2]
Buenos Aires	1824	1,000,000	6	85	1828	1857	60,000
Chile	1822	1,000,000	6	70	1826	1842	60,000
Gran Colombia[4]	1822 1824	2,000,000 4,750,000	6 6	84 88	1826 1826	-	405,000
Ecuador						1855	
New Granada						1845, 1861	
Venezuela						1840, 1859	
Mexico	1824 1825	3,200,000 3,200,000	5 6	58 89	1827 1827	1831, 1837, 1846, 1851	352,000
Peru	1822 1824 1825	450,000 750,000 616,000	6 6 6	88 82 78	1826 1826 1826	1849	108,960

Sources: Columns 1-4: Marichal (1989), p. 28. Column 5: Dawson, chapters 6-8. Column 6: Fenn's Compendium, various years, Costeloe, Times of London. Column 7: Authors' calculations. Column 8: Authors' calculations based on Amaral (1995), Resumen de la Hacienda de Chile, Memoria de Hacienda de Colombia (1826), Rodriguez (1985), Memoria de Hacienda de Nueva Granada, Memoria de Hacienda de Venezuela, Tenenbaum, Tantalean Arbulu.

Notes:

[1] The Central American Confederation, which contracted a loan for 163,300 pounds, is not included.

[2] Debt service is approximated by taking the annual interest charges on the full principal. Because some amortization took place prior to default, the actual figures were slightly lower.

[3] Because of different data availability with respect to government revenues, debt service ratios are calculated based on different years for the different countries. Buenos Aires: 1828. Chile: 1833. Gran Colombia: 1825. Ecuador: 1830. Mexico: 1827. New Granada: 1830. Peru: 1830. Venezuela: 1832.

[4] Gran Colombia split into Ecuador, New Granada and Venezuela subsequent to contracting the loan. The debt service ratios for those countries are based on the partition of Gran Colombia's original debt that was agreed to by the three countries in 1838.

Table 2: Re-scheduling Agreements, 1830-1870.

Country	Date[1]	Defaulted Principal	Interest Arrears	Old Bonds Retired?	Amount of New Bonds	Interest Rate	New Debt Service	Default Date[2]
Buenos Aires	1857	977,000	1,626,705	No	1,500,000	1% until 1865; 2% from 1865-70; 3% thereafter	Begins at 73,620, reaches max of 103,620.	1890
Chile	1842	934,000	756,000	No	756,000	None until 1847; 3% thereafter.	70,000 until 1847; 100,260 thereafter.[3]	1931
Ecuador	1855[4]	1,424,579	2,393,292	Yes	1,824,000	1% if 1/4 of Guayaquil customs are less than $400,000 per year; when over $400,000 surplus applied until a max of 6%.	Between 14,245 and 85,475.	1859 *1869*[5]
Mexico	1831	5,281,400	1,108,486	No	639,255	None until 1836; 5% thereafter.	290,477 until 1836; 379,156 thereafter	1833
					945,270	None until 1836; 6% thereafter.		
	1837[4]	6,865,820	1,869,537	Yes	4,623,689	5%	231,198 until 1847; 462,396 thereafter	1837 *1843*[6]
					4,623,689	None until 1847; 5% thereafter		
	1846	10,714,750	489,269	Yes	10,241,650	5%	512,082	1847
	1850	10,241,650	2,068,111	Yes	10,241,650	3%	307,249; 250,000 annually for amortization after 6 years.	1852 *1854*[7]
New Granada	1845	3,312,975	3,776,791	Yes	3,312,975	1% until 1849, increase by ¼% each year until max of 6%.	33,130 until 1849, reaches maximum of 298,161 in 1877.	1848 *1853*[8]
					3,312,975	None until 1861; 1% in 1861; increase each year 1/8% until max of 3%.		
	1861[4]	3,241,425	774,906	Yes	4,016,331	2% until 1866; 3% thereafter	Begins at 88,350, reaches maximum of 147,525 after 1866.	1880
					3,209,075	Begins with ¼%, and increasing gradually to a max of 1.5%.		

Table 2, continued.

Country	Date	Defaulted Principal	Interest Arrears	Old Bonds Retired?	Amount of New Bonds	Interest Rate	New Debt Service	Default Date
Peru	1849	1,759,100	2,472,933	Yes	1,759,100	4% until 1850, increasing by ½% each year until max of 6%.	70,364 in 1849; reaches maximum of 105,546.	1876
					1,854,700	None until 1852; 1% in 1852, increasing by ½% each year until max of 3%.		
Venezuela	1840	1,888,396	1,501,000	Yes	1,857,160	2% until 1847; increase by ¼% each year until max of 6%.	37,143 until 1847; reaches maximum of 203,805 in 1868.	1847
					1,847,500	None until 1852; then 1%, increasing by ¼% each year until max of 5%.		
	1859	3,354,300	911,200	Yes	2,812,000	2.5% in 1859; 3% thereafter.	84,114 in 1859; 106,000 thereafter.	1860 (1863)[9]
					1,382,350	1% in 1859; 1.5% thereafter		

Sources: Bazant, Corporation of Foreign Bondholders Annual Reports, Costeloe, Eastwick, Fenn's Compendia, Memoria sobre la Deuda Esterior de la Nueva Granada, Committee of Spanish-American Bondholders (1854, 1866), Times of London.

Notes:

[1] Date of agreement determined by date that the agreement was officially ratified by the national government, except in the case of Mexico 1837, when ratification did not take place until 1839.

[2] Default date refers to the date when cash coupon payments ceased.

[3] Includes sinking fund provision. Others may have had sinking fund provisions (Mexico 1851, Peru 1849 yes).

[4] Land warrants or land warrant options also included.

[5] Ecuador missed payments in 1859, and began them again one year later. From 1860-1869 the government remitted payments, although they continued to be in arrears. They formally repudiated the 1855 accord in August 1869, and suspended payment entirely.

[6] Mexico did not officially ratify the 1837 agreement until 1839. It did not pay any dividends in cash until 1842, although it did permit bondholders to exchange the prior missed coupons for customs certificates and debentures. The only cash dividends paid under the agreement were in 1842.

[7] The last coupon payment Mexico made was for July 1853. Some funds sporadically were sent to the bondholders, but never enough to pay another coupon. In late 1860 Mexican authorities confiscated a sum slightly in excess of ½ of one year's interest (173,000 pounds) for the bondholders that was being held at the British Embassy in Mexico City. It represented the accumulation of several years' partial payments.

[8] In 1850, New Granada offered foreign bondholders Treasury bills paying six percent interest in exchange for three missed coupon payments from December 1848 to December 1849. These evidently were amortized by 1860. In 1856, New Granada paid six back dividends using bonds that Peru had paid it in compensation for the debt Peru owed New Granada for the assistance rendered during the wars of independence. Thus, by the time of the 1861 re-scheduling, it still owed payments for coupons dating to December 1853.

