# Securitization of Sovereign Debt: Corporations as a Sovereign Debt Restructuring Mechanism in Britain, 1694 to 1750*

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*Abstract*

This paper shows how Britain used privileged corporations to simultaneously securitize and restructure sovereign debt. Combining the sale of privileges with securitization allowed for multi-party acceptance of sovereign debt restructuring in an early emerging-market country. As a result, the Bank of England, the South Sea Company, and the East India Company came to hold 80 percent of the British national debt by 1720. After 1720, Britain dismantled securitization and moved debt to a standard bond market.

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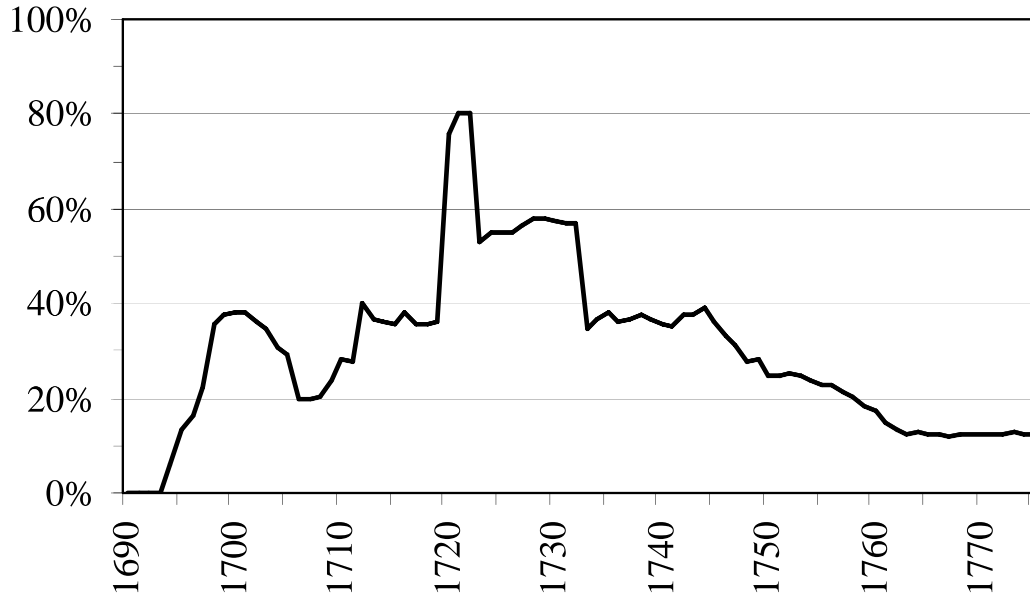
## 1. INTRODUCTION

In the 1690s, Britain was an emerging market nation with a sovereign debt structure that was hard to renegotiate. Structural inflexibility is typical of emerging markets, then and now, and it creates the challenge of how to restructure hard-to-restructure sovereign debt. An additional challenge for Britain was how to increase liquidity without necessarily making restructuring easier. Britain's atypical solution to this common problem was to restructure sovereign debt through a process recognizable in a modern sense as securitization. Corporations came to own sovereign debt while investors owned stock backed by the pool of debt, so stock became a type of asset-backed derivative. This paper explains how Britain gave all parties an incentive to restructure through corporate securitization.

Corporate ownership of British sovereign debt began with the founding of the Bank of England in 1694 and climaxed with the South Sea Bubble in 1720. The share of the British national debt held by the Bank of England, the East India Company, or the South Sea Company rose from zero in 1690 to 80 percent in 1720. Figure 1 presents this share as a time series from 1690 to 1775. The data presented in Figure 1 relies on both new calculations of total British national debt and the decomposition of that debt based on a variety of printed and archival sources.

Figure 1: Share of National Debt Held by the Bank of England, the East India Company and the South Sea Company.




Sources: The numerator is derived from British Parliamentary Paper (1898) for long-term debt held by the three companies. Short-term debt held by the Bank of England is derived from the Bank of England General ledgers, Dickson (1967), and Clark (2001). The denominator is derived from Mitchell (1962) for total short-term debt and Quinn (2004) for total long-term debt. In aggregate, the series agrees with Sussman and Yafeh (2006: 922). Observations are fiscal years, so 1700 ends September 1700.

To gain corporate acquiescence, Britain added grants of rent-generating privileges to the restructuring deals. While monopolies were not new, combining privileges with debt restructuring was. This paper finds that the combination of privileges, restructuring and securitization creates sufficient incentives for multi-party agreements. The sovereign gains concessions from creditors, corporations gain privileges from the sovereign, and investors gain improved liquidity and the proceeds from rents. Broz and Grossman (2004) consider the bilateral bargaining between the Bank of England and Britain over charter renewals. This paper expands the approach to include investors, debt

restructuring, multiple companies, and additional privileges in order explain why these multi-dimensional deals were feasible in a way that respected creditor rights and promoted sovereign credibility.

Once the overall share of national debt held by the three corporations reached 80 percent in 1720, Britain changed policy and unwound corporate ownership by incrementally moving debt to a standard bond market. Figure 1 shows the unwinding of securitization as a long decline in the share of national debt held by the three companies. This paper suggests that Britain moved to dismantle corporate ownership when it had achieved sufficient creditor concentration to resist new concessions

This paper first sets out a conceptual perspective on sovereign debt, its securitization, and the combination of privileges, restructuring, and securitization. The paper then arranges the British story within that framework. Viewed this way, the development of the structure of Britain's national debt follows the metaphor of a rocket. The securitization of sovereign debt acted as a booster that lifted the national debt out of a rigid debt structure. After its benefit was exhausted, Britain jettisoned securitization and moved the national debt into a bond market. Finally, escaping a brittle debt structure in a way that respected creditor rights reinforced Britain's improving credibility.

## 2. STRUCTURAL RIGIDITY

Emerging-market nations persistently create sovereign debt in *structurally rigid* forms such as short maturities, foreign-currency denominations or heterogeneous claims. Structural rigidity is a creditor response to the reality that sovereign immunity undermines the effectiveness of commitment devices like borrowing limits and creditor

seniority.[1] As a result of immunity, sovereign borrowing produces contracting externalities because new lenders do not internalize the debt dilution that they create for pre-existing creditors (Bolton and Oliver 2005; Borensztein, Chamon, Jeanne, Maura, and Zettelmeyer 2005: 15-22). The result is over-lending relative to a situation without the problem. Moreover, after the money is lent, collective action externalities impede the coordination of creditors for the monitoring of, negotiating with, or threatening of the sovereign debtor (Tirole 2002: 68-9).

The difficulty of collective action against a sovereign makes it hard for creditors to unite in response to a default, so lenders favor restrictive debt structures that discourage later renegotiation and increase default costs (Bolton and Olivier 2005: 4). For example, short-term lending creates the threat of a rollover crisis should the sovereign target a subset of creditors for selective default (Cole and Kehoe 2000; Borensztein, Chamon, Jeanne, Maura, and Zettelmeyer 2005: 14).

