

Tallies or Reserves? Sir Francis Child's Balance Between Capital Reserves and Extending Credit to the Crown, 1685-1695

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A resilient private banking system existed for decades before the Glorious Revolution of 1688. Since Cromwell's Protectorate, money-scriveners, great merchants and especially goldsmith-bankers were providing a sophisticated variety of financial services to both the merchants of the City and the gentry of the West End. The goldsmiths, in particular, had a thriving system of banking that cleared checks and bank notes on a daily basis from as early as the Restoration in 1660 [20]. During the second half of the seventeenth century, the customers of London's goldsmith-bankers could deposit money at interest, write checks, negotiate overdrafts, discount bills of exchange or government debt (known as tallies), pass bank notes, exchange foreign specie and borrow funds secured by pawns, property, bonds or reputation.

William of Orange arrived in England in November of 1688 and by May 1689, England was at war with France. The new king had need of London's financial intermediaries to raise funds for the costly Continental war. The Nine Years War (1689-1697) between William III and his Habsburg allies on one side and Louis XIV of France on the other was in scale, expense and debt much larger than the English conflicts of preceding decades. Under the new constitutional arrangements that accompanied William's ascension to the throne, Parliament provided the Crown with a stream of revenues conditional upon the legislature's regular re-authorization. Although Parliament came to provide extraordinary funds over the course of the Nine Years War, expenditures grew faster than receipts.

With extraordinary revenues controlled by Parliament and expenditures necessitated by conflict, the English Treasury's immediate war-time budget deficit had to be covered by other means. One revenue raising alternative, seigniorage, was untenable. England had enjoyed a stable, sterling based silver standard since Henry VIII. Calling down the value of silver would have antagonized creditors and the landed class, constituents upon whom the new

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Monarch depended [16].² Instead, borrowing was the traditional source of short run funds for the British Crown, and therein lurked a problem. Successful large scale borrowing had depended on the sale of debt to intermediaries such as London's goldsmith-bankers; however, earlier regimes had not treated their financiers well. Leading up to the English Civil War, Charles I had coerced loans and lost all credit [1]. Charles II had made great use of London's goldsmith-bankers in financing the Second Dutch War (1665-67), but defaulted on the eve of the Third Dutch War in 1672. Charles II's default, called the 'Stop of the Exchequer,' left London's most prominent goldsmith-bankers broken and without recourse. The Crown's credit remained weak until the constitutional changes of the Glorious Revolution.

In 1689, William III turned to London's financial community for loans, and the records of London goldsmith-banker Sir Francis Child establish how one banker responded. Francis Child was a junior partner during the Stop of the Exchequer in 1672 and had become a senior partner when William III came to power in 1688. Although Child's banking shop did not hold government debt in either 1672 or 1688, the goldsmith-banker began purchasing tallies in 1689 and thereafter became an important player in England's financial war machine. The story of Child's lending behavior before, during and after the Glorious Revolution reveals a goldsmith-banker's shift from eschewing government debt to the active accumulation of Treasury securities. The goldsmith-banker was responding to a flood of war debt offering high interest rates. To enable his purchases of government debt, the goldsmith-banker both shifted funds away from private sector lending and lowered his reserves to asset ratio.

Despite the substantial change in his lending behavior, Child could have extended even more loans to the Treasury, yet he chose not to. Child did not forsake lending outside the circle of Treasury securities, and the goldsmith-banker's capital reserves were kept at substantial levels. This paper submits the explanation that goldsmith-bankers like Sir Francis Child would not unreservedly purchase tallies because they faced potential ruin if they did. Child ran a self owned shop with unlimited liabilities at short run demand. The goldsmith-banker maintained reserves sufficient to handle severe runs rather than further extend his exposure to government debt. To the degree London's other bankers faced similar trade-offs, Francis Child represents the restraint private intermediaries chose in acquiring government debt.

