

The Origin of the Bank of England:  
A Credible Commitment to Sovereign Debt

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**Abstract:** *In economic development, institutions and organizations are critical elements which can be looked upon as rules and players of a game, respectively. Investigating how institutions evolve and why certain organizations emerge may help us better understand economic development, especially when the situation requires an efficient solution. The problem of sovereign financing shares the features of one-sided Prisoner's Dilemma (PD). Sovereign default had been a common phenomenon in England since the medieval period; however, the establishment of the Bank of England altered the sovereign's incentives and helped build mutual trust between the crown and Parliament. In this paper, we analyze the emergence of the Bank by viewing it as a commitment device which makes the king's promise to pay trustworthy.*

## **I. Introduction**

In economic development, institutions and organizations are critical elements which can be identified as rules and players of a game, respectively (North, 1991). Tracing the growth and change of some important institutions and organizations may give us valuable insights into contemporary economic issues. Many economists have explored how the Bank of England has evolved since 1694 from a private business to the central bank (see e.g. Bowen (1995)). The Bank of Amsterdam, established in 1609, was often regarded as the antecedent of many European public or semi-public banks. In the seventeenth century many banks were founded by imitating the Bank of Amsterdam, such as the Bank of Hamburg in 1619, the Bank of Sweden in 1656, and the Bank of England in 1694 (Clapham, 1966).

However, this viewpoint only offers a partial picture of the Bank of England. The Bank may be considered as a commitment device which enables the king and Parliament to build mutual trust. This perspective offers an alternative explanation for the origin of the Bank as well as the financial evolution of England in the seventeenth century.

Huge expenditures on wars often forced the English king to borrow in the medieval period. However, the king was above the law, no subjects could use the court to protect their property rights. How the king could make his promise to pay trustworthy, therefore, became a critical problem. For simplicity, suppose that the king is already in debt and has two types of choices: to pay back the debt or to default. Likewise, the creditors may choose to lend or not to lend. Suppose the interaction between the king and his creditors is one-time or finitely repeated. In this sovereign financing contract, if the creditors extend new loans to the king, he will be better off defaulting, not paying back his debt. If the creditors do not lend, then again the king will be better off defaulting, not remitting payment for the old debt. Consequently, the king's best choice is to default, regardless of what the creditors choose. However, the best case for both is that they cooperate; the king gets the resources to defeat the enemy, while the creditors gain from providing financial services. Thus, the sovereign financing problem can be looked upon as a one-sided PD game (Rasmusen, 1994: 129-131).<sup>1</sup>

In this paper, by considering the sovereign debt problem as a one-sided PD game (one-shot or finitely repeated), we argue that the Bank of England enabled the king to make his commitment toward cooperation credible. Hence, the Bank helped solve the king's financing difficulty. In addition, our analysis provides a rationale for the

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<sup>1</sup> The king's dominant strategy is to default. If the king chooses his dominant strategy, then the creditors

establishment of the Bank of England.

## **II. Sovereign Finances of England in the Past**

A brief review of the sovereign finances of England in the past may help us understand the root of the king's financial problem. In the medieval period, tax collection was a very difficult task; the king often relegated local agents and office holders to collect taxes for the sovereign, a practice called tax farming (Hicks, 1969). Generally, these agents or office holders had tax exemption privilege, narrowing the tax base and reducing tax revenue. However, tax farming supplied the king regular income: the agents and office holders committed fixed annual payment to the royal coffer regardless of the taxes they collected. In addition, they were good sources for the king to apply for loans. Though the king was often under the mercy of tax farmers and lost fiscal control, he gained easier credit and convenience (Brewer, 1989: 88-134). The king of England was constantly in need of funds because of tremendous expenditures on wars. Wars forced the sovereign to finance his budget through borrowing, which resulted in heavy debt services of the royal coffer, aggravating the situation year after year (Jones, 1994).