## 3. SECURITIZATION

Structural rigidities can also hamper liquidity, so Britain used corporate *securitization* of sovereign debt to improve liquidity while retaining a hard-to-restructure form.[2] Asset-backed securitization pools illiquid assets, gives ownership to a collective agent, and sells marketable securities backed by the pooled assets. The common version of securitization

[1] For example, see Bulow and Rogoff (1989: 156); Kletzer and Wright (2000: 621); Tirole (2002: 91).

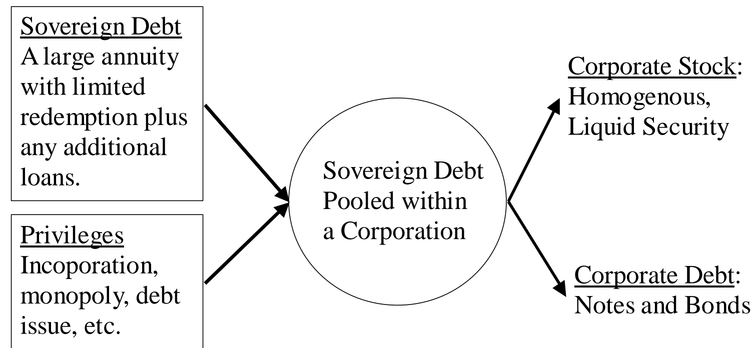
[2] Genoa created a similar sovereign debt securitization structure using the *Banco di San Giorgio* in 1407 (Fratianni and Spinelli 2006: 270). England had borrowed from companies in exchange for privileges during the Civil War (1642-49), but those loans were short-term, and some were never repaid (Coates 2004: 70-74).

is when a creditor pools receivables into a trust that sells claims on the pool to investors (Gorton and Souleles 2005: 14). In the British case, creditors pooled sovereign debt into a corporation, and the company sold stock backed by the pooled assets. Figure 2 offers a schematic of the situation. The combination allows sovereign debt to remain restricted while the investors' claim is liquid (Neal 2000).

Figure 2 also shows how a corporation could structure its obligations to create degrees of protection for investors. By issuing bonds and banknotes, a corporation created tranches: the senior claim was fixed-income debt, and the riskier residual claim was stock equity. The tranches worked because a corporation could credibly pledge seniority when Britain could not.[3] For the three privileged companies in the British story, corporate debt issues were statutorily limited, often to the level of backing sovereign debt, so bonds enjoyed some remoteness as an approximation of debt-backed security while stock was left as a privilege-backed security with liability for the company debt. The right to issue corporate debt was a privilege companies had to secure from Britain.

[3] For example, after the bubble of 1720, the South Sea Company funded its debt obligations by reluctantly selling £4 million of its long-term sovereign debt to the Bank of England (Dickson 1967: 178-80).

Figure 2. Corporate Securitization of Sovereign Debt




Source: See text.

*3.1 Privileges*

Figure 2 also shows that British securitization involved grants of rent-generating privileges that were also pooled inside a corporation.[4] Grants of privilege and securitization of sovereign debt do not require each other, and the entanglement of debt with rents contrasts sharply with modern securitization.[5] Modern sponsors of securitization create entities called Special Purpose Vehicles whose only purpose is to hold pooled assets and issue claims on those assets (Gorton and Souleles 2005: 2). Such remoteness protects the pool from problems, like bankruptcy, that the sponsor may later develop or vice versa. Combining privileges with debt sacrifices remoteness from the company's other businesses.

[4] See Broz and Grossman (2004) for a focus on the Bank of England.

[5] Before the 1690s, Britain granted privileges without requiring companies to own sovereign debt. In the 1690s, the Million Bank, a private corporation, offered creditors a debt-for-equity swap that securitized sovereign debt without any lucrative grants of privilege from Britain (Scott 1951: 275-87; Neal 1990: 51-2).

This approach treats privileges as another type of obligation sold by the sovereign (Maurer and Gomberg 2004: 1089). As with debt, the sovereign cannot fully contract away the possibility of later diluting privileges through the sale of new privileges or even revoking privileges, so corporations gained an interest in defending their privileges through hard-to-restructure arrangements.

Privileges are also idiosyncratic, so each company has a different relationship with the sovereign. The East India Company sought only charter renewals so as to continue its overseas trade. The South Sea Company never developed a trading operation, so pooling sovereign debt became the corporation's primary business. The South Sea Company sought to maintain its charter and expand its business by conducting new debt restructurings. As a bank, the Bank of England sought to maintain its charter and to contain rivals that included Britain's Exchequer.

### *3.2 Concessions*

*Concessions* formed another unusual aspect of British securitization. To borrow a phrase from Broz and Grossman (2004), stockholders "paid for the privilege" through debt concessions such as lower rates, longer maturities, etc. Besides being a form of payment, however, concessions helped counter default risk created by securitization. Again, a sovereign cannot credibly forswear future restructuring, so debtors consider, "the likelihood and probable outcome of future rescheduling negotiations (Bulow and Rogoff 1989: 156)." Corporate ownership exacerbates default risk, for replacing disparate investors with a corporation reduces the future cost of restructuring. In effect, the

corporation acts as a permanent collective action committee.[6] Concessions countered the default risk of relatively easy-to-renegotiate debt by putting the debt at the rear of Britain's implicit default queue.[7]

A default queue, however, requires a sovereign to segment default risk into a known hierarchy.[8] Eichengreen and Mody (2003) find that coordinating diverse types of debt is a substantial obstacle for emerging markets, and segmentation can be one response. While uncommon today, selective default has occurred in the past.[9] One cause has been differences in sanctions (Weidenmier 2005). In the British story, sanctions could explain a difference between debt explicitly authorized by Parliament and debt only backed the king.[10] Another cause of segmentation was that Britain routinely funded debt through the commitment of a specific revenue stream, so underperforming revenues delayed interest and maturity payments in their assigned debts. Securitization made each

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[6] For collective action clauses and commitees, see Weinschelbaum and Wynne (2005: 48). In contrast to *ad hoc* creditor committees, the British corporations were ongoing companies similar to the bondholders' organizations that proliferated in Europe after the creation of the British Corporation of Foreign Bondholders in 1868 (Esteves 2005).

[7] DeMarzo and Duffie (1999) show that in creditor sponsored securitization, banks can signal that assets are high quality by retaining the riskiest portion of the pool. That approach, however, does not work to change the incentives of a common debtor.

[8] The queue is implicit because the nature of sovereign common agency creates credibility problems that have remained unsurmounted (Borensztein, Chamon, Jeanne, Maura, and Zettelmeyer 2005: 4).

[9] Calomiris (1991) argues that the early U.S. intentionally segmented debts with the motive of segmenting creditors. While this paper does not make a similar motivational claim in the British story, the segments created by Britain's heterogeneous debt structure had a similar result.

[10] For example, the Stop of the Exchequer in 1672 was only for unfunded (royal) debt. Charles II chose not to disrupt debt backed explicitly by Parliament.

corporation a segment of debt with low restructuring costs relative to other segments, but concessions reduced the reward from restructuring the corporate debt.