The limits of London's private financial sector coupled with a very expensive war created a financial difficulty for the Treasury in the years following the Glorious Revolution of 1688. The expense of the Nine Years War has received considerable analysis, especially in Jones' *War and Economy in the Age of William III and Marlborough*, yet this analysis has not addressed why private bankers would not lend more to the state in support of the war. The reluctance of private bankers to decrease their reserve ratios created a gap between what William III wanted to borrow and what private bankers like Child

²When the coinage was reminted in 1696, the value, weight and purity of the silver coinage was maintained. The cost of recoinage was met with new taxes, and no seigniorage accrued to the Crown [16].

were willing to fund. This gap spurred famous innovations in public finance at the heart of the Financial Revolution. For example, the Bank of England was founded in 1694 explicitly to expand the funding of government debt. The unwillingness of financiers like Child to loan more to the Treasury is an unstated underpinning of such defining works on England's Financial Revolution as Dickson's *The Financial Revolution in England* [10], Clapham's *The Bank of England* [7], Horsefield's *British Monetary Experiments* [13], Richards' *Early History of Banking in England* [21] and Roseveare's *The Financial Revolution* [24]. The restraint of London's private financial intermediaries was a driving precondition for the public sector experimentation at the heart of the Financial Revolution.

The Shift to Tallies

With the death of Robert Blanchard in 1681, Francis Child took over the senior partnership of the goldsmith-banking shop the Marygold, within Temple Bar, which straddled the far west end of the City of London. In the decades to follow, Child built a successful banking house serving the growing West End. Unlike the goldsmith-bankers of Lombard Street, Child did not specialize in commercial credit for overseas trade, foreign bills of exchange or coins from abroad. He did, however, cater to the needs of his West End clientele by retailing in jewelry and plate and by providing various financial services. Child accepted deposits, both time and demand, which he in turn loaned. Francis Child also maintained fractional reserves ranging from fifty to sixty percent of his total assets (see Table 4 below).

Over the years stretching from the early 1680s to 1695, Francis Child had an outstanding loan account totaling thirty to fifty thousand pounds on any given day. In the mid-1680s, Child lent mostly to his own customers. Often the loan agreement was in the form of a pawn with the borrower securing the loan with plate, jewelry or a penal bond. Child even referred to his loan portfolio as the "Pawn Account." This goes back to the traditional aspect of goldsmiths acting as pawn brokers. However, Child did regularly loan funds with no mention of collateral. Child also lent to customers in the form of overdrafts. Unfortunately, Child did not tabulate the daily progress of his clients' overdrafts in any centralized way, so analysis of overdrafts is constrained to only the broadest of conclusions. Overdrafts are not considered further except to note that they ranged from twenty-five to thirty-five thousand pounds at any time (see Table 4 below). By 1695, England had been at war with France for six years, and (now Sir) Francis Child had become a major participant in financing the government debt the war had created. Child's stock rose quickly after the Glorious Revolution of 1688. Child was elected Alderman and knighted in 1689, became Sheriff of London in 1690 and the Prime Warden of the Goldsmiths' Company in 1691. His rise in station paralleled his move into the public debt market.

Child's reasons for shifting a large portion of his lending business to the Crown were twofold. The Crown offered access to offices such as Child's appointment as the King's jeweler. On the purely financial side, the Crown exempted itself from the usury laws by offering up to a fourteen percent return.

All others were legally constrained at no more than six percent per annum. The royal premium was not a new arrangement. Goldsmith-bankers had been mediating between depositors, limited to a ceiling return of six percent, and the Treasury for decades. Rather, the Nine Years War vastly increased the supply of tallies at high rates of return. "The immediate result of England's entry into the war against France in 1689 was to make public expenditure increase between two and three times" [10, p. 46]. Annual government borrowing rose tenfold from the years under William III's predecessor, James II, to the early part of the Nine Years War.

Table 1 presents the annual borrowing figures for the English government. Except for a slackening in 1692, the Nine Years War necessitated yearly borrowing that was many times larger than Charles II's most profligate year (Michaelmas 1670-71) of £597,000 [5, p. 353]. The Treasury had to find a market for this debt and established bankers were one traditional outlet. Attempts by the Treasury to sidestep financial intermediaries and sell debt directly to the public on a large scale had failed in the 1660s [23], so the government had few alternatives to the goldsmith-bankers for pooling funds seeking investment. The vast new quantities of debt expanded the opportunities for new players like Francis Child to begin participation in the government debt market.