[9] Venezuela defaulted immediately after the re-scheduling agreement, but managed to negotiate a loan through Barings in 1862 that, among other things, capitalized back interest. It made these payments until 1865. Meanwhile, it negotiated a second loan in 1864 with the General Credit Co., and made payments on that loan until 1867. There is no record of it ever making payments on the re-scheduled debt. See text for discussion

Table 3. War and Debt Settlements, 1825-1870

Country	Re-scheduling Date	At War?		Years since Last War		Years to Next Default
		I	II	I	II	
Buenos Aires	1857	No	No	5	5	33
Chile	1842	No	No	3	3	89
Ecuador	1855	No	No	3	-	4 (14)
New Granada	1845	No	No	3	3	2
	1861	Yes	Yes	-	-	19
Mexico	1831	No	No	2	-	2
	1837	Yes	No	-	1	0 (6)
	1846	Yes	Yes	-	-	0
	1850	Yes	Yes	-	-	4
Peru	1849	No	No	5	8	26
Venezuela	1840	No	No	3	-	7
	1859	Yes	Yes	-	-	0

Sources: See Tables 1 and 2. Gleditsch, Singer and Small, Scheina and Bethell.
Notes: "I" refers to broad criteria for war definition; "II" refers to narrow criteria. Numbers in parentheses refer to last year there were partial payments or payments in-kind under the agreement. See text.

Table 4. Successful Settlements.

Country	Settlement Date	Fraction War-Years after Settlement (to 1870)	Fraction War-Years before Settlement (to 1825)
Buenos Aires	1857	9/14; 10/14	19 /32 ; 30/32
Chile	1842	4/29; 3/29	6/17 ; 8/17
Peru	1849	13/22; 8/22	5/24 ; 14/24
New Granada	1861	3/10 ; 3/10	5/36 ; 13/36

Sources: See Tables 1 and 2. Gleditsch, Singer and Small, Scheina and Bethell.
Note: The range of years refers to the first and second definition of war, respectively.

Table 5. Serial Defaults.

Country	Settlement Date	Default Date	At War When Defaulted? Def. I.	At War When Defaulted? Def. II.
Ecuador	1855	1859 (1869)	No (No)	Yes (No)
New Granada	1845	1848 (1853)	No (No)	No (No)
Mexico	1831	1833	No	No
Mexico	1837	1837 (1843)	No (No)	Yes (Yes)
Mexico	1846	1847	Yes	Yes
Mexico	1850	1854	Yes	Yes
Venezuela	1840	1848	No	Yes
Venezuela	1859	1860	Yes	Yes

Sources: See Tables 1 and 2. Gleditsch, Singer and Small, Scheina and Bethell.

Table 6. Ratio of External Debt Service to Government Revenue.

Country	1825-1830	1831-1835	1836-1840	1841-1845	1846-1850	1851-1855	1856-1860	1861-1865	1866-1870
Buenos Aires	*0.21*	*0.14*	*0.18*	*0.11*	*0.09*	*0.09*	0.09	0.05	
Chile	N.A.	*0.18*	*0.13*	0.12	0.13	0.09	0.08	0.14	0.09
Ecuador	N.A.	*0.64*	*0.53*	N.A.	*0.44*	*0.44*	0.05	0.05	0.05
Gran Colombia	0.29	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Mexico	*0.10*	*0.11*	*0.09*	0.06	*0.13*	0.13	*0.15*	N.A.	N.A.
New Granada	N.A.	*0.44*	*0.44*	*0.34*	0.06	*0.15*	*0.24*		
Peru	*0.23*	N.A.	N.A.	*0.09*	0.05	0.11	0.07		
Venezuela	N.A.	*0.44*	*0.36*	0.04	*0.06*	*0.10*	*0.10*	N.A.	N.A.

Sources: Amaral, Burgin, Resumen de la Hacienda Publica de Chile, Rodriguez, Memoria de la Hacienda de Colombia, Tenenbaum, Memoria de la Hacienda de Nueva Granada, Tantalena Arbulu, Berglund, Memoria de la Hacienda de Venezuela, Fenn's Compendia.

Notes:
1. These are not five-year averages, but selected years in each five-year range. Five-year averages were not possible to calculate because of the lack of data. The dates used for each country are as follows: Buenos Aires: 1828, 1834, 1837, 1844, 1849, 1851, 1858, 1864. Chile: 1833, 1839, 1843, 1849, 1853, 1857. Ecuador: 1834, 1839, 1847, 1854, 1857, 1863, . Gran Colombia: 1825. Mexico: 1827, 1834, 1839, 1842, 1850, 1853, 1860. New Granada: 1832, 1838, 1844, 1847, 1853, 1857. Peru: 1830, 1846, 1850, . Venezuela: 1832, 1839, 1844, 1849, 1854, 1859.
2. Figures in italics denote hypothetical debt service, as the country was in default.
3. Figures reflect the debt service on new foreign borrowing that occurred after settlement. See table 2 in the appendix.
4. The figures for Ecuador, New Granada and Venezuela prior to their re-scheduling agreements are based upon the partition of Gran Colombia's debt agreed to between 1834 and 1838.

Table 7. Military Expenditures as Percent of Total Expenditures.

Country	Years	Average	Maximum (Year)
Buenos Aires	1830-1851; 1864-1870	0.53	0.72 (1840)
Chile	1833-1870	0.32	0.54 (1866)
Ecuador	1830-1870 (gaps)	0.36	0.74 (1830)
Mexico	1830-1861 (gaps)	0.34	0.62 (1832)
New Granada	1847-1859	0.22	0.44 (1854)
Peru	1846-1870	0.34	0.52 (1861)
Venezuela	1832-1857	0.38	0.73 (1849)

Sources: Amaral, Resumen de la Hacienda Publica de Chile, Rodriguez, Tenenbaum, Memoria de la Hacienda de Nueva Granada, Tantalean Arbulu, Memoria de la Hacienda de Venezuela.