In summary, British securitization of sovereign debt paid for rent-generating privileges with debt concessions. The privileges convinced corporations to pool hard-to-restructure sovereign debt, and investors claimed the pools using liquid stock. Corporate governance reduced renegotiation costs, and concessions reduced sovereign gains from restructuring relative to other segments of the national debt.

## 4. RESTRUCTURING

Segments of the national debt around 1700 suffered, in varying degrees, from being illiquid, inflexible, and inadequately funded. Such brittle debt structures promote crises by reducing the range of options between full performance and default. As a consequence, a desire to restructure debt often becomes a sovereign priority, and, in Britain's case, corporation securitization became the restructuring mechanism in part because securitization is scalable. A company can acquire differing types of sovereign debt or privileges without creating a new class of equity claim.[11]

[11] For example, the early Bank of England purchased large quantities of short-term sovereign debt, and, by March 1696, the Bank of England held £1.2 million in long-term debt and £1,562,000 in short-term debt (The Bank of England *General Ledger 1*, folios 197-8).

The mechanism was to combine debt restructuring with a debt-for-equity swap. To integrate the incentives, this section adds restructuring concessions and grants of privileges to current thinking on securitization. The result expands the number of elements and the number of parties to consider when examining if all parties gain from participation in a securitization-restructuring operation.

*4.1 The Creditors*

DeMarzo (2005) points out that creditors in standard securitization schemes already balance the gains of risk diversification (D) and increased liquidity (L) created by pooling against the destruction of asset-specific information (I) that is also caused by pooling.[12] In effect, the net benefit of securitization to a creditor can be described as $D + L - I$ .

Restructuring introduces concessions (C) from each creditor, such as changes in rate or maturity. The concessions, of course, are the government's purpose for proposing a restructuring. The privileged nature of the British process also brings each creditor a share (S) of the corporation's other enterprises.

While default can cause restructuring, restructuring can also reduce future default risk. When default is a prolongation, the risk of a stronger default, such as repudiation, can be reduced by moving to a less burdensome debt structure. Restructuring also creates a spillover by improving the sovereign's overall position for all creditors. Let R be the expected value to a creditor of the potential decrease in post-restructuring default risk.

The constraint for voluntary creditor participation in a restructuring-securitization scheme becomes $(D + L - I) + (S - C) + R > 0$.

[12]The importance of diversification and asset-specific information, however, will depend

*4.2 The Corporation*

Securitization also requires the participation of a corporation. Securitization dilutes existing equity claims to corporate rents, so Britain awarded a corporation privileges of expected value P to compensate for the dilution of corporations rents. In other words, $P > \Sigma S$ over all new equity holders.

*4.3 The Sovereign*

For a restructuring-securitization operation to be offered, Britain had to find the deal attractive enough to sanction. For the sovereign, the sum of concessions by creditors needs to exceed the value of the privilege, or $\Sigma C > P$ . This paper will not attempt to map the political opportunity cost of granting privileges into pounds sterling, but viewing Britain's surplus as concessions less granted privileges makes the conceptual point that Britain disliked granting privileges and desired concessions.

*4.4 The Combination*

Putting the corporate and sovereign incentives together gives $\Sigma C > P > \Sigma S$ , meaning that the amount of privileges were bounded and total debt concession needed to exceed total new rent claims.

For a representative creditor, the overall constraint on privilege creation means that a new share's claim on rents (S) would be less than the concession amount (C), so $(S - C)$ is a negative term. If the remaining elements more than compensate, particularly

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on the heterogeneity of the sovereign debt restructured.

improved liquidity (L) and reduced default risk (R), then the intersection of corporate securitization and sovereign debt restructuring can give all parties an incentive to participate. Indeed, a debt-for-equity swap can work for creditors without the sovereign having to threaten default (R=0) if gains in liquidity are sufficient.

## 5. THE SECURITIZATION OF BRITAIN'S DEBT

The lack of an effective commitment mechanism limited British sovereign borrowing during the second half of the seventeenth century to anticipations of imminent tax revenues, and, even then, the debt carried a risk premium (Chandaman 1975).[13] Sovereign defaults occurred in 1653 and 1672 (Coates 2004: 69, Horsefield 1982). North and Weingast (1989) argue that the constitutional changes following the Glorious Revolution of 1688 increased the fiscal credibility of the British state, and sovereign borrowing certainly increased after 1688. The British national debt increased from £3 million in 1690 to £45 million at the end of the War of Spanish Succession in 1713, yet the structure of the debt was inflexible. The Nine Years War (1689 to 1697) ended with 78 percent of the national debt being short-term. During the War of Spanish Succession (1702 to 1713); long-term annuities often replaced short-term borrowing, but the annuities were also inflexible. The annuities lacked a redemption clause, so creditors could decline restructuring offers they found disadvantageous.

[13] For an assessment of the modern situation, see Borensztein, Chamon, Jeanne, Maura, and Zettelmeyer (2005: 3).

Scholars have debated the beginnings and causes of England's road to fiscal credibility, and untangling these perspectives is beyond the scope of this paper.[14] Instead, the analysis proceeds with the assumption that Britain entered an era of middling credibility: enough credibility to borrow extensively but not enough to make restructuring a moot point.[15] An implication of this starting point will be that Britain's process of sovereign debt restructuring contributed to the larger process of establishing fiscal credibility.

For example, most British short-term debt was in the form of advances on particular tax revenues for particular years. Within each such debt issue, Britain numbered individual loans and pledged to repay them in sequence. Such specificity created heterogeneity. Instead of secondary markets, specialist intermediaries like goldsmith-bankers would pool sovereign debts, so investors gained liquidity by holding deposits rather than the sovereign debt itself (Neal 1990: 12-16).

Much of Britain's early long-term debt also lacked liquidity, for Britain initially followed an old strain of Dutch practice in offering life and term annuities that often lacked the homogeneity or convenient transfer needed to support a deep secondary market (Tracy 1985: 13-70, Sussman and Yafeh 2006). By 1690, Holland had already moved on to a more flexible sovereign debt system commensurate with its established credibility wherein short-term debts were rolled over or prolonged (Fritschy 2003). Still,

[14] Brewer (1988) and O'Brien (2005) focus on taxation. Stasavage (2003) focuses on the ascendancy of the Whig party. Klerman and Mahoney (2005) focus on the rise of an independent judiciary. Issues of timing are considered in Wells and Wills (2000), Clark (2001), Quinn (2001), and Sussman and Yafeh (2006).

[15] Eichengreen (2003) finds that structural inflexibility is not an issue when credibility becomes sufficiently high.

the Dutch system led to no deep secondary market, for investors could await near-term maturation or redeem on demand if the debt was past term.

The Dutch did not provide Britain a template for liquid sovereign debt, but hard-to-restructure debt does not necessitate illiquidity either, so Britain experimented. The Million Lottery of 1694 created liquidity by creating many, small-denomination, homogeneous lottery tickets. Renegotiation was made difficult because the tickets had no redemption clause and, "the holders of lottery tickets were too large and too diverse a group to facilitate easy renegotiation (Murphy 2005: 233)". Lottery tickets quickly developed a deep secondary market (Murphy 2005: 232-3; and Murphy 2007: 207, 215).

