THE CONDITIONAL MIRACLE
Institutional change, fiscal policy, bond markets, and interest rates in Holland, 1514-1713[1]

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Abstract

The low issuing rates on public debt in early modern Holland have been taken as evidence that the political and fiscal reforms achieved during the second half of the 16th century raised the government's credit with investors to a degree unparalleled elsewhere. The very gradual decline of interest rates in the seventeenth century suggests that other factors must have played a role. This paper examines the market forces that shaped Holland's issuing policy. The growth of the Dutch economy was a vital ingredient because it created a thriving private capital market and a class of wealth owners who played the private and public markets fully as calculating investors do, considering options, weighing alternatives, and trying to exact the right price. Though the exploitation of this market for public finance purposes is generally seen as a remarkable example of statecraft, it is clear that the authorities embraced the market most reluctantly, as they kept looking for alternatives and attempted to roll back market forces as soon as circumstances permitted.

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Introduction

Dutch interest rates were the marvel of early modern Europe. Contemporary observers ascribed much of the Republic's commercial and military prowess to the cheap money available to entrepreneurs and public borrowers alike.[2] The low issuing rates on public debt count as a particularly remarkable achievement, because they have been taken as evidence that the political reforms achieved during the second half of the 16th century raised the Republic's credit with investors to a degree unparalleled elsewhere.[3] In addition to these political factors, fiscal interventions building investor confidence have been emphasized, such as the introduction of a new excise system and the careful distribution of debt by provincial tax receivers using their personal credit.[4]

The explanations based on political and fiscal changes fail to explain the very gradual decline of interest rates, however. Issuing rates dropped from eight per cent in 1600 to five per cent in 1640, after which it took another 85 years before they bottomed at 2.5 per cent. Thus factors other than the political and fiscal changes of the sixteenth century must have come into the equation. Moreover, a singular focus on the tax side of public finance fails to take proper account of how investors in fact reacted to institutional and policy changes. The same objection may be raised against a more macro-economic explanation which links the decline of interest rates simply to the Republic's rapid economic growth and consequent accumulation of wealth.[5]

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[2] S. Homer and R. Sylla, *A History of Interest Rates* (New Brunswick/London: Rutgers University Press 3rd ed 1991) 129 (citing Josiah Child); William Temple, *Observations upon the United Provinces of the Netherlands* (1668) 3rd ed. (London, 1676), 209-246; Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), I, Chapter 9, paragraph 10: "The government there borrow at two per cent, and private people of good credit at three".

[3] James D. Tracy, *The Financial Revolution in the Habsburg Netherlands. "Renten" And "Renteniers" In the County of Holland, 1515-1565.* (Berkeley, 1985); S.R. Epstein, *Freedom and Growth: The Rise of States and Markets in Europe, 1300-1750* (London: Routledge, 2000),

[4] Wantje Fritschy, "A 'Financial Revolution' Revisited: Public Finance in Holland During the Dutch Revolt, 1568-1648," *The Economic History Review,* 56 (2003) 57-89; Ibid., "The Efficiency of Taxation in Holland", O.Gelderblom, ed. *The Political Economy of the Dutch Republic* (Farnham: Ashgate 2009) 55-84; M. 't Hart ***; Maarten Prak and Jan Luiten van Zanden, "Towards an Economic Interpretation of Citizenship: The Dutch Republic between Medieval Communes and Modern Nation-States," *European Review of Economic History* 10, no. 2 (2006) 111-145, 134.; Ibid. "Tax Morale and Citizenship in the Dutch Republic", in: Gelderblom, *Political Economy,* 143-166; Jan de Vries, "The Political Economy of Bread in the Dutch Republic", in Gelderblom, *Political Economy*, 85-114.

[5] Jan de Vries and Ad Van der Woude, *The First Modern Economy. Success, Failure, and Perseverance of the Dutch Economy, 1500-1815* (Cambridge: Cambridge University Press, 1997) 116-117.

This paper seeks to widen our understanding of the factors driving the decline of Dutch interest rates by analysing the evolution of Holland's debt as shaped by a continuous interaction between fiscal policy and the market for public debt. Government officials juggling to balance the interests of two very different constituencies, tax payers and investors, faced a market where conditions could vary rather strongly. We examine that market through the different types of government bonds sold, the character of these debt issues, and the interest rates paid to investors. To structure our argument, we distinguish between three phases discussed in successive sections of the paper, i.e. 1514-1625, 1625-1687, and 1687-1713. Section 4 presents our conclusions.

The First Phase: Revolution Postponed, 1515-1625

As James D. Tracy has convincingly shown, the key feature of Holland's finance in the sixteenth century was the very gradual process in which the province acquired sufficient credit to approach investors directly and in its own name.[6] The province initially relied on the six main cities to raise money, or resorted to forced loans, which those same cities vigorously opposed on behalf of its citizens, who mistrusted paper issued by the prince or the provincial government.[7] The cities' borrowing record stretched back to the late Middle Ages, when they began selling term and life annuities during the late Middle Ages, as often as not to fund emergency expenditure or public works such as the construction of fortifications.[8] Despite occasional mishaps they enjoyed sufficient creditworthiness to build up impressive debts totalling 2 million Holland pounds in 1514, or an estimated eight per cent of Holland GDP.[9]

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[6] Tracy, *Financial Revolution*; Ibid. *The Founding of the Dutch Republic. War, Finance, and Politics in Holland, 1572-1588* Oxford University Press, 2007.
[7] Tracy, *Financial Revolution* 124-125.
[8] Van der Heijden, Geldschieters***; Jaco Zuijderduijn, "Medieval Capital Markets. Markets for Renten between State Formation and Private Investment in Holland (1300-1550) " (Utrecht University, 2007).; Cf. also M Boone, K. Davids, and P. Janssens, *Urban Public Debts. Urban Government and the Market for Annuities in Western Europe (14th-18th Centuries)* (Turnhout: Brepols, 2003)..
[9] De Vries and Van der Woude, *First Modern Economy*. 93.