Figure 1
War in Spanish America, 1825-1870
Gleditsch - Correlates of War

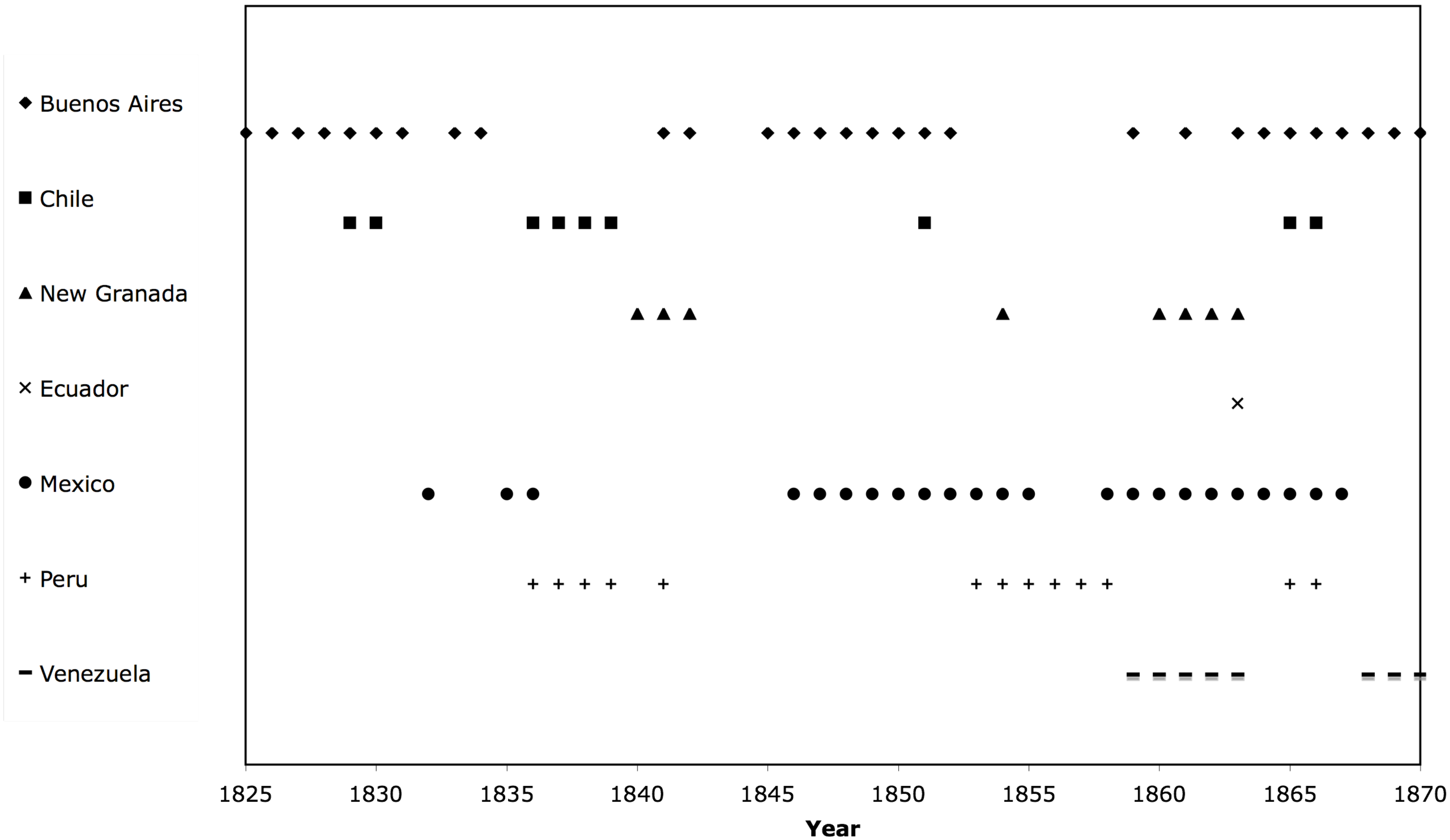


Figure 2
War in Spanish America, 1825-1870