### *5.1 Securitization*

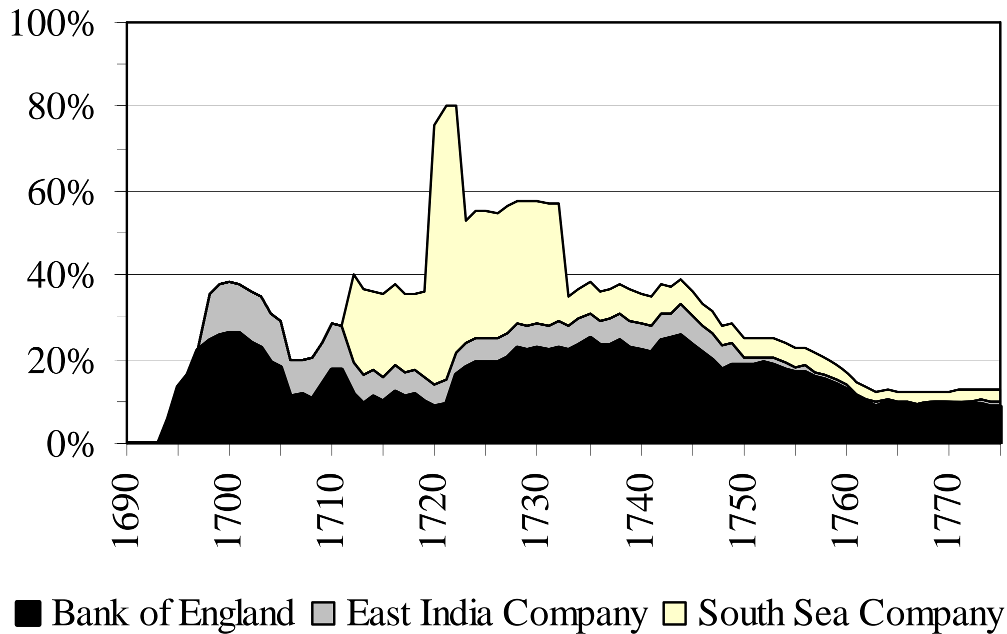
Britain's other experiment in 1694 was the Bank of England. The famous scheme had investors purchase stock through an initial public offering while the Bank of England lent the funds to Britain.[16] The sovereign debt granted to the Bank of England was inflexible, for it would not become redeemable until 1705, and it would then require a year's notice, and even then redemption would require the dissolution of the bank. A secondary market for Bank of England stock developed quickly (Dickson 1967: 529). As a privilege, the Bank of England received the right to incorporate as the only corporate bank in England. In return, Britain paid the Bank of England the then low rate of 8 percent. Once established, the Bank of England issued debt in the form of notes and bonds, so the corporation was able to offer a tranche of obligations senior to stock.

[16]The Dutch had pioneered liquid corporate equity in the early 1600s, but they did not mix corporations and sovereign debt (Gelderblom and Jonker 2004).

Securitization moved to the New East India Company in 1698, for the company lent Britain £2 million at 8 percent in exchange for a new charter and trading rights. As with the Bank of England, Britain could not redeem the debt until the charter expired. Ten years later, the East India Company lent £1.2 million at zero interest for an extension of its charter and rights (Scott 1968: 191).[17] The roles played by the Bank of England and the East India Company up to 1710 can be seen in Figure 3. Figure 3 breaks down Figure 1 by company. After 1710, however, Britain largely stopped using securitization to place new debt issues. Instead, securitization became a means to restructure existing debt. Britain learned how to use debt-for-equity swaps to restructure sovereign debt in 1697, and the process became substantial in 1711 with the addition of the South Sea Company.

[17] In 1709, the Bank of England lent £400,000 for an extension of its charter and rights.

Figure 3. Share of National Debt Held by Each Company




Source: See Figure 1.

*5.2 Restructure Defaults*

By the end of Nine Years War in early 1697, Britain was caught in a rollover crisis. The short-term debt stood at 275 percent of annual government income and was in arrears.[18] In early 1697, short-term debts sold at discounts ranging from 40 to 60 percent.[19] An effort to issue long-term debt via a lottery in April 1697 failed, for Britain was already

[18] Calculated from British Parliamentary Papers (1868-9: 14).

[19] Discount rate derived from the Pawn Account of Francis Child in the archives of the Royal Bank of Scotland, London. Scott (1951: 209) reports a 40 percent discount.

delinquent on payments to creditors of the 1694 lottery (Murphy 2007: 6).[20] Britain needed to restructure hard-to-restructure debt.

In response, Britain and the Bank of England agreed to a debt-for-equity swap in 1697. Creditors tendered £784,449 in short-term debt in exchange for new stock, and the engrafted debt was restructured into a long-term form.[21] To entice the bank's proprietors to dilute the value of existing shares, the Bank of England received extended privileges and debt concessions.[22] The swap converted 7.5 percent of the outstanding short-term debt into long-term debt. This, along with other measures, increased confidence in Britain's fiscal situation. From the time of striking the deal in early 1697 to the conducting of the debt-for-equity swap in June 1697, the discount on short-term debt fell to 30 percent.[23] In the second half of 1697, the discount on short-term government debt fell to 17 percent, and by 1700 the discount merged with that of private rates (Quinn 2001: 604).

The next roll-over crisis struck in 1710 during the next war (the War of Spanish Succession, 1702-1713). At this time, both the Bank of England and the East India Company had the rent protections they desired, so the two companies had little interest in new securitization (Scott 1951: 293). In response, Britain authorized the creation of a

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[20] The failure of a new lottery in 1697 brought a decade hiatus to new state lotteries.

[21] The Bank of England also restructured £200,233 in debt that the bank held. These amounts are derived from the Bank of England *General Ledger 1* (ADM 7/1), folios 362-79, 387-97, 414-5, 421-38.

[22] Parliament extended the Bank of England's charter to 1710 and pledged to not charter any other bank. Also, forgery of Bank of England notes became a capital offense, and the returns on the short-term debts the Bank of England did absorb were increased from 6 to 8 percent.

[23] Discount rates derived from the lending accounts of Sir Francis Child, Royal Bank of

new corporation called the South Sea Company. The new company was a policy shift that followed the Tory party's victory in the election of 1710 (Stasavage 2005: 8-9). The Bank of England was closely associated with the Whig party, and the Tory government was keen to create an alternative corporate supplier of debt restructuring (Scott 1951: 296).

The result was the founding of the South Sea Company through a restructuring-debt-for-equity swap in 1711. The mechanism was similar to the Bank of England's in 1697, but the scale was much larger. Creditors voluntarily converted a variety of short-term debts, and their arrears, totaling £9.1 million into South Sea Company stock. Although the South Sea Company's charter included a monopoly on trade with the South Atlantic, the prospects for profitable trade were remote, so the primary allure of the stock to creditors was increased liquidity and reduced default risk (Scott 1951: 297-8). As a result, the South Sea Company came to own more British debt then the Bank of England and the East India Company combined. With restructuring, the share of national debt held by the three companies (Figure 3) climbed to 40 percent in 1711.