behalf of its citizens, who mistrusted paper issued by the prince or the provincial government.[10] The cities' borrowing record stretched back to the late Middle Ages, when they began selling term and life annuities during the late Middle Ages, as often as not to fund emergency expenditure or public works such as the construction of fortifications.[11] Despite occasional mishaps they enjoyed sufficient creditworthiness to build up impressive debts totalling 2 million Holland pounds in 1514, or an estimated eight per cent of Holland GDP.[12]

The contours of a provincial debt began to emerge in 1482, when the six leading cities first sold 7.7 per cent term annuities for the province on their collective credit.[13] From 1515 this became a regular practice and during the next twenty years the cities raised a total of nearly 540,000 pounds in term annuities, now at the rate of 6.25 per cent.[14] The first issues of provincial debt proper occurred during the 1540s, totalling 158,000 pounds of term annuities at 6.25 per cent interest, funded by the revenue from various new taxes to be levied by the province itself, and not by the central government.[15] Around a third of the total was sold in neighbouring provinces of the Habsburg empire.[16] Placing debt outside of the province was a necessity because many Holland investors distrusted the government's financial policy and would not take annuities unless forced to do so. Voluntary buyers were found only in Amsterdam; the bulk of these issues had to be placed by having towns and villages take the paper in proportion to their share in the tax burden. Local authorities then had the choice between forcing their office holders or their wealthy citizens to buy the annuities. A special ledger listed the wealth holders

[10] Tracy, *Financial Revolution* 124-125.
[11] Van der Heijden, Geldschieters***; Jaco Zuijderduijn, "Medieval Capital Markets. Markets for Renten between State Formation and Private Investment in Holland (1300-1550) " (Utrecht University, 2007).; Cf. also M Boone, K. Davids, and P. Janssens, *Urban Public Debts. Urban Government and the Market for Annuities in Western Europe (14th-18th Centuries)* (Turnhout: Brepols, 2003)..
[12] De Vries and Van der Woude, *First Modern Economy*. 93.
[13] Tracy, *Financial Revolution*, 57-60. In the end Amsterdam opted out and issued its share in its own name so as to avoid the risk of being caught in financial problems caused by any of the others.
[14] Tracy, *Financial revolution*, 60-64; James D. Tracy, "The Taxation System of the County of Holland During the Reigns of Charles V and Philip Ii, 1519-1566," *Economisch- en Sociaal-Historisch Jaarboek* 48 (1985). p. 94. Amsterdam again opted out of the collective and issued renten in its own name.
[15] Tracy, *Financial Revolution* 86-91.
[16] Tracy, *Financial Revolution* 117.

targeted for buying.[17] Such lists had a long pedigree and they were to have a bright future as part of the groundwork for Holland's financial revolution.[18]

The public finance system introduced during the 1540s, i.e. a provincial debt funded on taxes levied by the Estates, proved successful in two crucial respects. By widening the tax base, the new taxes generated sufficient income for servicing the debts, which were redeemed with uncommon speed. This in turn boosted investor confidence in the debt, enabling the province to tap into wealth which had hitherto remained locked up. As a result the scope for issuing debt increased enormously. Despite difficult credit conditions the Estates managed to issue just over 1.2 million pounds of annuities during the years 1552-1559, 920,000 in term annuities, mostly at 8.3 per cent, and the remainder in life annuities with a buy-back option at 16.7 per cent.[19]

The newly founded investor confidence and the high interest rates combined to reduce the need for forced purchases, which accounted for only small amounts. Nearly half of the total debt issued was still sold outside the province, but the pattern of purchases inside Holland shows a marked widening of the investing public compared to the relatively narrow group subjected to forced purchases. Moreover, debt holders proved loyal enough to accept conversions from life annuities into term annuities and from high interest rates to the customary 6.25 per cent interest which started in 1556.[20] Annuities holders did not have the right to demand repayment, but they could sell their paper. There does not appear to have been a very active market. Local transfer ledgers and the debt ledgers of the Estates show only occasional transfers, as often as not following the liquidation of an estate.[21] Prices were considered unimportant; the Gouda transfer ledger shows only one instance, perhaps because the price of 86.3 per cent of par was thought exceptional.[22]

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[17] Tracy, *Financial Revolution* 110-124, 131-132.
[18] Tracy, *Financial Revolution* 87-91.
[19] Tracy, *Financial Revolution* 92-94.
[20] Tracy, *Financial Revolution* 96-97, 132-138, leaving the exact amount of forced purchases a little unclear.
[21] The Verleyboeken of Gouda, starting in 1548, reveal two transfers of Holland's losrenten in the 1550s: Gouda Archives, Inv 393, fol. 24r en 380v. For transfers recorded in the province's ledgers, Tracy, Financial Revolution 90n.
[22] Tracy, *Financial Revolution*, 90n..

Despite the success of the 1550s issues the amounts raised by the province proved insufficient to pay for its contribution to the ongoing war. The Estates had to borrow another 150,000 pounds on bonds or *obligaties* from Amsterdam merchants; in 1555, Amsterdam and Dordrecht appeased creditors of Charles V with a total of 120,000 pounds in bonds.[23] Though we do not know the wording of these bonds, they appear to have been stopgaps for an emergency situation, promissory notes issued on the credit of a corporate body or an official in its service pledging particular future revenues to redeem a specified debt.[24] Being basically unfunded, they carried a higher interest rate than term annuities. Moreover, bond holders had the right to demand repayment, which annuities holders did not. Because of the high interest rates the Amsterdam merchants showed no hurry to get their money back and the Estates attempted a conversion into annuities only in 1569.[25]

The Dutch Revolt cut violently across the evolution of a free provincial primary debt market. After 1572 Holland had to suspend interest payments on its outstanding debts, rendering the issuing of annuities impossible. In the following years the province could only meet the cost of fighting against Spain by obtaining credit from military commanders and contractors at very high interest rates.[26] Though gradually assuming responsibility for interest arrears and resuming part payment of interest, Holland remained unable to approach investors itself and had to rely again on the cities' ability to raise money from its citizens. Thus during the years 1584-1604 Amsterdam placed about one million guilders in loans for the province and other cities probably did likewise.[27] For the rest the province's finance reverted to the earlier patchwork of forced loans, wealth levies and short-term loans at high interest rates from merchants and army contractors.[28]

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[23] In 1569 the Estates consider redemption of obligations through the issue of annuities: E.H.M. Dormans, *Het Tekort. Staatsschuld in De Tijd Der Republiek*, *Neha Series Iii* (Amsterdam: NEHA, 1991)., 18; houtzager, 118. Tracy, *Financial Revolution* 17n*.