Broad Criteria

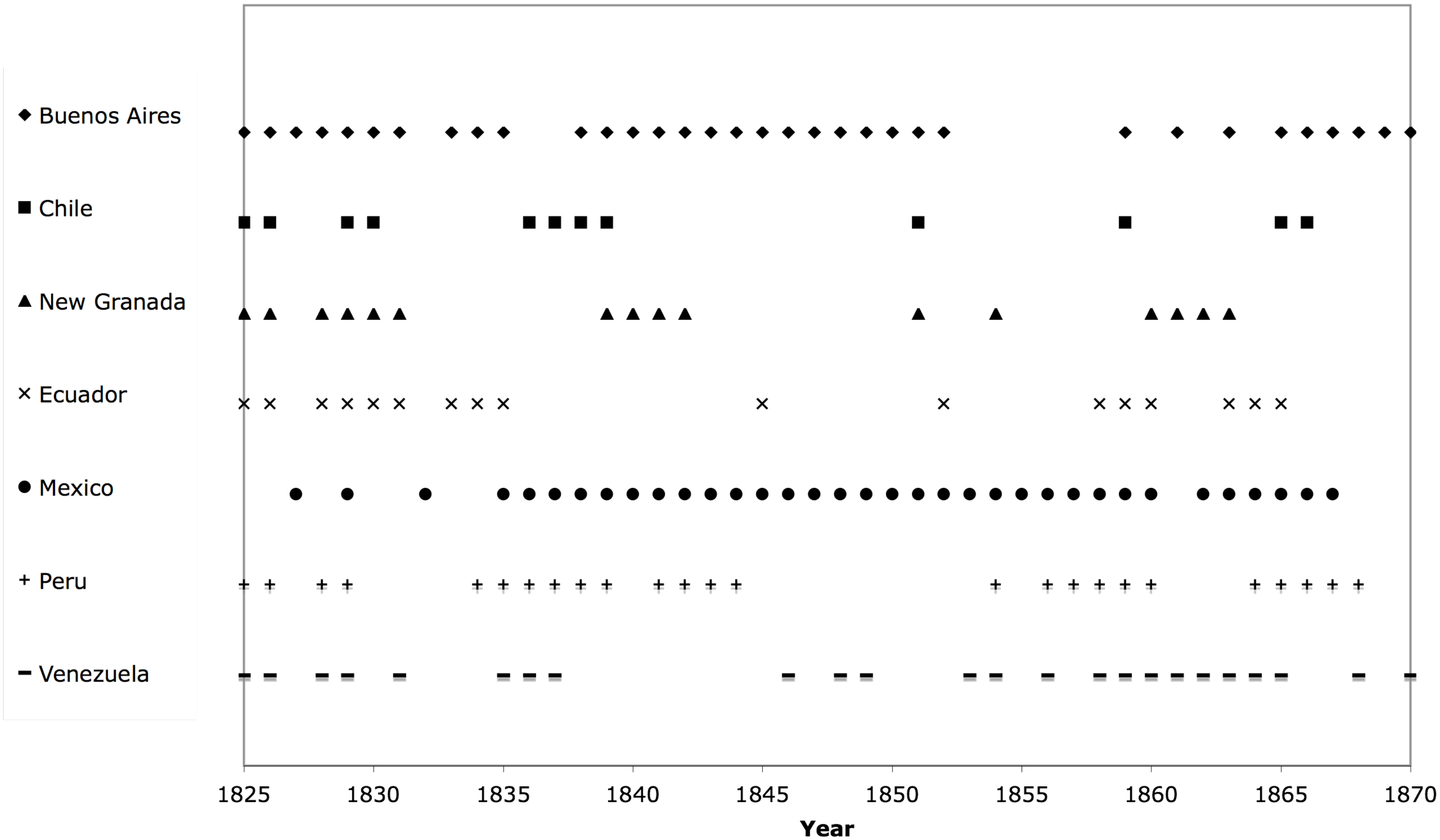


Figure 3
Buenos Aires Fiscal History

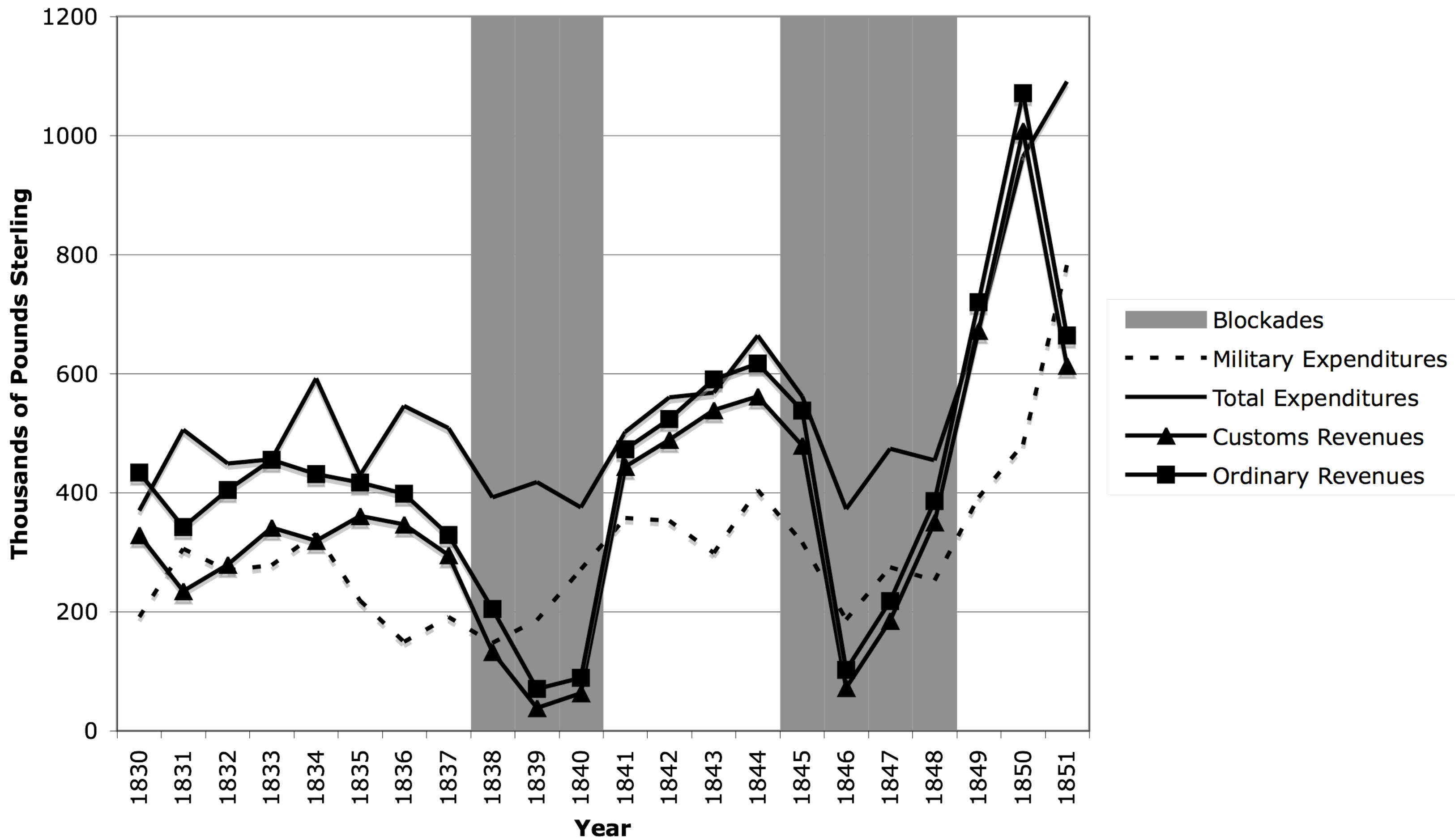


Figure 4
Mexican Fiscal History