### *5.3 Restructuring Without Default*

With securitization, incentives for a restructuring can work without a threat of default. Britain entered such an era after the War of Spanish Succession ended in 1713 and the Hanoverian succession occurred in 1714. British borrowing rates declined, a Whig majority ascended, and no segment of the national debt flirted with arrears. Sussman and Yafeh (2005) find these years to be a turning point in overall rates paid by Britain to

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Scotland Archives, London.

service the national debt, and British annual payments decreased because of a series of successful restructurings that did not involve a threat of default.

Instead, the process relied on corporate coordination of creditors. When creditors became stockholders, they became represented by officers, and this leadership structure reduced Britain's renegotiation costs.[24] Acceptance of a restructuring plan required only a majority of the company's General Court of Proprietors, so holdouts were circumvented. Moreover, voting rights required minimum stock levels, so many stockholders were disenfranchised. For the Bank of England and the East India Company, a person had to own at least £500 in par value stock to gain a vote (Scott 1951: 204; Scott 1968a: 180). As a result, 34.9 percent of subscribers at the Bank of England's inception did not have a vote in the General Court (Dickson 1967: 255). In 1725, 26.6 percent of Bank of England stockholders did not clear the voting threshold, and, in 1753, 21.5 percent still held less that £500.[25]

Despite being composed of mostly small investors, the South Sea Company's minimum voting requirement was £1,000 (Dickson 1967: 273). Carlos, Neal and Wandschneider (2005: 22, 26) find that 80 percent of South Sea Company stockholders had no vote in the General Court in 1723. Power was even more concentrated than that because increased amounts of stock let a person have 2, 3, or even 4 votes. In effect, minorities in each company could negotiate and commit a corporation to a restructuring. Securitization became a debt restructuring mechanism with the unintended consequence

[24] Scott 1951: 204, 254; Clapham 1958: 108-9; Hennessy 1995: 185.

[25] The 1725 share is from Carlos, Neal and Wandschneider (2005: 21), and the 1753 share is from Dickson (1967: 275). Also, Dickson (1967: 255, 275) finds that the non-voting share of owners was 42.3 percent in 1697 and 24 percent in 1724.

of creating creditor coordination rather than the recent focus on the reverse: mechanisms to create creditor coordination so as to promote restructuring.[26]

When Britain desired to restructure debt that paid 6 percent and had a par redemption clause, Britain targeted the companies, for the South Sea Company and the Bank of England owned over half of the £21.3 million in question.[27] In 1717, both companies agreed to reduce rates to 5 percent.[28] A twist was that Britain also used the two companies to undermine any potential creditor boycott. As part of the deals, the two companies pledged a £4.5 million line of credit that Britain could use to buy out individual creditors who did not agree to restructure their debt to 5 percent.[29] With this threat, the restructuring of individual investors was wildly successful as all but six persons agreed to convert, and the lines of credit were never used. The corporations certainly facilitated restructuring, and, although redemption was threatened, default never was.

Next, Britain targeted debts that had no redemption clause. In 1719, a debt-for-equity plus restructuring operation saw individual creditors agree to swap debt totaling

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[26] See Krueger 2002 and Eichengreen 2003.

[27] Of the total, £9,534,358 was held by the public, £10 million was held by the South Sea Company, and £1,775,028 was held by the Bank of England. The amount held by the Bank of England restructured was itself created when the Bank of England restructured an earlier batch of Exchequer bills in 1709.

[28] In return, Britain undid the redemption clause on the South Sea Company's debt until 1723 and thereafter Britain could not redeem more than £1 million per quarter (Grellier 1971: 102). The Bank of England's privilege was the ability to restructure £2 million in Exchequer bills paying 6 percent into long-term debt paying 5 percent.

[29] The division was £2.5 million from the Bank of England and £2 million from the South Sea Company (Grellier 1810: 101-2).

£94,330 per year for 24 years (expiring in September 1742) into South Sea Company shares backed by a perpetual debt of £54,249 per year owed to the company.[30] Participating creditors conceded 5 to 10 percent in market value for no apparent gain other than liquidity.[31] The only privilege the South Sea Company gained was the expansion of its capital, and even then the deal obliged the company to lend part of that to Britain.[32] The reason such a minimal grant of privilege did not violate the $P > \Sigma S$ incentive constraint was that the South Sea Company had no rents to dilute. By 1719, it was obvious that the South Sea Company had no commercial prospects.

## 6. PRIVILEGE DILUTION

The metamorphosis of the South Sea Company into a debt holding company, something far closer to a modern Special Purpose Vehicle than were the Bank of England or the East India Company, underscores the differing nature of the privileges enjoyed by each company.

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[30] The payments to the South Sea Company were given a principal of £1,084,975 using a rate of 5 percent (Dickson 1967, 89).

[31] About two-thirds of eligible creditors offered up their annuities at a conversion price of 11.5 years purchase in par stock, so an annuity of £100 per annum bought £1,150 in par South Sea Stock. On May 30, 1719, South Sea Stock sold at £114.875 per £100 par stock (Neal 1990: 234), so the market value of the £100 per annum annuity converted into stock is £1,322.5. The same annuity's market price was 14 years purchase in September 1718 and 14 5/8 years purchase in September 1719 (Castaing’s *Course of the Exchange*). Creditors gave up an annuity worth £1,400 to £1,463 for £1,322.5 in stock: a 5 percent to 10 percent concession.

[32] The South Sea Company lent £544,142 that was added to the company's permanent debt paying 5 percent (Dickson 1967, 89).

*6.1 East India Company*

The East India Company seemingly had no interest in privileges beyond its charter. As already mentioned, the East India Company lent at low rates to Britain to acquire charter extensions in 1698 and 1708. In 1730, the East India Company accepted a rate reduction and paid Britain £200,000 in cash for a charter extension, and the next charter renewal agreement in 1744 required a £1 million loan at 3 percent.[33] The East India Company never participated in a restructuring although Britain did use the money raised from the East India Company to redeem existing debts.

*6.2 Bank of England*

In contrast, the Bank of England's privileges brought an ongoing, occasionally tense, relationship with the British government. For example, just two years after creating the Bank of England, Britain authorized the Land Bank in 1696. The Land Bank was an instant failure, but Parliament intended it to compete with the Bank of England, and, if successful, the Land Bank would have reduced the Bank of England's rents (Rubini 1970: 700-2). Later, Britain did not stop the South Sea Company from using a closely-held partnership called the Sword Blade Company to circumvent the Bank of England's monopoly on corporate banking.

Protecting privileges, however, could require more than the occasional act of Parliament. For example, sovereign debt threatened the Bank of England's privileges when it created a rival to the banknote. Exchequer bills were similar to a banknote: easily

[33] See British Parliamentary Papers (1898: 56) and Dickson (1967: 205, 217).

transferable and in denominations starting at £5 (Dickson 1967: 368-73). Exchequer bills were not payable on demand, so Britain hired syndicates to supply limited par acceptance. Dickson concludes that Exchequer bills, "changed hands as freely as bank-notes (1967: 372)." In 1707, the Bank of England outbid the private syndicates to gain management of Exchequer bills, but the Bank of England also demanded the end of £5 and £10 (low denomination) bills that most rivaled Bank of England notes (Dickson 1967: 373). Over the next 10 years, the Bank of England used that control to keep 40 percent of all Exchequer bills out of circulation.[34] After 1720, the Bank of England and Britain fell into a steady understanding that the bank would facilitate Britain's issuance of new long-term debt while the bank quarantined Britain's issuance of short-term debt.