Table 1. English Government Borrowing (£,000)

1685-6 (Ms.-E.)	1686-7 (Ms.-E.)	1687-8 (Ms.-E.)	1688-91 (p.a.)	1692
254	153	181	1,703	344
1693	1694	1695	1696	1697
2,269	1,798	2,378	3,325	4,767

Sources: [5, p. 361; 14, p. 70].

The increased quantity of tallies (English government debt) was accompanied by a diminished risk of default. The re-arrangement of political power underlying the arrival of William in 1688 permanently shifted the regular authorization of revenue to the Parliament. Heightened Parliamentary control over revenue and expenditure reduced the likelihood that the Treasury would fail to meet debt payments. Also, the placing of the Crown under the umbrella of the Common Law also constrained the king's ability to abuse royal prerogatives [18].

The significance of the increased security afforded to the Crown's creditors arose from earlier government defaults. Charles II had stopped most debt payments out of the Exchequer in 1672 (a result of his heavy borrowing) and ruined the generation of goldsmith-bankers then lending to the Crown [12; 22]. In 1672, Child was a junior partner to Robert Blanchard and their shop did not hold government securities. Child likely witnessed the fall of Sir Robert Vyner, Edward Backwell, Jeremiah Snow and other goldsmith-bankers first hand, so the concern over the effects of another default in the 1690s was not negligible.

Greatly expanded debt issuance by the Treasury coupled with less risk of default encouraged goldsmith-bankers to expand their loan portfolios in favor of government debt. For Francis Child, this shift was pronounced. Chart 1 plots tallies as a percentage share of Child's monthly loan creation. The figures have been encoded and the account reconstructed from Child's extant ledgers. The records are mostly complete except for the nine months from April to December 1690 from which only the records of a few transactions survive. Although presented throughout this paper, the last three quarters of 1690 must be viewed as greatly understated.

Before the summer of 1689, the goldsmith-banker had purchased no tallies. In the years that followed, government debt became the major portion of the goldsmith-banker's investment portfolio. In some months, tallies reached eighty, ninety and even one hundred percent of Child's lending activities. The portion of total monthly loans taken by government debt, however, varied greatly from month to month. Receipts from repaid loans followed a pattern similar to lending. Returns from government debt become a large portion of Child's total flow of returns starting in 1689.

Table 2. Total Amount Loaned by Francis Child

Year (Jan-Dec)	No. of Total Months	Loans	Monthly Average	Monthly Standard Deviation
1685	7	£ 32,708	£4,673	£4,058
1686	12	57,088	4,757	3,639
1687	12	52,345	4,362	3,568
1688	12	120,275	10,023	7,641
1689	12	116,877	9,740	6,185
1690	3	3,392	1,131	844
1691	12	81,377	6,781	3,808
1692	12	97,912	8,159	8,487
1693	12	143,381	11,948	8,999
1694	12	77,388	6,449	6,681
1695	12	52,864	4,405	3,316

The size of Child's lending activities did not suffer with the switch to government debt. In Table 2, total loans picked up in 1688 and remained high in 1689. The results from 1690 are limited by missing data. Lending in the years 1691 through 1694 are high compared to the pre-war years of 1685 through 1687. Child's lending fell off in 1695, but the year was notable for inflation and the collapse in the value of clipped silver coins [14]. Until the monetary crisis

was resolved in 1696 and 1697, uncertainty would have diminished incentives to lend [13; 16]. Throughout the ten year period, the variance in amount Child loaned per month remained substantial. Child lent in spurts, both in total and to the Treasury. Receipts also arrived in highly varying amounts.

The year 1688 was an exceptional one for Child. In the midst of a deepening political crisis that would end in James II's leaving England, Francis Child loaned large amounts to a number of well connected people. Child heavily funded both Whig and Tory merchants during the uncertain months of 1688. Child lent Sir John and Francis Eyles, brother merchants who later became financiers for William III, over five thousand pounds. Sir John was a West Indies merchant while Sir Francis would go on to direct the Bank of England and the old, the new and then the Unified East India Companies [8]. The goldsmith-banker also lent thousands to Sir Samuel Dashwood, an important Tory Levant Merchant. In a rare entry, Child even lent three thousand pounds directly to the East India Company in February of 1688. Child was elected alderman and sheriff in 1689 as a Whig [8]. Only later, in response to Whig support for both the New East India Company and the Bank of England, did Child become a Tory.