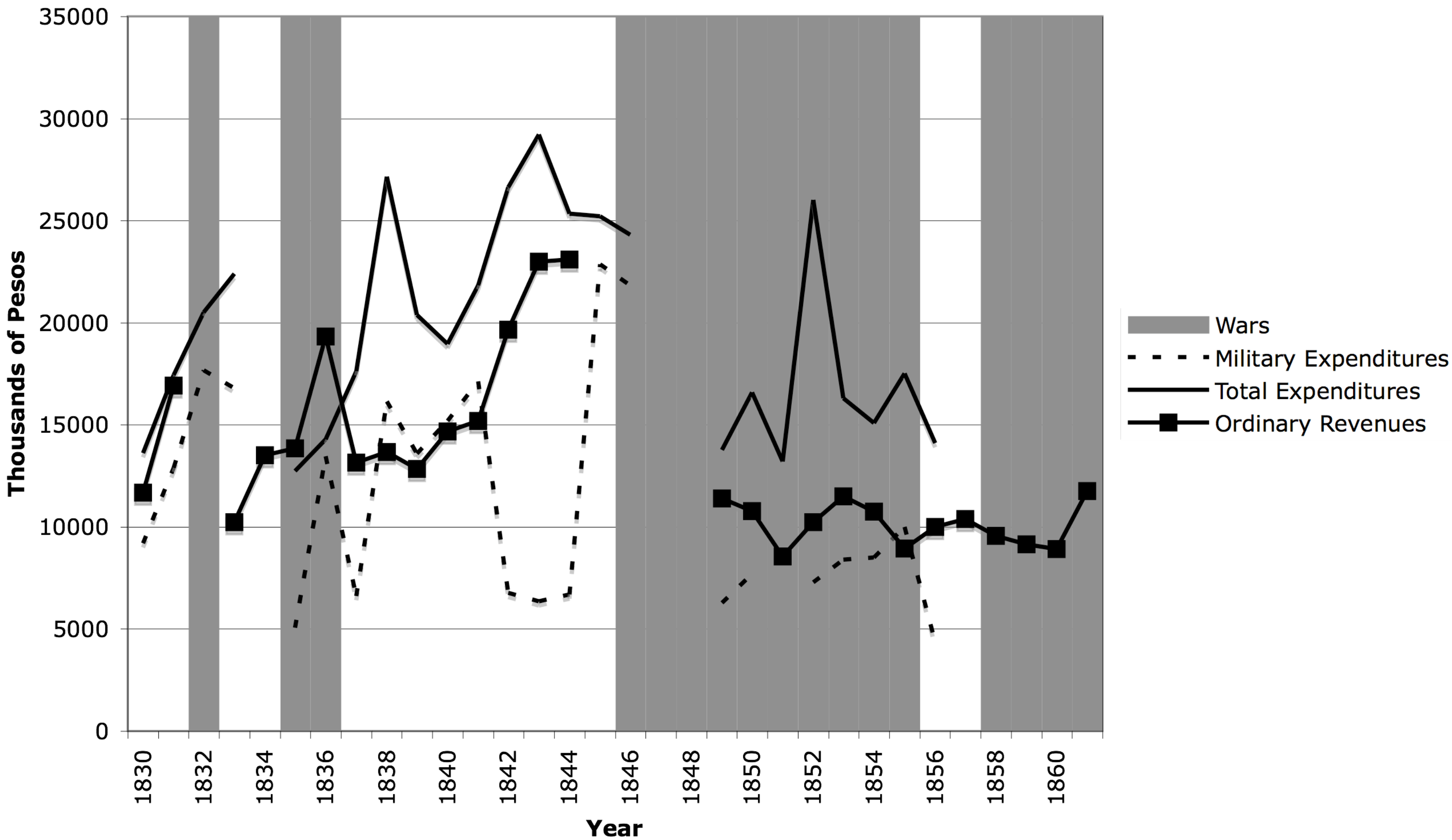


Figure 5
Venezuelan Fiscal History

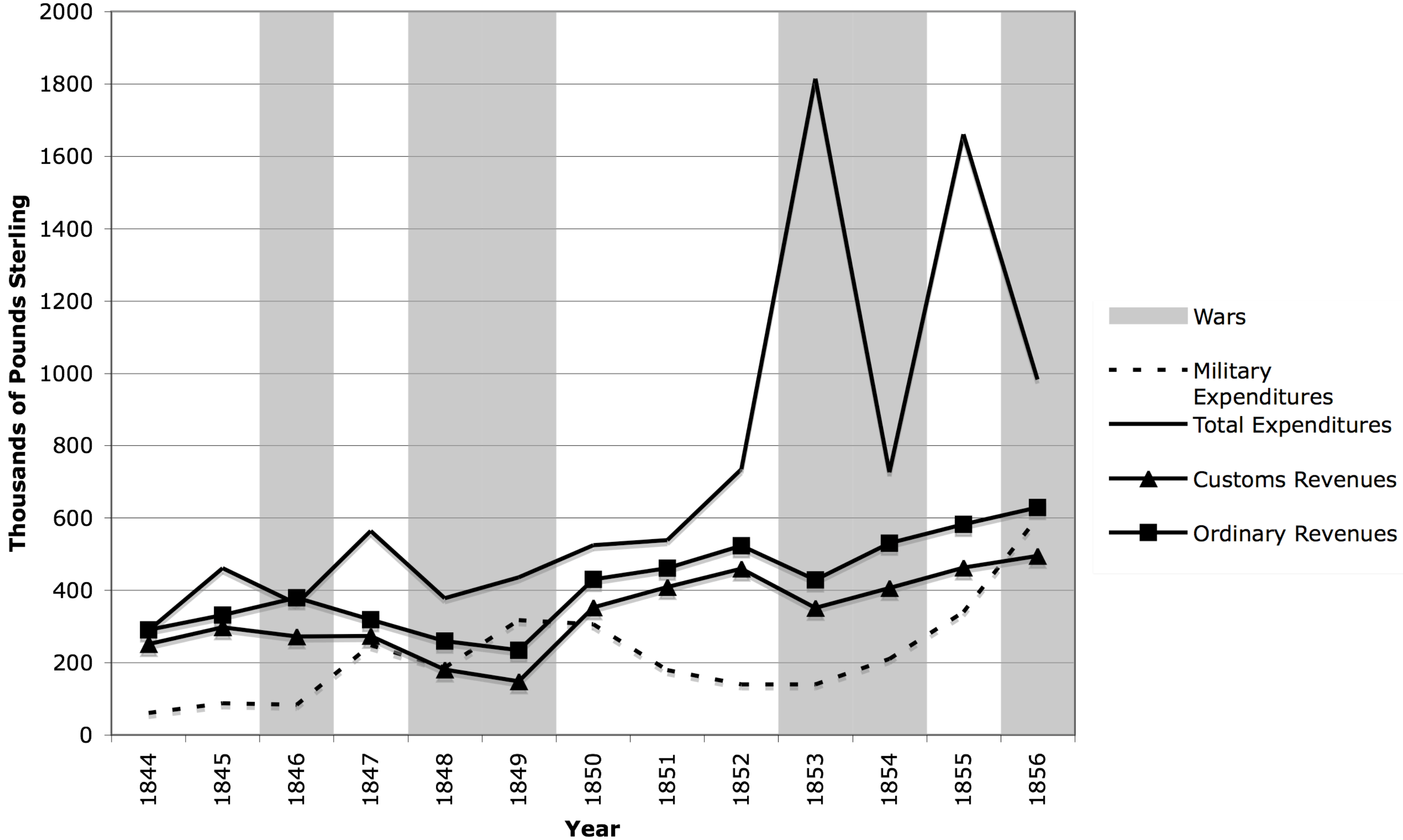


Figure 6
Chilean Fiscal History