*6.3 The South Sea Bubble*

The final expansion of securitization in 1720 was an extension of the South Sea Company's emerging nature as a holding company. In this case, the South Sea Company agreed to *pay Britain* for the right to conduct a large debt-for-equity restructuring. This reversal only fits the incentive structure of this paper if a large potential restructuring of privileges was also in the air.[35] At the time, John Law had consolidated France's sovereign debt, monopolies, and tax collection into one super-holding company, so

[34] Sequestering Exchequer bills was expensive because they paid a low marginal rate of return. For the 1707 Exchequer bills, the Bank of England received no marginal return for holding them. From 1709 to 1717, the marginal rate was 2 pence per day (3.04 percent per annum), and then it was reduced to 1 pence per day (Dickson 1967: 378). The 40 percent figure is for the years 1707 to 1717 and is derived from total Exchequer bills from Dickson (1967: 377, 383, and 526-7) with gaps filled from the holdings of Exchequer bills in Bank of England annual balances found in the Bank of England General Ledgers held by the Archives of the Bank of England, London.

investors could extrapolate how the South Sea Company could become a super-company if Britain chose to take the concentration of securitization and privileges to their logical extreme. (Dickson 1967; Velde 2007). The high stakes, even if an unlikely outcome, can help explain why the Bank of England vigorously bid for the opportunity once Britain to sanctioned the scheme (Dickson 1967: 99-100).[36]

In execution, the operation became the infamous South Sea Bubble.[37] The allure for creditors should have hinged on the swap price, but many creditors agreed to an April 1720 swap without the South Sea Company having announced a swap price (Dickson 1967: 130-1). A debate persists over how rational creditors were.[38] While not dismissing irrational exuberance, the French bubble did not implode until the bankruptcy of John Law's *Banque Royale* in July 1720 (Neal 1990: 70). Until then, the French experience offered hope for holders of South Sea Company stock.

Regardless of motivation, creditors voluntarily swapped 80 percent of the available debt for stock in 1720. Returning to Figure 3, the South Sea Company now held

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[35] The South Sea Company suggested that Britain violate the Bank of England's charter and strip the bank of its sovereign debt. The South Sea Company also challenged the Bank of England's containment of Exchequer bills (Dickson 1967: 521).

[36] The South Sea Company would pay 4½ years purchase of all irredeemables swapped plus 1 year purchase on long irredeemables (96 year and 99 year annuities) not swapped.

[37] The bidding ended with the South Sea Company pledging to pay the government £4.16 million plus a sum dependent on the amount of debt swapped. Also, the South Sea Company agreed to lower the rate on all its long-term debt from 5 percent to 4 percent in 1727. With the collective action properties highlighted in this paper, the South Sea Company's leadership transformed the restructuring opportunity into a ponzi scheme wherein company cash was used to bolster speculative demand for new stock offerings.

[38] See Neal 1990, Dale 2004, Temin and Voth 2004.

65 percent of the national debt, and the other two companies accounted for 15 percent. Britain had reached the top of its securitization arc.

## 7. WHY SECURITIZATION?

Explaining how the combination of restructuring and securitization satisfied creditors, corporations, and the sovereign leaves unanswered *why* Britain favored corporate intermediation. Why include a corporation when Britain could gain concessions by directly offering debt with better default risk (R) or improved liquidity (L)? Initially, Britain did conduct direct restructuring operations. From 1695 through 1700, creditors could convert, for a fee, life annuities into 96-year term annuities.[39] After the Bank of England debt-for-equity swap in 1697, however, securitization dominated until 1720.

The strongest answer appears to be that stock was more liquid than annuities (Neal 2000). From the opening of the Bank of England through 1720, the stock market grew deep, and Carlos and Neal (2006) detail how sophisticated stock brokering and dealing (jobbing) became. Also, a vibrant financial press kept investors informed of price fluctuations. In contrast, Castaing's *Course of the Exchange* did not begin to report prices for British annuities until 1714 despite continuously reporting Bank of England stock prices and South Sea Company stock prices since their respective initial public offerings in 1694 and 1711. Sovereign debt did not begin to gain liquidity similar to stock until 1715 when Britain used the Bank of England to issue and administer perpetual annuities with the same technology as the bank used to issue and administer corporate

[39] The life annuities were particularly heterogeneous, so the conversion had liquidity-enhancing and risk-reducing value for creditors. Britain was able to attract participation at the reasonably low yields of around 6 to 7 percent.

stock. Sovereign debt's mimicry of equity extended to contemporaries calling British annuities "stock."

Britain might also have preferred securitization if restructuring into corporate ownership improved default risk (R) more than individual ownership of the same debt could. Did corporate ownership create a commitment mechanism that increased the cost to Britain of default? Scholars have suggested that a corporation, especially the Bank of England, might coordinate creditors after a default into a credible boycott threat.[40] The mechanism, however, is hard to delineate. Up to 1720, the Bank of England was neither the dominant debt holder nor debt administrator. Indeed, in 1717, Britain used the Bank of England and the South Sea Company to undermine creditor resistance.

A different reason, consistent with this analysis, is that selling privileges might have made the corporations more accommodating to later expansion of sovereign borrowing (debt dilution). Companies increased their ownership of sovereign debt and began to administer the direct issuance of new sovereign debt to the public. All three companies became important coordinators of investors for initial public offerings of sovereign debt (Sutherland 1946: 19).

## 8. THE UNWINDING

In 1720, the South Sea Company became a debt Goliath, and creditors suddenly had sufficient concentration to turn corporate coordination from a vulnerability into a strength. Corporate ownership winnowed the number of major creditors and increased

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[40] See Weingast 1997: 230; Broz 1998: 232; Wells and Wills 2000: 422; and Stasavage 2002: 157.

the feasibility of a successful boycott. Haldane, Penalver, Saporta, and Shin (2005: 327) make the point that creditors and debtors may agree to coordinate creditors in order to reduce negotiating costs but disagree on the desired effectiveness of collective creditor resistance. By accident, the British created the modern policy goal of, "institutional design that is more renegotiation-friendly without being borrower-friendly (Esteves 2005: 4)."[41] Resisting uncompensated concessions is a type of credit boycott, and its viability follows because a pre-default boycott of a restructuring offer asks creditors to retain the attractive terms they already have.[42]

After 1720, the arc of corporate ownership begins to fall as Britain started to unwind securitization. Foremost, Britain moved to reduce the share of long-term debt held by the South Sea Company. In 1723, the South Sea Company agreed to have half of its stock converted into individually owned annuities. Equity holders favored the proposal because it created remoteness from the South Sea Company by moving returns from dividends to a fixed-return asset without any loss of liquidity or dissipation of corporate rents (because there were none). The change, however, did make the debt redeemable without prior notice, and, in 1733, the South Sea Company restructured most of the remaining stock into annuities. The 1723 and 1733 changes are clearly visible in Figure

[41] For example, the coordination services of the Paris Club, used by foreign governments, is conditional on the debtor having a credit agreement with the International Monetary Fund, so the role of assessing the legitimacy of an indebted country's need has been delegated (Brown and Bulman 2006: 13).