During the height of political crisis in late 1688, the future was less certain. In October of 1688, Child changed tack. Instead of the extensive lending of earlier months, Child collected £37,735 and loaned no new funds. In December of 1688, Child's total estimated loan portfolio was less than £10,000, at most one third his regular lending level. With no offsetting increase in capital or fall in liabilities, Child's estimated net worth plunged to nearly £25,000 in the red. Child did not record his December 1688 level of lending. The author's estimate (see Table 4) cannot explain where the funds collected from the completed loans in late 1688 went.

With the establishment of the new regime in 1689, Child loaned considerable amounts to established customers and dabbled in his first tally purchases. The new Lord Chamberlain, the Earl of Dorset, was one of Child's established account holders. With such contacts, Child was knighted, elected Alderman and held the post of Sheriff of London, all in the year 1689. Child lent £116,877 over the course of the year. Unfortunately, the folios containing March through November of the next year, 1690, have mostly been lost. Judging from the goldsmith-banker's outstanding loans in December of 1690, around £28,000 worth of new lending went out without the arrival of off-setting receipts during the last nine months of 1690. In 1691, the goldsmith-banker resumed lending liberal quantities with government debt as a large percentage of total lending.

Party loyalties aside, Child's response to the increased supply of government debt was a reaction to the high rates of return offered on tallies. The comparative examples of the same principal amounts in Table 2 highlight the extra returns the goldsmith-banker could acquire.

During the first year of his reign, William III supplemented extra interest premiums with his personal attention to encourage lending by Child and other goldsmith-bankers. The King was present with his Lords of the Treasury when securing loans from such prominent goldsmith-bankers as Francis Child, Stephen Evans, Charles Duncombe and Joseph Hornby [2, pp. 35-44]. The royal

premium was also supplemented by offices. As mentioned above, in 1689, Child was made William III's 'Jeweller in ordinary' for the duration of the war. The King's jewelry account was worth over £20,000 in business over its first four years [25, p. 49] Similarly, goldsmith-banker Stephen Evance received an officership in the Excise over the course of the war.

Table 3
Internal Rates of Return for Sample Loans

Loan	Receipt	Internal Rate of Return
27 July 1688 William Brownlowe £2000	21 June 1689 £2000 principal £97:18:4 interest	5.5%
27 June 1689 Exchequer £2000	12 August 1689 £2000 principal £16:19:6 interest	6.9%
12 August 1691 Tallies on Land Tax £2000	3 February 1692 £2000 principal £78 interest	8.3%
6 November 1691 Mr Maynard £250	16 March 1692 £250 principal £4 interest	4.5%
27 June 1691 Exchequer for Tally £250	15 October 1691 £250 principal £4:18:6	6.7%
26 September 1693 Tally on Customs £250 £1:1:9 discount	2 December 1693 £250 principal £5:16:3 interest	9.6%

The Treasury needed to offer premiums and the other inducements because lending to the Crown, despite the constitutional reforms of the Glorious Revolution, was still risky. William III's government could collapse and/or the war could be lost. The goldsmith-bankers caught holding tallies in the government's default of 1672 (the Stop of the Exchequer) never regained but a fraction of their principal [11; 22]. After years of petitioning, the Treasury established a permanent stream of interest payments but never fully compensated the jilted debt holders. Moreover, the goldsmith-bankers involved were hounded by litigation for years and never regained their prosperous former positions. Child's conservative accumulation of tallies in 1689 suggests a testing approach on the goldsmith-banker's part. Only with successful maintenance of the debt

would the new regime show they had, "as contemporaries alleged--the secret of running the state over head and ears in debt" [10, p. 39].