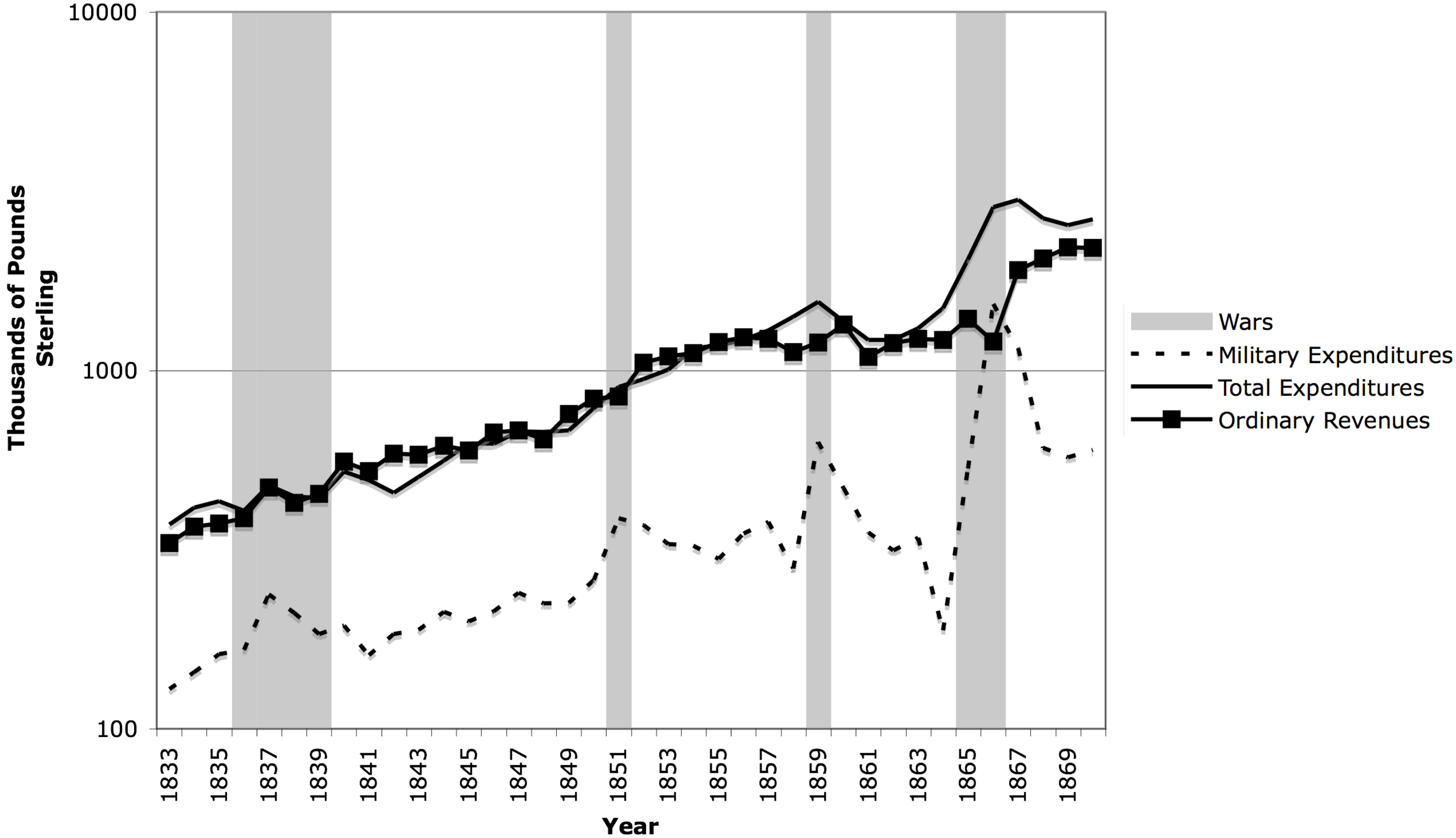


Figure 7
Mexican Yield Spreads

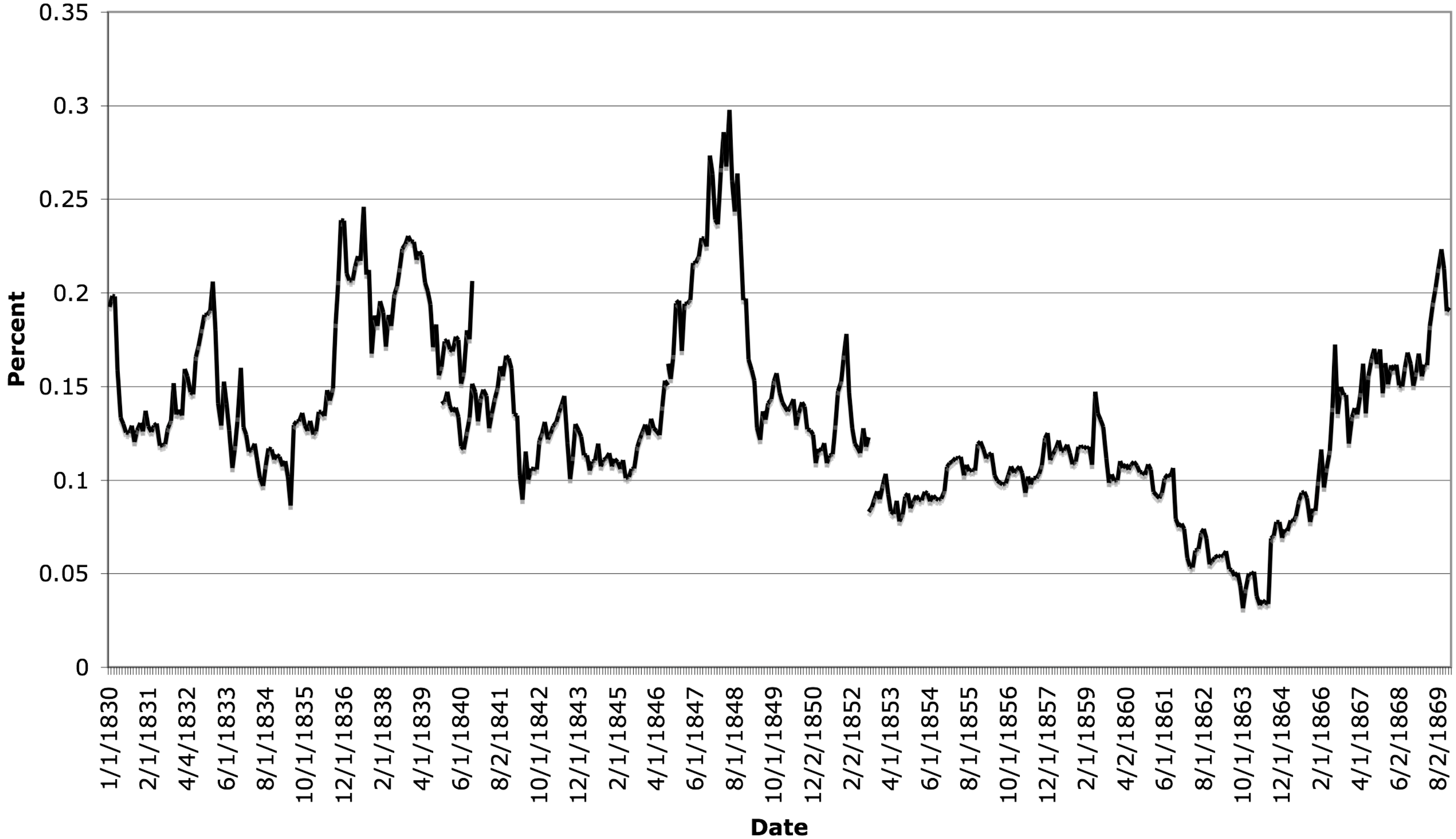
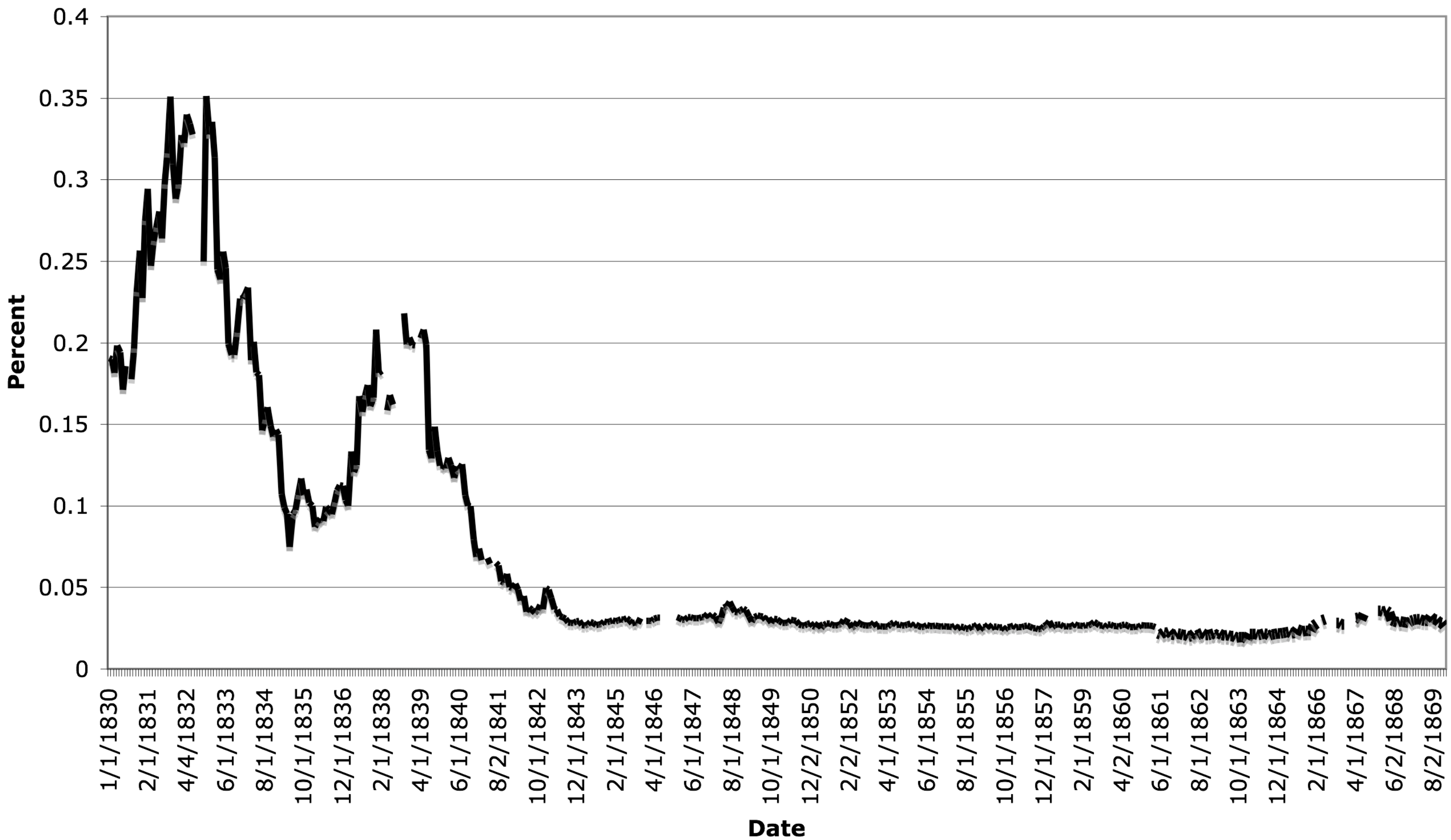