[42] A post-default boycott, in contrast, asks creditors to resist attractive offers made by the sovereign and to fear other creditors eventually undermining the new sovereign debt regime.

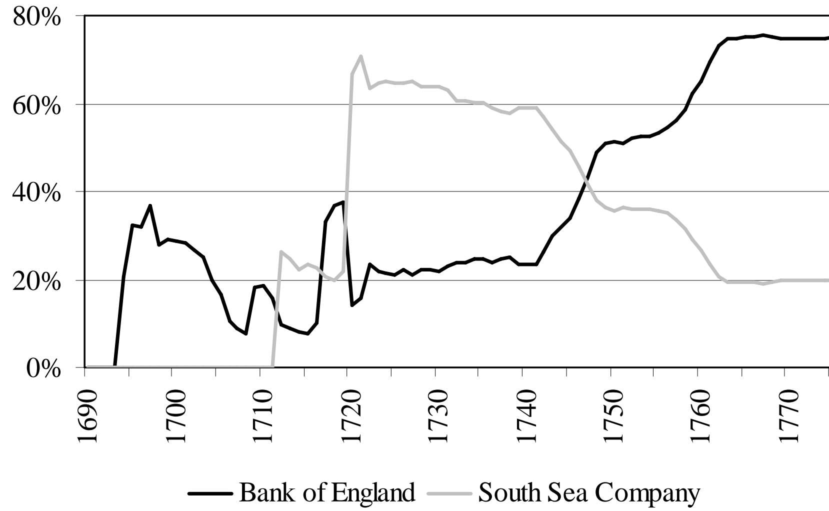
3, and they suggest that the restructurings greatly reduced the collective power of the South Sea Company.

That impression, however, is incorrect because the South Sea Company continued to administer the new annuities. The South Sea Company recorded transfers of ownership and paid interest. The idea was not novel. In 1710, Britain hired the Bank of England to take subscriptions for a lottery.[43] In 1715, the Bank of England was hired to both subscribe and then service the first direct issuance of redeemable, perpetual annuities. Britain continued to pay the Bank of England to market and manage long-term debt for the rest of the eighteenth century.[44] When one looks at the share of long-term debt either held by or administered by the Bank of England and the South Sea Company in Figure 4, one sees that the South Sea Company coordinated about 60 percent of all long-term debt in the 1720s and 1730s, and the Bank of England coordinated an additional 20 to 25 percent. The companies retained an effective structure for creditor coordination, and substantial bargaining power.

[43] Moving the subscription site from the West End to the City and moving the administration of the subscription from the Exchequer to the Bank of England were part of a near desperate attempt by the Whig government, Lord Treasurer Godolphin in particular, to raise new money in a year of particular fiscal distress (Dickson 1967: 62). The gambit worked, for the first such lottery was fully subscribed on the first day (Grellier 1810: 70). Godolphin's government fell from power anyway, but the subsequent Tory government, who disliked the Whig-dominated Bank of England, continued to contract with the Bank of England for the initial subscription of additional lotteries in 1711 and 1712.

[44] The government did occasionally return to using the Exchequer to market new debts: a lottery in 1719; annuities in 1720, 1732, 1736, 1739; and a tontine in 1765.

Figure 4. Share of Long-Term Debt Held or Administered by Company




Source: See Figure 1.

As a result, little rate restructuring occurred in the 1720s and 1730s. Despite the marginal rate of new borrowing having fallen to 3 percent, Britain chose a persistent policy of retiring South Sea debt instead of reducing rates (Dickson 1967: 214; Homer and Sylla 2005:155).[45] The situation did not change until the War of Austrian Succession (1741-8) produced substantial new borrowing that the Bank of England administered but did not own. In Figure 4, the Bank of England's share surpassed the South Sea Company in 1747, and the war ended with the Bank of England managing one half of the long-term debt and the South Sea Company one third.

The shift in administrative power during the War of Austrian Succession set the stage for the largest debt restructuring of the eighteenth century. In 1750, Britain wanted

[45] In the 1728 and 1729, Britain did borrow from the Bank of England in order to retire South Sea Company debts, but that approach, re-arranging the debt between corporations, was abandoned.

creditors holding £57.7 million of long-term debt (72 percent of the national debt) to reduce rates with no compensation.[46] The request was only beneficial to Britain, and each of the three companies refused the offer. After the corporate rebuke, few investors took Britain's offer, and Horace Walpole summarized that Britain, "has just miscarried in a scheme for the reduction of interest by the intrigues of the three great Companies and other Usurers (Sutherland 1946: 27)". The three companies directly held 27 percent of these debts, and either the Bank of England or the South Sea Company administered almost all the rest. The administration of debt provided sufficient coordination to impose an effective credit boycott.

The story, however, was not over. One month later, Britain convinced the General Court of the Bank of England to reverse its decision. As Dickson notes, "It would be nice to know what arts Gideon [representing the government] used to turn the lion of January into the lamb of February (1968: 236)," and the newspaper the *General Advertiser* printed letters complaining of threats being made against the Bank of England (Sutherland 1946: 28). This paper's perspective suggests that the most likely threat was tampering with the Bank of England's privileges by upsetting the bank's monopoly of short-term state finance.

The Bank of England's defection caused individual creditors to rush to restructure (Dickson 1967: 238). While the Bank of England received no prize for its vote, the East India Company held out for the right to de-securitize as much of its pooled debt as

[46] Britain wanted creditors to lower rates from 4 percent to 3.5 percent immediately and then to 3 percent after 7 years (Dickson 1967: 233-41).

necessary to retire company bonds that carried a relatively high rate.[47] The South Sea Company held out for the best terms: keeping its rate at 4 percent until 1757. With no privileges to defend and only the threat of redemption to fear, the South Sea Company was singularly focused on minimizing concessions.

The episode shows that a coalition led by a few corporations could reject an offer to restructure debt of a sovereign unwilling to default, and it helps explain why Britain did not gain rate concessions from the companies for three decades. The episode also shows that Britain could get the Bank of England to undermine those coordinated efforts, and that the defection was enough to compel others to compromise.