Success in the public debt market required more of participants like Francis Child than just purchasing Treasury securities. For decades, goldsmith-bankers who invested in tallies had established a specialization in providing mediation between the public and the Exchequer. Many goldsmith-bankers gained advantage as intermediaries in the government debt market by remaining close to the flow of public funds. By participating as bankers and officers in both revenue collection and government expenditure, goldsmith-bankers such as Edward Backwell, Stephen Evance, Richard Kent and Charles Duncombe gained working knowledge of the flow of public funds in and out of the Exchequer [2; 17; 21]. Child's inexperience with public debt meant he needed to develop specific knowledge concerning the intricacies of dealing with public debt.

Beyond information on the Treasury's likelihood of having sufficient funds to make payments, goldsmith-bankers benefited from familiarity with how the Exchequer worked. As Isaac Meynell, a goldsmith-banker, explained, depositors who were unaware of, "the manner and proceedings of the Exchequer and the way of paying in and receiving money soe advanced" [4], lent their money to the goldsmith-bankers instead.³ With the acquisition of Exchequer specific human capital, Child could profitably expand his foray into public debt investment.

Child, however, already possessed the most important aspect of public debt intermediation: liquidity. Prior to the Glorious Revolution, Francis Child had managed checking accounts and issued bank notes while maintaining fractional cash reserves. Child was already experienced at providing liquidity to depositors. "In no other respect were the goldsmith-bankers so attractive to the small investor than in their ability to repay on demand or at short notice" [23, p. 260]. The ways of the early modern Exchequer were still medieval, despite the introduction of orders and other modernizations during the second half of the seventeenth century. An investor could not make direct use of the Exchequer, "without much trouble and loss of half a day and no certainty of having the offices open" [19, p. 123].

With high transaction costs and illiquidity, merchant aversion to purchasing Treasury securities directly was wide spread. As D.W. Jones discovered, "Merchants contributed but 5.3 per cent to loans on the Land Tax in 1692-3; yet they accounted for 30 per cent of investments in both the Bank of England and East India subscriptions of 1694 and 1698 respectively" [15, p. 340]. Goldsmith-bankers such as Francis Child and innovations such as the Bank of England allowed investors to maintain liquidity through withdrawal of deposits, in the case of bankers, or sale of stock, in the case of the Bank of England.

³The full quote excerpted above is nearly identical to one found by Roseveare in an Exchequer proceeding written by another goldsmith-banker, George Snell [23]. The statement must have been a legal "boiler plate" explanation of goldsmith-banker intermediation.

In 1689, the Treasury went to unusual lengths to facilitate goldsmith-banker liquidity. The Lords of the Treasury explicitly directed the Auditor of the Receipt [Exchequer],

to accept [as cash] the [bank] notes of Mr. Percivall and Mr. Evans, or of Mr. Atwell and Mr. Courtney, or of Mr. St. John, goldsmiths in Lombard Street, or of Lieut.-Col. Child or Sir Thomas Fowlys, goldsmiths in Fleet Street [2, p. 123].

This directive spared goldsmith-bankers, including Child, from presenting specie to the Exchequer and bolstered the reputations of participating goldsmiths. Although direct teller acceptance of goldsmith-banker notes did not become an enduring policy, the Treasury had bent the rules, "at their [the goldsmiths'] request and for their convenience," because promoting liquidity was a key factor in the success of early modern financial intermediaries [2, p. 123].

Limits

While Francis Child responded to the Treasury's expanded debt offerings, he did not abandon lending to his private borrowers. Also, the goldsmith-banker retained substantial capital reserves. To the degree that Child was representative of the other goldsmith-bankers of Lombard Street and the West End, private bankers limited their purchases of public debt. With a very expensive war on the Continent, the Treasury needed more financing than private intermediaries were willing to provide. Goldsmith-bankers like Child did not offer unlimited funds to the English government because they had to maintain their own positions as viable financial intermediaries. The goldsmith-bankers faced unlimited liabilities. The personal penalties for risk were substantial [11]. While Child was arranging new loans with the Treasury, his fellow goldsmith-banker, Jeremiah Snow, who was still suffering from the crippling blow of the Crown default in 1672, petitioned the same Treasury Lords for clemency. "Sir Jeremiah Snow, now a prisoner in the Fleet, who desires a writ...to [enable him] to go [out or] abroad to sell what estate he has to pay his creditors: same being a compassionate case" [2]. Francis Child had to balance the expected returns from the marginal investment in tallies against the risk of depleting his reserves or overly concentrating his portfolios and becoming a "compassionate case."