Figure 8
Chilean Yield Spreads



Appendix.

Table 1. Wars in Spanish America, 1825-1870

Country	Years of Conflict	Opponent(s)
Buenos Aires	*1825-**1828***	Brazil
	1828-1831	Civil
	1833-*1835*	Civil
	1837-1838	*Bolivia - Peru*
	1838-1852	Uruguay – European Allies - Civil
	1838-1839; 1845-1847	*France – United Kingdom*
	1859	Civil
	1861	Civil
	1863	Civil
	1865-1870	Paraguay
	1870-1871	Civil
Chile	1825-1826	Spain (Independence)
	1829-1830	Civil
	1836-1839	Peru – Bolivia
	1851	Civil
	1859	*Civil*
	1865-1866	Spain
Ecuador	*1825-1826*	*Spain in Peru*
	1828-1829	*Peru*
	1830-1832	*Gran Colombia*
	1833-1835	*Civil (Chihuahuas)*
	1845	*Civil*
	*1851-**1852***	*Civil*
	1858-1860	*Peru – Civil*
	1860	*Granadine Confederation*
	1863	United States of Colombia
	1864-1865	*Civil*
Mexico	*1827*	*Civil*
	1829	*Spain*
	1832	Civil
	1835-1836	Civil (Texas)
	1836-1843	*Civil and Texas*
	1838	*France*
	1844-1845	*Civil (Paredes-Santa Anna)*
	1846-1848	United States
	1847-1855	Civil (Caste)
	1854-1856	*Civil (Ayutla Revolt and Prelude to Reforma)*
	1857-1860	Civil (Reforma)
	1862-1867	France

New Granada / Granadine Confederation / United States of Colombia	*1825-1826*	*Spain in Peru*
	1828-1829	*Peru*
	1830-1832	*Gran Colombia*
	1839-1842	Civil
	1851	*Civil*
	1854	Civil
	1860-1862	Civil
	1863	Ecuador
Peru	*1825-1826*	*Spain (Independence)*
	1828-1829	*Gran Colombia*
	1834-1835	*Civil*
	1836-**1839**	Chile
	1841-1842	Bolivia
	1842-1844	*Civil*
	1853-1855	Civil
	1856-1858	Civil
	1858-1860	*Ecuador*
	1864-1866	Spain
	1867-1868	*Civil*
Venezuela	*1825-1826*	*Spain in Peru*
	1828-1829	*Peru*
	1831	*Civil*
	1835-1837	*Civil*
	1846	*Civil*
	1848-1849	*Civil*
	1859-1863	Civil (Federal)
	1868-1871	Civil

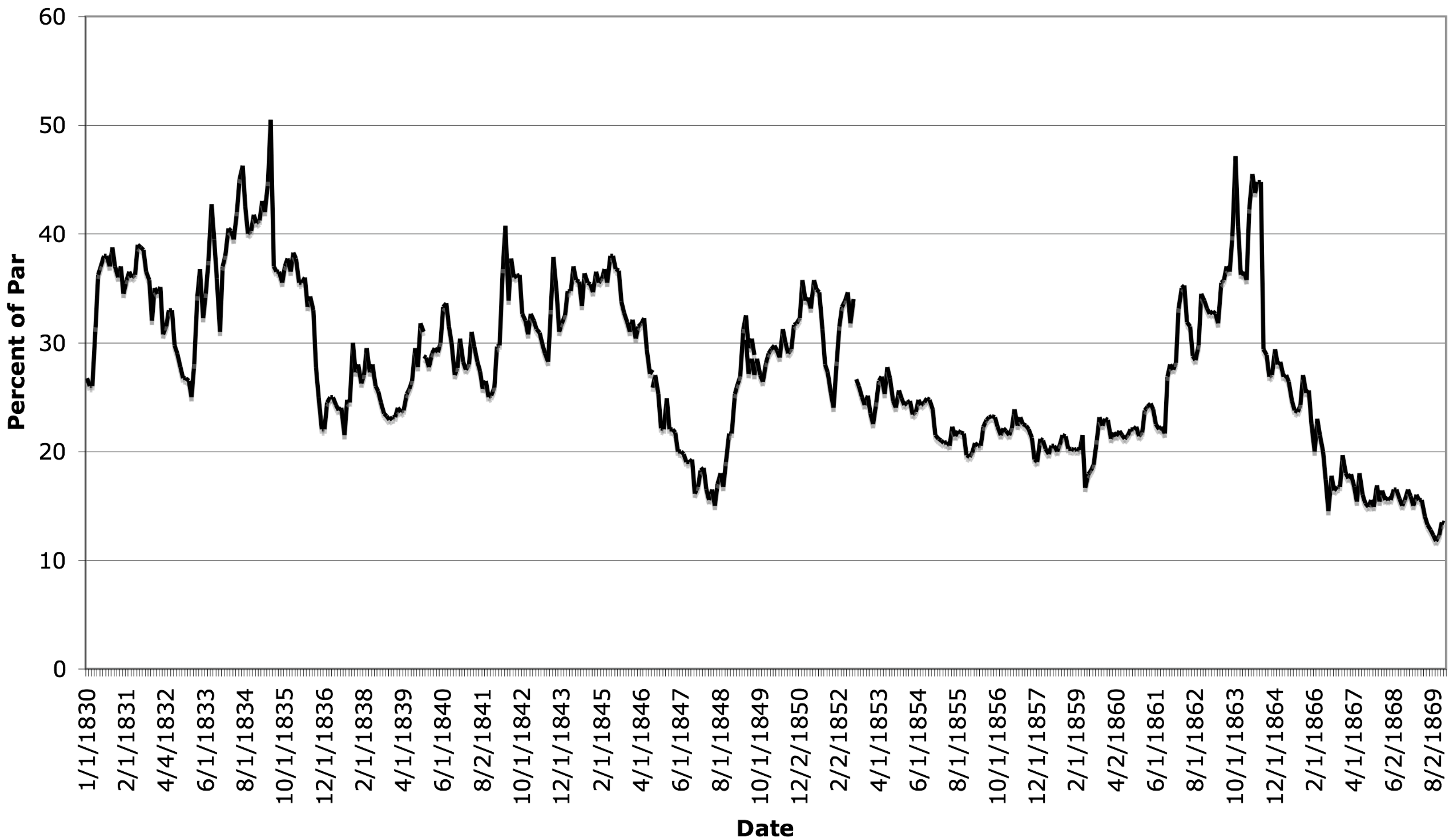
Sources: Gleditsch (2004), Scheina (2003), Bethell (1987).
Note: Italicized years and wars refer to differences between the two definitions of wars described in the text. Years in bold are an incomplete list of blockade years.