[24] Tracy, *Financial Revolution* 206.

[25] Dirk Houtzager, *Hollands Lijf- En Losrenteleningen Vóór 1672* (Schiedam: Roelants, 1950). 118-119.

[26] After 1570 confiscated church properties were used to satisfy borrowers: James D. Tracy, *The Founding of the Dutch Republic. War, Finance, and Politics in Holland, 1572-1588* (Oxford University Press, 2007). See also

[27] M. 't Hart, M. van den Burg, 'Renteniers and the recovery of Amsterdam's credit (1578-1605)', in: M. Boone, K. Davids, P. Janssens, ed., *Urban Public Debts, Urban Government and the Market for Annuities in Western Europe (14th-18th Centuries)* Turnhout: Brepols 2003) 197-218, ibidem 205.

[28] Fritschy, 'Financial Revolution' 74-76, Liesker and Fritschy, *Financiën Holland* 160-161, 362-365.

At one time money had to be borrowed from the English crown on the collateral of two cities and a fortress.[29]

From 1590 onwards rising tax receipts allowed a slow restoration of Holland's credit. Still, in 1594 and 1597 attempts to sell annuities on the free market largely failed, leading to a series of forced loans. Between 1599 and 1609 Holland raised an estimated 7.6 million guilders through wealth levies combined with forced sales of annuities, usually half-and-half term annuities at 8.5 to 9 per cent and life annuities at 11.1 to 16.6 per cent.[30] A 3.3 per cent duty on the transfer of annuities gave holders a powerful incentive to hold on to the paper imposed on them. [31] The forced loans helped to create the mainstay for the province's public debt in the form of regularly updated ledgers of wealth holders assessed for direct levies or forced loans, similar to the ones in use during the 1540s. Administered by the local receivers, the ledgers provided the authorities with the means to subject investors to a shave (levy) or a haircut (forced loan) if they turned down a loan offer. Successive internal memos analysing public finance hailed the ledgers as the province's oldest and most efficient means to raise revenue in time of need.[32]

Between 1598 and 1607, Holland also re-entered the free primary market to supplement the forced loans with an estimated 4.4 million guilders through sales of annuities and, for a similar amount, through the placing of *obligations* or bonds through the tax receivers.[33] The obligations evolved from a stopgap into a regular instrument of public finance. Bonds were originally floating debt instruments for terms of six to eighteen months, after which it was up to the bondholder to ask for repayment or to accept a roll-over, whereas with annuities the issuer decided whether to repay. Therefore by issuing bonds the authorities lost some control over debt management. This became

[29] Marjolein C. 't Hart, *The Making of a Bourgeois State: War, Politics, and Finance During the Dutch Revolt* (New York: Manchester University Press, 1993).; Fritschy, "Financial Revolution."
[30] Liesker and Fritschy, *Financiën Holland* 160; Dormans, *Tekort* 26.
[31] In 1593 the Estates of Holland decided to levy a tax on transfers of annuities (2.5 per cent) and bequests (5 per cent) . In 1598 the succession tax was lowered to 2.5 per cent and the transfer tax raised to 3.3 per cent: W. Fritschy and R. Liesker, *Gewestelijke Financiën Ten Tijde Van De Republiek Der Verenigde Nederlanden. Deel Iv Holland (1572-1795)*, ed. Instituut voor Nederlandse Geschiedenis, vol. 100, *Rijks Geschiedkundige Publicatiën. Kleine Serie* (The Hague: Instituut voor Nederlandse Geschiedenis, 2004). 380-381.
[32] Memorie van de financiën van Holland en West-Friesland (1755), http://www.inghist.nl/Onderzoek/Projecten/GewestelijkeFinancien/memorie; , 20 verso; cf. Liesker and Fritschy, *Financiën Holland* 160-161, 362-365.
[33] Liesker and Fritschy, *Financiën Holland* 160.

clear as early as 1609, when bondholders scuppered an attempted conversion of 7.1 per cent bonds into 6.25 per cent term annuities by simply refusing to hand in their paper.[34] The importance of bonds may be gleaned from the fact that, in 1609, Holland's debt stood at 17.5 million guilders, of which a quarter, 4.4 million guilders, in bonds.[35]

Investors preferred bonds to annuities because of their higher return and lower cost. Being issued on the personal credit of the local tax receivers and thus basically unsecured debt, bonds initially carried a higher interest rate than the funded debt of annuities. However, over time bonds nudged ever closer to the firmer status of the annuities, becoming associated with the credit of Holland itself and turning into long-term paper because investors clung to their paper. In 1611 the Estates recognized the convergence between the two instruments by scrapping the interest rate differential for new issues. As for cost, despite the increasing similarity with annuities, bonds remained cheaper and easier to transfer. Unlike annuities there was no need to submit bond transfers to the authorities and pay tax and a fee. Bonds could also be issued *in blanco*, i.e. without a name, to bearer. From at least the 1650s, and quite possibly much earlier, all *obligaties* were technically bearer bonds, since they carried a standard clause assigning ownership to a named person 'or bearer'.[36]