Child's total loans to all others besides the Treasury peaked in 1688, but, as Chart 2 reveals, Child maintained a substantial level of annual lending outside of the realm of government debt. Child maintained diversity in his lending portfolio by balancing public and private debt. Within tallies, the goldsmith-banker varied his holdings by purchasing debt secured on various revenue streams: Customs, Excise, East India Goods, Wine and Vinegar, etc.. This would help if one revenue stream had funding problems, but did not insure against a general default. The banker also diversified the nature of his public debt by mixing new loans with discounting tallies closer to maturation. The last example in Table 3 shows that Child purchased a £250 tally on the customs and paid an additional £1:1:9 before receiving £5:16:3 two and a half months later. Dickson first noticed Child's increased use of discounting, especially after the founding

of the Bank of England in 1694 [10]. Discounting by bankers such as Child facilitated the circulation of long run debt by increasing the liquidity of government debt. Discounting also allowed intermediaries like Child to shorten the term structure of their own government debt holdings and to match it more precisely to the term structure of their liabilities.

Child expanded his wartime volume of credit by lowering his reserves to asset ratio as shown in the first row of Table 4. The 1690 and 1694 ratios were ten to fifteen percent lower than both the pre-war years (1685, 1688) and the year of monetary crisis, 1695/6. Child had increased his stock of loans outstanding by five fold from an estimated £9,743 in December 1688 to £48,000 two years later. Likewise, overdrafts expanded from 1688 to 1690 by £6,000. Over the same two years, Child's capital stock, mostly silver and gold coins, rose by only £11,000. Four and a half years later, Child had a similar reserves to asset ratio (48.2% in 1690 and 48.0% in 1694), but his stock of loans had slipped £12,000 while his reserves had slid by £20,000. Rather than crowd out non-government borrowing, Child increased his vulnerability to runs and panic.

Table 4. Breakdown of Child's Balance Sheet Taken from "Casting Up" Accounts

	29-May 1685	08-Dec 1688	31-Dec 1690	21-Jul 1694	05-Feb 1696
Reserves/Assets	57.9%	63.2%	48.2%	48.0%	59.1%
Assets, Total	129,191	105,802	161,383	118,031	138,153
Reserves	74,822	66,842	77,861	56,700	81,582
Ledger Bal (-)	24,750	29,487	35,387	24,684	25,945
Pawn Acct	29,619	9,473*	48,135	36,647	30,626
Liabilities, Total	124,014	130,186	160,635	109,869	189,666
Abstract Book			76,857	54,269	59,896
Ledger Bal (+)	124,014	130,186	79,478	55,600	69,501
Others			4,300		400
Net Worth	5,178	-24,384	747	8,162	8,355
Reserves, Total	74,822	66,842	77,861	56,700	81,582
Silver coin	40,128	37,225	46,373	38,692	19,749
Gold coin	12,357	5,784	9,763	2,555	19,898
Bills					17,648
Total Jewels,	22,337	23,834	21,726	15,453	24,287

*Estimated based on the May 29, 1685 Pawn Account balance of £29,619 less net accumulated receipts of £28,325 (£266,796 debits minus £295,121 credits from May 1685 to December 1688 plus £8,179 in interest, credit side, over the same period).

It is difficult to say whether Child was typical of London's goldsmith-bankers in either keeping his reserves to asset ratio in the fifty to sixty percent range or in lowering fractional reserves to fund expansion into government debt. The breakdown of Child's assets and liabilities comes from a "Casting Up the

Shope" book, a book separate from his ledgers and loan accounts. The book is exceptional by providing the only listing of a goldsmith-banker's gold and silver stocks known to the author. A banker's stock of cash is necessary for the reserve calculations in Table 4 so, at the present time, the capital levels of Francis Child are a unique insight. Beyond establishing that goldsmith-bankers were fractional reserve bankers, one can only extrapolate specific conclusions from Child to other goldsmith-bankers with care.