In England the king had to negotiate funding directly with Parliament, which represented the general interests of the English subjects. Due to the lack of trust in the crown, Parliament permitted only limited funds for the king after the Restoration, starting an annual deficit for the royal coffer. The king was not able to levy taxes illegally, but he evaded Parliament's restriction by borrowing from bankers, secured on taxes approved by Parliament. The sovereign debt incurred high interest costs and caused conflicts between Parliament and the Financial Interests (i.e. the king's creditors), resulting in another

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will be induced to choose not to lend, leading both sides to a worse outcome.

sovereign default, the 1672 Stop of Exchequer. Finally, Parliament realized that the threat to properties constituted impingement on the nation, the Protestant religion, and its own existence. After the Glorious Revolution, Parliament dominated the political forum and the sovereign financial affairs, integrating the Financial Interests and the Landed Gentry. Since Parliament had no faith in the new king, William III, a device had to be established to solve the king's financial difficulty, to monitor the king's fiscal expenditures, and to build mutual trust between the king and Parliament.

### III. The King's and the Creditors' Dilemma

In this section we will illustrate the strategic situation faced by the king and his creditors, which can be considered as a one-sided PD game. For simplicity of analysis, we use a two-period model adapted from Yang (1997) and assume that each party has two types of choices: to cooperate (C) or to defect (D). Let  $d_t$  denote the debt due in period  $t$ ,  $t = 1, 2$ . The interest rate is  $r$ , the king's and the creditors' time preference rates are  $\rho_k$  and  $\rho_c$ , respectively. If the creditors cooperate, they will lend a new loan  $L$  to the king. If the creditors defect, the amount of the new loan is  $l$ . It is assumed that  $L > l$ ; in addition, the creditors' time preference rate is smaller than the interest rate, that is,  $\rho_c < r$ , which is typical of the financial market operation. If the king chooses C, it means that he will remit the due debt in both periods and pay back the new loan plus interests. When the king chooses D, he will not make any payment. The scenario is summarized in Table 1.

Insert Table 1 about here.

In each parenthesis, the top number denotes the payoff for the king, the bottom one for the creditors. According to the table above, if the creditors choose C, then the king will be better off choosing D, since he does not have to make any payment but still get the new

loan  $L$ . If the creditors choose  $D$ , then the king is still better off choosing  $D$ . The king's best choice, therefore, is  $D$ , no matter what the creditors do. If the king chooses  $D$ , then the creditors will be better off choosing  $D$ , extending a smaller new loan  $l$ , which may be considered as zero. When the king chooses  $C$ , the creditors will be better off choosing  $C$ , since we assume that the creditors' discount rate is less than  $r$ , thus,  $(-\rho_c + r)L > (-\rho_c + r)l$ . If the interaction between the king and the creditors is one-time or for finite times, then the king's best choice is  $D$ , which induces the creditors to choose  $D$ . Based on the description above, individual rationality implies that both parties will end up defecting. However, the best outcome is for both parties to cooperate: the king gets the resources to defeat the enemy, while the creditors gain from providing financial services. Thus, the situation can be looked upon as a one-sided PD game. Since mutual cooperation requires the king to give up his best choice, the creditors, therefore, could hardly trust the king's promise to pay. A certain device has to be established to make the king's commitment to loan contracts trustworthy.

#### **IV. The Origin of the Bank of England: A Credible Commitment**

In medieval England, when Parliament declined the king's request for financial support, the sovereign might resort to loans, which were secured on taxes approved by Parliament. After the Glorious Revolution, however, the situation changed. Parliament embodied the national interests, that is, the Financial Interests and the Landed Gentry, depriving the king's leeway of avoiding supervision and making it in the king's interests to show credible commitment to Parliament.