By selling obligations the authorities placed themselves more or less at the mercy of their creditors, who could withdraw their money at three months' notice.[37] For that reason they preferred to use annuities, urging receivers to place bonds only if no buyers for annuities could be found.[38] The receivers countered the danger of a roll-over crisis by staggering issues as much as possible, thereby also spreading their interest payments equally over the year to match the flow of revenues coming in. This appears to have been effective; roll-over crisis remained rare, only one instance being documented.[39] When in 1653 the first Anglo-Dutch war appeared to go against the Republic many bond holders gave notice. Several receivers, notably the one in the Hague, faced a serious shortfall

[34] Fritschy, 'Financial Revolution', 77-78.
[35] Dormans, *Tekort* 45; Liesker and Fritschy, *Financiën Holland* 180.
[36] Felix Hecht, *Ein Beitrag zur Geschichte der* ***Inhaberpapiere*** *in den Niederlanden* (Erlangen, Enke, 1869); Tracy, *Financial Revolution* 206.
[37] Cf. terms obl NA RSH; 3 months in bond St Gen pictured Dormans, *Tekort* 143.
[38] Dormans, *Tekort* 24, 58-60.
[39] There may have been one in 1631 as well, since the Estates discussed complaints that receivers sometimes refused to reimburse creditors: SH V, 1340.

between revenues coming in and bonds to be repaid. These bottlenecks were solved by transferring funds between the various offices and by having receivers work hard on their creditors to leave their money untouched with promises of prompt payments.[40] Within a few months the crisis had passed.

Though the bonds evolved into perpetuities, Holland retained a floating debt in the form of the *soldijordonnanties* or instructions for soldiers' pay, really promissory notes issued by the Estates to army contractors and by the Admiralties to ships' captains in lieu of payment for ordnance, goods, and men supplied.[41] The cities provided a second source of floating debt in the form of *anticipaties* or advances on taxes to be raised there. The total of Holland's floating debt appears to have been considerable. The Republic remained largely at peace following the 12 years' truce with Spain concluded in 1609; yet Holland's debt rose from 17.5 million guilders to 23 million in 1621, largely through the consolidation of debts contracted previously.[42]

The resumption of the war with Spain in 1621 pushed debts sharply to new heights. The introduction of new taxes notwithstanding budget exceedings amounted to several million guilders.[43] By 1632 Holland's debt stood at almost 56 million guilders, of which 10.7 million in 11.1 per cent life annuities, 10 million in 6.25 per cent bonds, and 35 million in term annuities with the same interest rate. Unfortunately the floating debt in *soldijordonnanties* and advances by the cities on wealth taxes levied remains out of sight; all we know is that the practice of having cities and provincial receivers advance money anticipating on tax revenues continued.[44]

The most striking feature of financial policy was, however, the switch from forced loans to free sales of annuities and bonds. During the early 1620s the Estates found it could rely on free sales in combination with wealth levies and the floating debt buffer. Market signals reached the meetings; in 1623 the Delft delegates resisted a new loan with the argument that local investors would demand higher interest rates.[45] Interest payments

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[40] Houtzager, *Lijf- en Losrenteleningen* 159; NA 3.01.05 Gecommitteerde Raden No. 3287, secret minutes 3 October 1653.
[41] Fritschy and Liesker, 'Overheidsfinanciën' 179-181.
[42] Dormans, *Tekort* 45.
[43]; SH I, no. 2656; SH II, no. 722; SH III, no. 758; SH IV, no's 17, 646, 993.
[44] Cf. for instance SH I, no. 2789 (1623), SH III no. 3106, SH IV, no. 649 (1625, 1627, 1628), SH V, no. 428 (1630).
[45] SH II, no. 456.

became a heavy burden indeed, notably in the case of bonds, which the Estates could not redeem and not easily convert. These factors rendered the option of forced loans at lower rates increasingly attractive. Moreover, the yield from wealth levies dropped because the 1602 ledgers had become outdated, so the target could no longer be tapped adequately.[46] The debate shows the Estates in a quandary, unable to decide on the lesser evil, the interest burden, the wealth levies, or forced loans.[47] A forced loan was considered in 1622, but dropped in favor of a wealth levy for the same amount.[48]

When three years later the Estates did issue a forced loan of 0.5 per cent of assessed wealth, the terms of the loan show a careful compromise between conflicting interests. The annuities issued carried a 3 per cent interest during the first six years, rising to the going rate of 6.25 per cent after that; they were also free from the 3.3 per cent transfer duty during the first three years. At the same time the Estates gave instructions to make the wealth tax more effective by updating the 1602 ledgers, so the loan was clearly intended as a one-off.[49] And so it remained. Though the Estates debated the option of a forced loan again in 1626, 1627, 1628, 1630, and in 1633-1635, each time they decided to levy a wealth tax instead, sometimes sweetened by letting the taxpayers have annuities for their contribution if they paid before a set date.[50] Subsequent debt issues were placed on a free primary market until the disastrous year 1672 necessitated raising emergency funding.

Thus 1625 marks the end of Holland's reliance on forced loans and the beginning of a new period in which the province would rely entirely on the free market. The Revolt of course provides the most obvious explanation for the long delay between the false start of the 1550s and the re-entry during the early 1600s. For most of the time Holland had little choice as to how it would raise the money for the fight against Spain. The failed conversion of bonds in 1609 shows that a market willing to buy and hold bonds and presumably annuities did exist, but the Estates used it only sparingly for reasons of cost, preferring forced loans and wealth levies. By 1621 the free market, buoyant with

[46] SH II, no. 1906.
[47] SH I, no. 2571, 2656, 2880.
[48] SH I, no.'s 2571, 2880.
[49] SH II, no.'s 1903, 1906, 1921.
[50] SH III, no.'s 3196, 3243, 3655, 3757, IV no.'s 316, 1050, 1179, 1271, 1691, V, no. 536, VI no.'s 17, 76, 494, 6696, 1303, 1362, VII no.'s D99, D130, E14, F84, G128. Taxpayers in Leiden complaining about missing out on the annuities in 1626: SH V, no. 1002.

prosperity built up during the Truce, clearly exerted so much attraction that forced loans were no longer an option, the slightly higher cost notwithstanding. The Estates considered the option repeatedly only to reject it, except for the 1625 loan which was part of a wider fiscal policy compromise. The Estates re-entered the free primary market somewhat against their will but unable to resist the temptation of the growing savings volume on tap there; at no point does civic spirit appear to have entered their considerations.