As a fractional reserve banker, Child could expand his lending by issuing notes or crediting accounts. The goldsmith-banker had great short run flexibility. The value of his paper debt to the public was enhanced by clearing arrangements with fellow West End bankers, such as Sir Thomas Fowle, and Lombard Street Bankers, such as Sir Stephen Evance and Sir Charles Duncombe [6]. Participation in the inter-banker system of clearing notes and checks (demandable debt) allowed goldsmith-bankers like Child to float notes more widely [20]. Child appears to have engaged in such credit creation, especially in 1689 and 1690.

Bearing unlimited liability and specializing in the ease of depositor access, Child's fractional reserve behavior left him vulnerable to runs. The constraint for Child, however, was not his daily cash flow. With fifty to sixty percent cash reserves, Francis Child could cover any typical day's demand for liquidity. Child was prepared to cover even the highest unexpected withdrawals [9]. Rather, substantial investment in government debt heightened the chance of a panic because of asymmetric information between Child and his depositors [3]. Even if a banker such as Child knew the future flow of payments looked promising, he was vulnerable to runs if his depositors feared government default. Political rumor or battlefield news could leave customers worrying about another Stop of the Exchequer. Not knowing how many tallies each banker held or each bankers' cash reserves, the deposit holding public could run on all goldsmiths known to have lent to the Treasury. Without knowing each banker's particular exposure to default, a macro shock could precipitate a general panic. Runs, for example, occurred in 1667 under the strain of the Second Dutch War [23].

Depositors were aware that the goldsmith-bankers were big lenders to the Crown but would have had difficulty knowing exactly how much each had loaned. Trudging to Westminster to examine the Exchequer's transfer books was a high monitoring cost. In fact, processing the transfer of tallies, collecting interest payments and the other aspects of dealing with the Exchequer were value adding specializations that kept depositors lending to bankers rather than loaning directly to the Treasury [23]. Monitoring would diminish a banker's value added as a specialized intermediary.

The liquid nature of Child's liabilities made a run a formidable concern. Approximately all of Child's liabilities were demand account balances. According to Table 4, the goldsmith-banker had about enough cash and plate on hand to cover a complete withdrawal of his checking accounts. Again, we cannot say if Child was an especially conservative banker relative to his peers, but the goldsmith-banker was prepared, even before taking on government debt, for a considerable run.

If Child's banking colleagues also kept substantial reserves, the Crown's ability to expand government debt was truly limited. While Child did make a

substantial shift towards holding tallies, the goldsmith-banker only bent his balance sheet so far. As the other intermediaries faced their own thresholds, Treasury debt issuance would have been constrained. Moreover, raising the premium of tallies was not a clear solution for the Treasury. Higher interest rates implied an increased burden in making payments which added to the likelihood of default. The possibility of default, or at least the public expectation of possible default, was already limiting private lending to the Treasury. Increasing rates might have attracted more funds but also would have heightened the fear of runs.

Conclusion

Francis Child responded to the Nine Years War by substantially reworking his investment portfolio. Credit was expanded, leverage increased and public debt added to private sector loans. Child, however, restrained his exposure to public debt and maintained sufficient capital to cover a substantial run. The goldsmith-banker also kept diversity in his portfolio by retaining loans to private individuals. Child's story suggests London's responsive private financial sector did not provide the war-pressured Treasury with all the credit the army and navy desired because the bankers feared the risk of runs.

The difference between what Francis Child and his colleagues could offer and what the Crown's paymasters required created the impetus for financial experiments such as the Bank of England. The bank, by design, purchased tallies with its capital from subscription. Bank of England stock was equity backed by government debt. The ease of transfer of Bank of England stock meant the bank offered liquidity that mimicked the goldsmith-bankers' value adding role as government debt intermediaries. Unlike Francis Child and the other goldsmith-bankers, the Bank of England held tallies as its overriding reason for existence. With the Bank of England, the King and Parliament circumvented the limitations of Francis Child and London's other existing financial intermediaries.

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