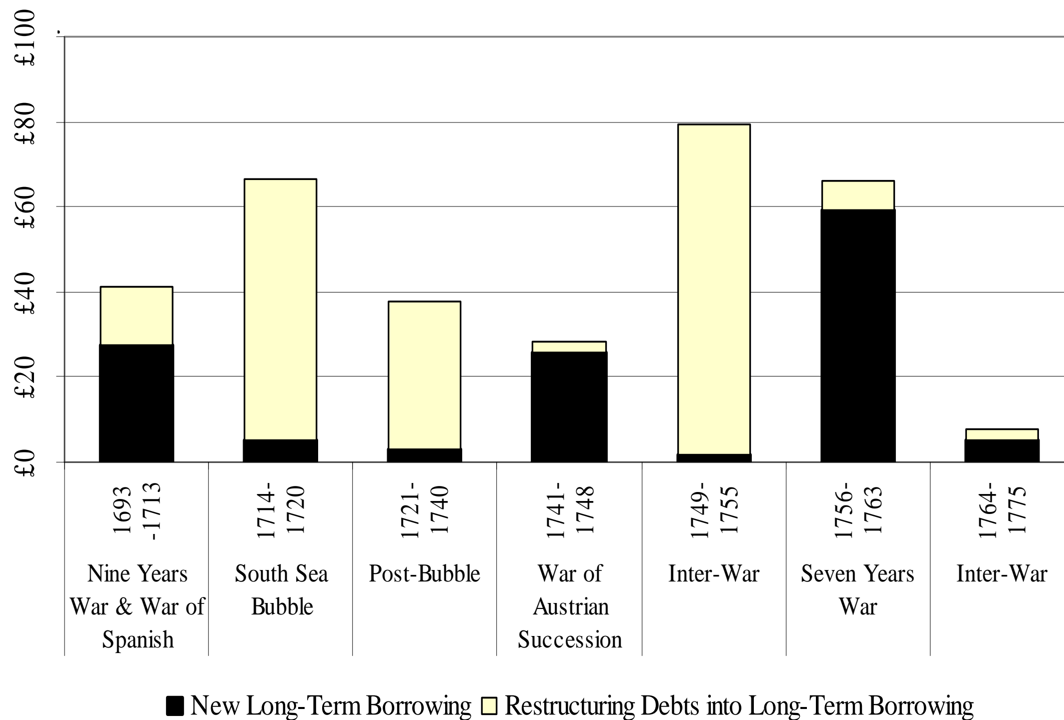
## 9. CONCLUSIONS

The arc of sovereign debt securitization began as a way to issue new debt and then became a way to restructure existing debt: starting with debt in default in 1697 to debt under no imminent threat in 1720. At its peak, corporate securitization was the dominant structure of British sovereign debt and created substantial creditor cohesion. After 1720, however, restructuring was used to reduce securitization. The journey into and out of sovereign debt securitization finally brought Britain to a new style of national debt: dispersed debt ownership, deep secondary markets, low rates, and little restructuring. Britain became a country with high credibility and negligible premiums for aggregation costs (Eichengreen and Mody 2003: 82).[48] While securitization peaked in 1720, the end of restructuring was not evident until the Seven Years War (1756-63). To see the contrast

[47] See British Parliamentary Paper 1898: 56. The conversion created £3 million of East India Company annuities administered by the company. The remaining £1.2 million in

from earlier wars, Figure 5 reports the amount of new long-term borrowing and the amount of debt restructured into long-term borrowing by era.[49]

Figure 5. Long-Term Debt, in Millions, Created by Era and Method




Source: See Figure 1.

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debt owed to the East India Company was finally released in 1793 when all the debt was converted into standard annuities administered by the Bank of England.

[48] The various perpetual annuities in circulation at mid-century were identical for practical purposes, and one last restructuring, in 1752, consolidated them into two ubiquitous annuities: Three Percent Consols and Reduced Three Percents. The number of long-term issues in circulation fell from 26 to 13.

[49] The numbers in Figure 5 are debt creation, so they do not correspond to the level of national debt. Also, to improve clarity, the modest amount of long-term debt created to redeem existing debt (refinance) is not reported.

Through the process, Britain managed to restructure its national debt with creditor acquiescence. Securitization of a sovereign debt proved a way for Britain to honor its commitments and improve credibility, for voluntary restructuring respected property rights and lessened the overall debt burden. Also, because securitization melded debt and privileges, Britain's burgeoning fiscal credibility was an expectation of honoring both debt contracts and grants of privilege. In contrast, the War of Spanish Succession forced Holland to unilaterally lower rates and tax supposedly tax-free debts (van der Ent, Fritschy, Horlings, and Liesker 1999: 265-6). France repeatedly had large, unilateral defaults in the eighteenth century (Velde and Wier 1992).

Eichengreen and Mody (2004) find that modern emerging markets whose debts carry collective action clauses may face higher borrowing rates because of the moral hazard following from easier restructuring. British restructuring, however, did not drive up rates on new loans. Instead, reductions in interest and conversions into long maturities improved fiscal credibility and overwhelmed moral hazard concerns.[50] During the critical era of Britain's fiscal adolescence, say 1688 to 1720, sovereign credibility improved through successful voluntary restructurings rather than through successful creditor boycotts. Debt-for-equity swaps in 1697 and 1711 helped defuse debt crises. The restructurings between 1715 and 1720 re-organized Britain's debt into a more

[50] Even if creditors do charge higher rates because they expect restructuring, the result may benefit the sovereign. Creditors can demand higher rates without compromising the sovereign's eventual ability to pay, for the sovereign will restructure the high rates into a less burdensome form. Expectations of restructuring reduce credit rationing because pricing becomes a more effective rationing mechanism. While beyond the scope of this paper, the possibility remains that expectations of future restructurings increased the amount Britain was able to borrow during wars.

homogenous, redeemable, and liquid structure. The restructuring of 1750 substantially reduced Britain's interest burden. Successful restructurings had substantial positive spillovers.

Another consequence was a change in who administered sovereign debt. In Holland, tax receivers issued long-term sovereign debts and paid the interest on the debts they issued.[51] Before 1688, Britain also had a tax collector-based system of finance.[52] In contrast, securitization had investors dealing with the corporations, and securitization's combination of debt and privileges made the Bank of England amenable to administering sovereign debt not owned by the bank. The Bank of England focused on defending its privileges rather than on stymieing new long-term debt creation. This accident of history produced the eighteenth century equilibrium wherein the Bank of England suppressed circulation of rivalrous short-term sovereign debt but facilitated the circulation of long-term debt. In other words, the process created an enduring and often imitated relationship between state and central bank.

Finally, British securitization had creative ways to reward creditors for concessions. The initial illiquidity of Britain's debt created one source. The privileges were another. The applicability of the British approach to modern sovereigns, then, is directly related to

[51] Interest was automatically the first claim on a receiver's receipts unless explicitly directed otherwise by the provincial government (Fritschy 2003: 79).

[52] The pre-1688 British system only issued short-term debt, but this need not have been an obstacle, for the Dutch national debt evolved out of a short-term system. Holland had been issuing life and term annuities, but in the early 1600s a deep market had developed in Amsterdam for commercial IOUs with maturities of 3, 6 or 12 months (Gelderblom 2003: 627-8). Holland's tax receivers sold sovereign debt called obligations to this market that mimicked commercial debt and became a long-term instrument through routine roll-overs (Fritschy 2003: 76). Obligations became the dominant means of borrowing during the 1630s and 1640s (Fritschy 2003: 66).

the availability of additional dimensions and a state's willingness to use them to entice creditor participation in debt restructuring.

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