The Second Phase: the Free Market's Stretch, 1625-1687

As noted above, Holland's public debt increased sharply after the resumption of the war against Spain, reaching 56 million guilders in 1632; on the eve of the Peace of Westphalia in 1648 it had more than doubled to reach 125.5 million, excluding a floating debt of 7.2 million.[51] During these boom years of the Dutch Golden Age, the province could afford to let its debt slip, as rising tax receipts offered sufficient scope for rising interest payments. The urban delegates to the Estates, representing bond holders' interests, used the easing of the financial constraints to push for lowering the tax burden on wealth. The frequency of wealth levies dropped from almost annual during the 1620s to intermittent during the 1630s and 1640s, eight times in twenty years with sometimes large gaps in between.[52] As early as 1635 the wealth tax yield declined owing to the obsolescence of the 1625 ledgers, but the cities refused to sanction updating them.[53] The year before the cities had also turned down a proposal for a tax of 2.5 per cent on the interest from bonds and 5 per cent on income from other loans with the argument that the required opening of private administrations would cause a credit collapse.[54] Though wealth levies returned during the 1650s, the direct taxation of bond income had to wait another 30 years.

[51] Dormans, *Tekort* 47-48.
[52] Liesker and Fritschy, *Financiën Holland* 162.
[53] SH VII, no. G232.
[54] SH VI no.'s 1471, 1472.

The most telling development of this second phase was the rising volume of bonds into the single most important debt component by 1650, annuities remained more or less constant at about 50 million guilders (Figure 1). Though continuing to nurse a clear preference for annuities as being taxable and more manageable, the Estates evidently responded to the market preference for bonds by issuing them in rising volumes. By 1628 the two instruments were interchangeable for the purposes of public debt, which the Estates recognized by abolishing the small brokerage fee paid to receivers for their intermediation in selling bonds, which they did not get for the sale of annuities.[55] Bonds were now really perpetuities, but it took until 1635 before the receivers agreed to drop the small fee for roll-overs.[56] At around this time, bonds probably also turned into a formally funded debt by the insertion of a clause pledging all provincial revenues for interest payments and redemption.[57] Declining interest rates on the open market led as early as 1634 to plans for a conversion of term annuities and bonds from 6.25 per cent to 5, which finally took place in 1640. Investors were considered so keen to hold on their paper even at the reduced rate that the Estates reserved only 800,000 guilders to cover expected withdrawals on an estimated debt total of 94 million.[58]

[Figure 1 about here]

The ratio of debt to tax revenues pictured in Figure 2 brings out the importance of the free primary bond market for Holland's credit to good effect. Before the Truce, the debt to tax ratio barely touched three, that is to say, all debts could have been paid of with three years' revenues. The switch from forced loans to bond issues enabled Holland to quadruple the ratio to around 12 by 1650; thus, the second phase of the country's fight for independence entirely depended on its ability to tap into a free primary ma. The Estates clearly considered a ratio of 12 to be the limit. They tried hard to bring the ratio down

[55] Tracy, *Financial Revolution* 206; Fritschy ***.
[56] SH VI no.'s 1191, 1303, 1358, 1360, 1424, 1429; Vii no.'s B 65, 129, D 177, H 210, 24, I 403.
[57] NA 3.01.05 Gecommitteerde Raden No. 3287, secret minutes, 14 feb 1628, 21 jun 1634; 8 nov 1640; 2 mrt 1643; 13 mrt 1654 Chk. ***wording bonds NA RSH, nature of reimbursement deeds; compare Dormans 143.
[58] Tracy, *Financial Revolution* 209-210; Dormans, *Tekort* 65.

and succeeded only when, at the end of the 1680s, they introduced radical new taxes, about which more below.

[Figure 2 about here]

One wonders whether the Estates could have achieved this remarkable credit extension by issuing annuities rather than bonds. Given the market's clear preference for easily transferable paper Holland would have needed to scrap the transfer formalities and 3.3 per cent duty for annuities, something the authorities clearly did not want to do. We do not know whether their unwillingness rooted in financial reasons or in administrative considerations, i.e. the desire to retain some form of control over the debt issued. As it was, by keeping the restrictions Holland effectively locked its annuities into a relatively small market segment. Data from Gouda demonstrate this phenomenon to good effect (Figure 3). The annuities transfers recorded in ledgers kept by the city secretary show very little activity until the 1650s. In 16 years between 1613 and 1650 nothing was transferred at all; in 12 more years, only one or two annuities changed hands. The nine remaining years saw three or four transfers, exceptionally five or seven, for amounts in the hundreds of guilders rather than in the thousands. Moreover prices, if recorded, were invariably at par. From the early 1650s we see a noticeable increase, the number of transactions reaching double figures for amounts totalling 6,000-20,000 guilders. On a few occasions during the second half of the 1650s prices dipped under par: 98 per cent, 96 per cent, 93 even. Investors appear to have wanted to move from annuities into bonds, which in December 1654 were reported to the Estates as trading at 105-107 per cent, the first instance we have of the authorities gauging the secondary market while debating policy.[59]

[Figure 3 about here]

The annuities, then, catered for a specific market segment, i.e. investors with a long time horizon who could afford to hold the paper long enough to cancel out the penalty on

[59] Houtzager, *Lijf- en Losrenteleningen* 163-165.

transfers. Once this segment had absorbed about 50 million guilders, i.e. the amount reached in the early 1640s, investors would take no more and the Estates found they had to issue debt in the form of obligations. This buy-to-hold character anchored prices in the annuities segment firmly at par until the shock of 1672, about which more below, united it with the much bigger and more volatile bonds segment.