Andreades (1966, 43-59) describes concisely the founding of the Bank of England. Confronted with insufficient tax revenue, the king realized that the creation of a bank might

strengthen his financial position. Though William III introduced many new taxes, the revenue did not reach the level expected due to corruption. Additionally, recognizing his unpopularity, the king had to undertake fiscal reforms cautiously. With limited confidence in the new king, Parliament approved taxes only for the services of the current year, the best guarantee that Parliament would meet regularly. Due to his predecessors' notorious records of debt repudiation and the lack of trust in the stability of the government, the king was forced to plead for a loan of £100,000 from the City of London; the raising cost was about 30 percent of the loan. Though several other innovative measures were implemented to raise funds, these sums were not enough to meet the expenses of wars. Furthermore, the costs for these expedient maneuvers were too high to bear. At last, the king adopted the plan to establish the Bank of England in 1694. In the following we will discuss how the Bank helped the king secure the English people's trust and solve his financial difficulty.

Financing through the Bank made the disbursement of funds transparent; thus, the king would not be able to evade the legislature's supervision. The episode in which funds allocated to wage wars against Holland were instead used to form alliance with the supposed enemy would not happen again (Jones, 1994). Had sovereign default occurred, the national debts, the Bank's major assets, would have become worthless and the Bank would have gone bankrupt, a result fatal to the State (Hicks, 1969). In other words, breach of contract would result in the collapse of credit for all trade and industry, disrupting the whole economy. Therefore, the Bank acted as a commitment device, making the king's promise to pay credible. Parliament prevailed in the political forum after 1689, but the legislature had no incentives to renege the financing contract, which might have resulted in the collapse of the nation, and consequently, Parliament's demise. Without the Bank, the

king would have no means to sustain the fiscal crisis since taxes were not enough to pay off loans and military expenditures; he could not but default. As for Parliament, due to the lack of trust in the crown and notorious records of sovereign default, lending was not the legislature's best choice. After all, the founding of the Bank resolved the commitment issue, cultivating mutual trust between the king and Parliament. The Bank engineered enormous financial resources to the army and the navy, helping England dominate in the world. Above all, the Bank secured the public trust, an indispensable factor in economic development and power struggle against France. If not for the Bank, England might have been defeated by France in the economic and power competition in the eighteenth century.

## **V. Conclusion**

This paper has explored the emergence of the Bank of England as well as investigated sovereign financing and a credible commitment toward a cooperative solution in a sovereign debt contract. The sovereign debt problem can be represented by a one-sided PD game, in which both parties would end up mutually defecting if the game is played once or finitely repeated, though mutual cooperation can make them better off. Since no means exist to make their commitment to loan contracts credible, cooperation is not an incentive compatible strategy.

In the financial evolution of the seventeenth and the eighteenth centuries, the Bank played a critical role, acting as the king's credible commitment to Parliament. If the king defaulted, the national debts, the Bank's major assets, would become valueless and the Bank would go bankrupt, which would cause the kingdom to collapse. Therefore, the crown would not repudiate the loans. Even though Parliament prevailed in the political forum, members of Parliament had no incentive to abuse the Bank, either. Once they

breached the financing contracts, the consequence would be no different from sovereign default: the breakdown of public trust would occasion Parliament's annihilation.

The analysis has demonstrated how the Bank, acting as a commitment device, made the financing contracts between the king and Parliament binding. To facilitate future sovereign financing and economic development in less developed areas, we may need to build a similar commitment device, which is able to disclose openly the relevant economic operations of sovereign states and to manage impartially the finances thereof. Further research in this field may shed light on how the international community should manage its financial affairs.

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Table 1

		The Creditors	
		C	D
	C	$L - d_1 - \frac{(1+r)L + d_2}{1+r_k}$	$l - d_1 - \frac{(1+r)l + d_2}{1+r_k}$
	D	$-L + d_1 + \frac{(1+r)L + d_2}{1+r_c}$	$-l + d_1 + \frac{(1+r)l + d_2}{1+r_c}$
The king	C	L	l
	D	-L	-l