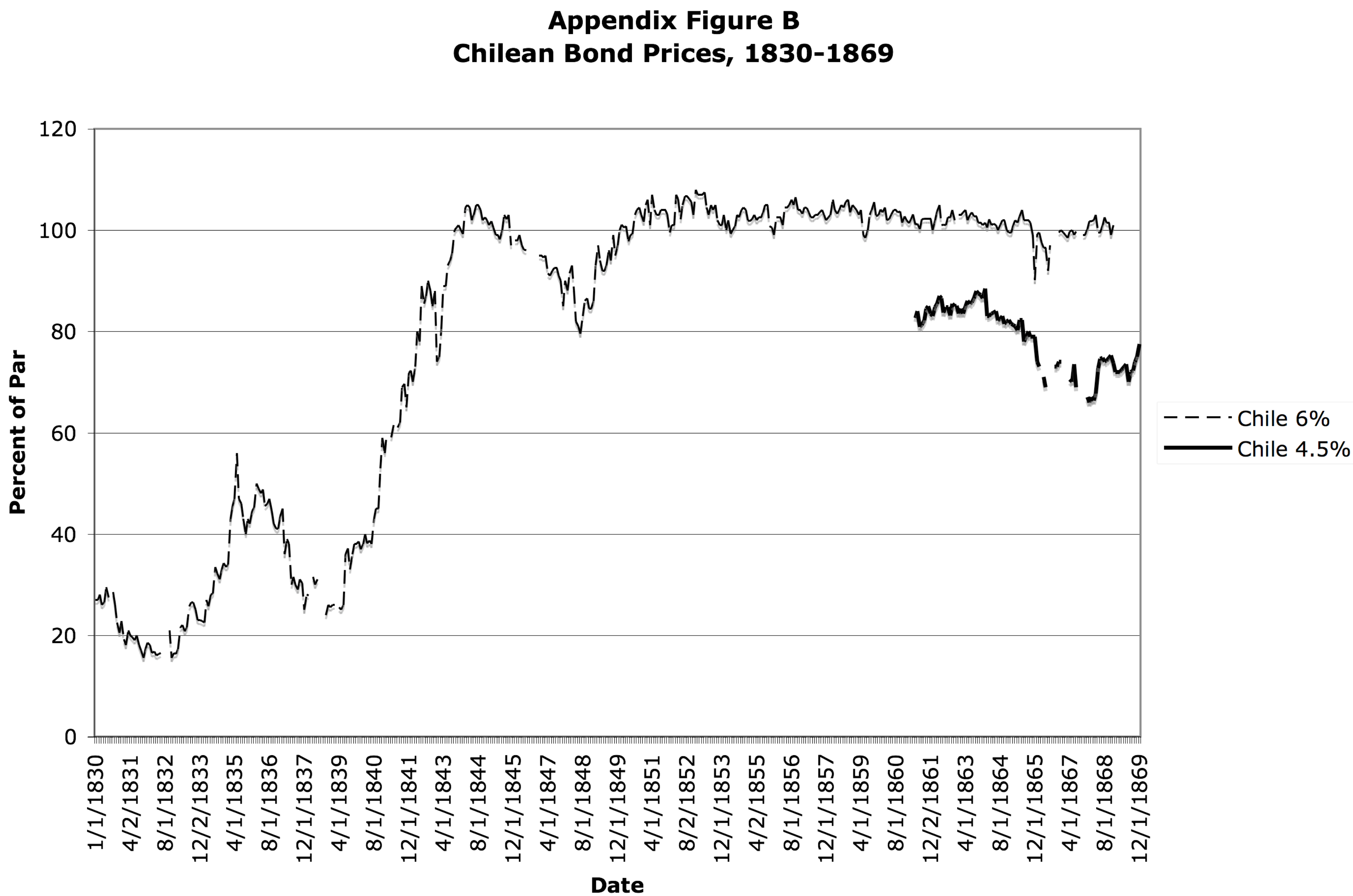
Table 2. New Lending to 1870.

Country	(1) Date of Loan	(2) Amount (pounds sterling)	(3) Interest Rate	(4) Issue Price	(5) Reason for Loan
Argentina	1866	500,000	6		War expenses
Argentina	1868	1,950,000	6	72.5	War expenses
Buenos Aires	1870	1,034,700	6	88	Railroads, port
Chile	1858	1,554,800	4.5	92	Railroads, general expenses
	1866	450,000	6	92.5	War
	1867	2,000,000	6	84	Conversion, war
	1867	626,700	7	92	War
	1870	1,012,700	5	83	
Colombia	1863	200,000	6		Railroad
Peru	1853	2,600,000	4.5		Conversion of external debt
	1854	1,800,000	4.5		Conversion of domestic debt
	1854	800,000			Conversion of domestic debt
	1854	400,000	4.5		Railroad
	1862	5,500,000	4.5	93	Conversion
	1865	10,000,000	5	83.5	Conversion, war expenses
	1869	290,000	5	70	Railroad
	1870	11,920,000	6	82.5	Railroads
Venezuela	1862	1,000,000	6	63	War expenses, old claims, interest in arrears on old debt, creation of Bank of Venezuela
	1864	1,500,000	6	60	Old claims, back pay to army, roads

Sources: Fenn's, Marichal, Platt, Rippy.
Notes: Venezuela issued an additional 210,000 pounds of 6% bonds in 1862 capitalizing the arrears on the interest accumulated to that date from the unsuccessful re-scheduling agreement of 1859.

Appendix Figure A.
Mexican Bond Prices, 1830-1869




Appendix Figure B
Chilean Bond Prices, 1830-1869
Percent of Par
120
100
80
60
40
20
0
1/1/1830
4/2/1831
8/1/1832
12/2/1833
4/1/1835
8/1/1836
12/1/1837
4/1/1839
8/1/1840
12/1/1841
4/1/1843
8/1/1844
12/1/1845
4/1/1847
8/1/1848
12/1/1849
4/1/1851
8/2/1852
12/1/1853
4/2/1855
8/1/1856
12/1/1857
4/1/1859
8/1/1860
12/2/1861
4/1/1863
8/1/1864
12/1/1865
4/1/1867
8/1/1868
12/1/1869
Date
Chile 6%
Chile 4.5%