When the Peace of Westphalia (1648) relieved the strain on Holland's finances, the authorities immediately started preparing debt consolidation through a conversion of floating debt and bonds into annuities plus a reduction of interest rates. In 1652 a first attempt to create a redemption fund by reducing the interest on annuities and bonds from five to four per cent for at least one year raised such a storm in the Estates that the nobility asked for the subject not to be brought up again for another two to three years. The land tax was increased by 50 per cent instead, a clear instance of the cities as representatives of bondholders' interests shifting the burden to other, less well represented interests.[60]

The First Anglo-Dutch War (1652-1654) then cut across further initiatives at debt reduction until 1654. A report to the Estates on Holland's financial situation from December of that year claimed that there was room for a lowering of interest rates because bonds were trading at 105-107 per cent of par, the first instance we have of the authorities using market data in support of financial policy.[61] In August 1655 the Estates, overcoming the strong opposition from some cities, reduced the interest rate from five to four per cent, reserving the money thus saved for a redemption fund. The drafting of a rank order for repaying creditors shows a clear concern with the impopularity of debt redemptions: foreigners would be repaid first, then bond holders who had given notice in 1653, then investors living outside Holland, and inhabitants proper only in the last resort.[62] The redemption plan envisaged the extinction of Holland's entire debt in just over forty years, but in the end it failed to make a dent because new emergencies quickly absorbed the available funds.[63]

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[60] Houtzager, *Lijf- en Losrenteleningen* 155-157.
[61] Houtzager, *Lijf- en Losrenteleningen* 163-164.
[62] Houtzager, *Lijf- en Losrenteleningen* 167.
[63] Dormans, *Tekort*, 53, 55, 85, 88, 91, 105-106; Liesker and Fritschy, *Gewestelijke financiën Holland*, 365-366.

With the easing of market circumstances the old aversion to bonds immediately resurfaced. During 1657-1658 the Estates repeatedly discussed a radical debt restructuring through a wholesale conversion of bonds into annuities, the main arguments being raising the transfer duty revenues and gaining greater control over the debt.[64] No decision was taken, but the small amounts of debt issued during the 1650s and 1660s were all in life- and term annuities.[65] This sufficed to pay for the Second Anglo-Dutch War (1665-1667), but the three-pronged attack by Britain, France and two German princes in 1672 posed a problem of an entirely different order altogether. Needing funds instantly without having the time even to wait for the market to take up bonds voluntarily, Holland took recourse to forced loans using first the wealth tax ledgers last updated in 1654. When the yield proved too low, the authorities brought real estate from the land tax registers and public bonds sold before 1672 into the assessment. Between 1672 and 1675 Holland raised 10 million guilders in free loans plus nearly 25 million guilders in forced loans, seven per cent of the estimated wealth in real estate and public securities.[66] Though preferring to issue annuities, the province now had to issue the loans in the form of bonds, and these bonds were exempted from further assessments.[67] Once the most pressing danger had lifted in 1675 the province stopped issuing forced loans and reverted to its customary reliance on a free primary market, although it did use the ledgers once more for levying a 4 per cent wealth tax.

To ease the squeeze on liquidity created by the forced loans, the authorities accepted payments in bullion and precious metal objects. Even so the squeeze led to a fire sale of term annuities, jolting them from their secluded segment with stable prices (Figure 4). Between 1673 and 1679 more than six per cent of term annuities sold in Gouda and Leiden changed hands. Prices dropped to an average of 75 per cent in 1673 and started a

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[64] Houtzager, *Lijf- en Losrenteleningen* 169-170.
[65] Dormans, *Tekort* 60-62; ***chk minutes SH for arguments against restructuring.
[66] NA 3.01.29 Financie Holland inv. no. 802; Dormans, *Tekort* 70, puts the total value of forced loans at 24.7 million in the years 1672-1675, 95 per cent of which was raised through wealth taxes totaling 5.5 per cent of estimated wealth. According to Liesker and Fritschy the wealth taxes used to this purpose between 1672 and 1675 amounted to 7 per cent of total wealth: 1672: 2 per cent; 1673: 1 per cent; 1674: 3 per cent; 1675, 1 per cent; Liesker and Fritschy, *Gewestelijke financiën Holland*, 366, 368.
[67] *Memorie* (1755), p. 34. To save cash Holland also paid half of the interest due in bonds rather than money. At 3.8 per cent, the effective interest rate in 1670 and 1671, total interest payments between 1672 and 1675 would have amounted to 15.2 per cent of the debt outstanding in 1672. With wealth levies of 7 per cent only 8.2 per cent of the interest had actually to be paid.

slow recovery only with the return of peace at the end of the 1670s. Bond prices probably followed a similar trajectory, though at a slightly higher level to compensate the 3.3 per cent duty on annuities. Consequently receivers had difficulty in finding buyers for 4 per cent bonds; as late as 1678, the Rotterdam receiver could raise money only by offering 5 per cent bonds.[68]

With the Peace of Nimwegen in 1678 Holland could begin to restore its finances. The provinces badly needed a structural raise in revenues and in 1680 the Estates took a first step by raising the rate of the excises and the real estate tax in combination with a wealth levy of 0.5 per cent. This last tax was levied only once, presumably because bondholders felt they had paid enough, transferring seven per cent of their recorded wealth to the state through the forced loans of 1672-1675. The government's attempt to cut interest rates through the wealth levy probably followed market signals, however. We still lack a long-term series of private interest rates but a small portfolio of 67 loans extended by one Amsterdam merchant banker on the security of shares in the Dutch East India Company between 1673 and 1683 suggests that the best credit risks paid 3.5 per cent in 1677 and as little as 2.5 per cent in 1683.[69] This then would suggest that the government, by keeping the public rate at four per cent, either tried to compensate bondholders for the capital losses they had suffered earlier, or simply that it had no choice but to thread very carefully in a market that was still recovering from a major distortion.

[Figure 4 about here]

It was not until 1687 that the Estates took a momentous step and introduced a 0.5 per cent tax on public debt interest payments deducted at source by the receivers, which was doubled to 1 per cent in 1688. Only charitable institutions were exempted. Such a withholding levy had been used six times between 1584 and 1607, but fallen into desuetude since. A proposed reintroduction had raised such a storm that the Estates

[68] City Archives Rotterdam, ORA, 1a, inv nr 3687, fol. 131-134. The 5 per cent bonds were converted to 4 per cents in 1680 (Ibid. fol 140-142).
[69] Courtesy Lodewijk Petram.

quickly dropped it in 1653, until the 1672 emergency cleared the way for two withholding levies in successive years. By 1687 the time had come. After the excises and the real estate tax had been raised in 1680 there was no escaping the need to target wealth holders on a regular basis as well. Compared to the blunt knife of the ledger-based wealth levies with their built-in obsolescence, a withholding tax was a scalpel, easier to impose, more efficient, and cheaper to raise. At the same time the adoption of this tax signalled that the Estates considered bondholder-ship a fair proxy for wealth, i.e. ownership was spread sufficiently wide over the population for the tax to result in an equitable assessment. Finally, market circumstances offered room for an interest reduction, for Gouda annuities nudged par in 1685, so the bonds must have sold some points above that.

The 1687 withholding tax marks the end of Holland's Golden Age of public finance. After the fiscal measures of the 1680s the province once again possessed a quite manageable debt of some 150 million guilders, less than ten times revenues, and with interest payments absorbing less than half of those revenues. The debt was also fairly homogeneous, consisting of 45 million guilders in term annuities, 105 million in bonds, and a negligible amount in life annuities. Though the prospects for debt redemption had receded over the horizon, investors did not care and clung to their paper. Indeed, capital remained so abundant that the authorities could achieve an interest rate reduction with the withholding tax, though of course the scalpel proved to be double edged in raising the price of new issues with a similar percentage. However, Holland's Golden Age was waning. Though historians disagree about the timing and the severity of the decline, economic growth slowed down somewhere during the last quarter of the 17th century and the population stagnated, reducing the stretch of fiscal resources. A new, prolonged war would push the country beyond the limits. At the same time 1687 marked the end of the bondholders' golden age. Until then bondholders succeeded, via their political representatives the cities, in blocking any attempts to tax revenues from bonds. From 1687 these massive transfers from excise payers to bondholders were gradually reduced, lessening a fundamental iniquity of Holland's fiscal system.

The Third Phase: the Double-Edged Scalpel, 1688-1712

Thus Holland's public finance system had just passed its prime when William III exported it to Britain as the perfect model to adopt. Termed *Dutch Finance* by English commentators, the new system introduced by William III involved a switch from short-term borrowing by the King from a small group of magnates to a long-term, funded debt sanctioned and guaranteed by Parliament and sold to a gradually widening circle of investors.[70] Armed by a similar system of public finance, Britain and the Netherlands embarked on a long series of wars against France.

At the start of the war, Holland resorted to its usual round of tax increases to pay for its defence. The rates of the real estate tax and the excises were considerably raised and the withholding levy on interest payments was doubled in two steps to 2 per cent, so that by 1690 investors suffered an annual shave of a similar magnitude to the forced loans of the 1670s. According to some explanations Holland bondholders bore this stoically, accepting that the need to counter the French threat to the country's trade demanded sacrifices.[71] Nor did investors have much option, given yield reductions on alternatives such as real estate by similar tax increases and the only gradual emergence of investment opportunities in British securities.[72] However, the data on annuities transfers show a continuous tussle between the authorities and investors about the yield on public debt (Figure 5). The market initially absorbed the reductions of 1687-1690, but after a few years prices dropped. The Estates responded to the erosion by halving the withholding tax in 1698, and annuities prices veered back. The return of the 2 per cent rate in 1702 clearly disappointed investors and prices fell gradually until 75 per cent in 1712, giving a 3 per cent yield. By that time even a half per cent tax reduction was not enough to restore prices.

[Figure 5 about here]

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[70] P.G.M. Dickson, *The Financial Revolution in England : A Study in the Development of Public Credit, 1688-1756* (London: 1967). 1967

[71] De Vries and Van der Woude, *First Modern Economy*.

[72] ***ref Carter.

The market resistance to interest rate reductions is also evident from the incentives which Holland increasingly needed to sell new issues. Debt nearly doubled from 160 million guilders in 1690 to almost 300 million at the Peace of Utrecht in 1712. From the start new issues were exempted from the withholding tax, initially for the duration of the war, a period extended for some loans to ten years after the war.[73] There are also signs that receivers sweetened issues for investors by exchanging any old bonds for untaxed new ones.[74] In 1710 and 1711 Holland issued 20-year bonds at 9 per cent, of which 4 per cent interest and 5 per cent amortization.[75] When the market for 4 per cent bonds appeared exhausted, Holland negotiated a 1.5 million loan at 4 per cent from the Canton of Bern, and then it adopted a successful British innovation, lottery loans, issuing lottery bonds totalling 24 million guilders in 1711, 1712 and 1713.[76] With these incentives Holland entered a vicious circle of its own making, for the transfer data demonstrate that the incentives were counterproductive (Figure 4, 5). The market responded simply by discounting incentives from the price of the old debt issued before 1690, pushing down prices and thus necessitating new incentives.

By 1712 Holland had finally exhausted its credit. Every imaginable tax resource was tapped to the limit; the provincial debt absorbed two-thirds of revenues, and annuities prices had reached a nadir at 75 per cent of par. Moreover, the homogeneous debt of 1687 had been transformed into a patchwork consisting of 160 million guilders of old annuities and bonds and 140 million in bonds with widely differing conditions, ranging from tax exemptions of varying length to lottery tickets with widely different chances. It would take another 25 years before Holland could again issue 2.5 per cent bonds.

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[73] NA 3.01.29, financie holland, Inv no. 856, 16 mrt 1690; 1 aug 1693; 1 feb 1694; 6 feb 1694; 9 jul 1694; 26 jul 1695; 26 oct 1695; 18 nov 1695; 17 dec 1695; 18 aug 1696; 8 feb 1697; 19 jun 1697; 2 aug 1697; 21 apr 1698: ***add 1697-1712.

[74] “Helmette [Cornelis de Jonge van Ellemeet, transl.] the receiver-general who is in charge Adrianus Engelhard Helvetius, "Mémoire Sur L'état Présent Du Gouvernement Des Provinces Unies," in *The Low Countries in Early Modern Times. Selected documents. London/Melbourne: Macmillan 1972*, ed. Herbert H. Rowen (London/Melbourne: Macmillan, 1972 (1706)).: “ ;NA 3.01.29 Financie van Holland.

[75] NA 3.01.29, financie holland, Inv. Nr. 861; ***add Resoluties ref.

[76] Dormans, *Tekort*. 77. NA 3.01.29, financie holland, Inv Nr 863, fol. 19; cf. **Fokker, *Loterijleningen*.

Conclusion

Between 1500 and 1713 Holland created a long-term debt of unprecedented size. During the first half of the 16th century, collective debt issues by the six leading cities amounted to several hundreds of thousands guilders only, with the town magistrates intent on the full redemption of these debts. Two centuries later, in 1713, the total debt stood at 300 million guilders, twice Holland's estimated GDP at the time. Any hope of redemption had long evaporated; debt management focused entirely on servicing the debts, which was difficult enough. At the same time interest rates more than halved. In the 1550s Holland had to pay six to eight per cent on the term annuities it sold whereas in 1700 the yield of government bonds barely exceeded three per cent.

The foundation of Holland's financial success was a political regime change effected in the sixteenth century, in particular the establishment of provincial control over excises. Without the secular rise in tax revenues the Dutch government would never have been able to raise the funds necessary to secure Dutch independence. However, political and fiscal changes alone cannot explain the emergence of a free market for government bonds. The growth of the Dutch economy was an equally vital ingredient because it created a thriving private capital market and a class of wealth owners who played the private and public markets fully as calculating investors do, considering options, weighing alternatives, and trying to exact the right price. It was up to the government, however, to choose between taxing and borrowing from the new elite.

Forced loans are the key to understanding the development of Holland's public finance in the 16th and 17th centuries. Once individual cities had accepted to record the estimated value of the property of their citizens, the province had at its disposal a simple instrument to force wealth owners to choose between accepting a tax or to buy securities. This practice financed the first phase of the Revolt against Spain and created a widening circle of investors used, even if against their will, to holding securities. Though bondholders could sell their debt titles, few of them did, partly because of the transfer duty cost, partly because the annuities did offer an attractive store of wealth and a steady income.

The frequency of forced loans changes our perspective on the development of Holland's early finances. Following Tracy's seminal work on Holland's 'financial revolution' it has become quite common to compare the early success of Dutch public debt management to that of England after the Glorious Revolution. To our mind, however, up to 1625 Holland's public debt management looked rather like that of the Italian city states. Just like in Venice, Genoa, Florence, and some smaller towns in northern Italy, the creation of a consolidated public debt originated in forced loans. In both regions town magistrates drew up detailed tax registers which enabled them to force either wealth taxes or loans upon citizens.

Thus, in Holland, the switch from coercion-intensive to capital-intensive came rather later than has until now been thought. The provincial estates departed only from the 'Italian model' after 1625 when an expanding money market proved willing and able to absorb large amounts of bonds at competitive rates, rendering the political wrangling needed to obtain the unpopular forced loans unnecessary. To fund military operations in the next twenty years the province more than doubled its debt, and, more importantly, acquiesced in the establishment of a funded debt with tax revenues being reserved for interest payments rather than debt redemption. Therefore Holland owed its military success in the second phase of its fight for independence ultimately to the economic growth which created a growing supply of capital feeding into a free bond market. Moreover, though Holland's exploitation of this market for public finance purposes is generally seen as a remarkable example of statecraft, it is clear that the authorities embraced the market most reluctantly, for they constantly sought alternatives and attempted to roll back market forces as soon as circumstances permitted, for instance during the 1650s. If they ultimately failed in their efforts, it was not for the want of trying, but the consequence of the Dutch Republic's constant involvement with European warfare in order to defend its political and economic position.

The forced loans of the 1670s were at the same time a continuation and the final application of financing public expenditure by drawing on registered private wealth. In less than four years Holland managed to borrow 25 million guilders but the liquidity squeeze caused by these loans also marked the beginning of an integrated secondary market for public debt, as the formerly stagnant annuities segment burst into life. In the medium term the market proved very resilient. Annuities prices quickly recovered, underlining the fact that the limits to Holland's debt lay with its ability to service the loans, and not with the market's capacity. To extend these limits the Estates conducted a major tax review during the 1680s which included for the first time a levy on interest rates on bonds and annuities at source, ending the privileged position of bondholders and inaugurating a recurrent tussle between the authorities and the market about the percentage of the levy.

The Dutch Finance which William III transferred to Britain reached its limits in Holland during the wars against France of the years 1688-1713. The market remained willing enough to take new issues, but at a price determined by the level of the withholding tax, blunting the knife which the province had obtained before. By 1710 the Estates had to devise ever more desperate means to attract buyers and increasingly desperate fiscal measures to service the new issues. At the negotiations leading to the Peace of Utrecht it became clear to all concerned that the Dutch Republic had moved to the side of the European stage for a want of means to retain a more central position.

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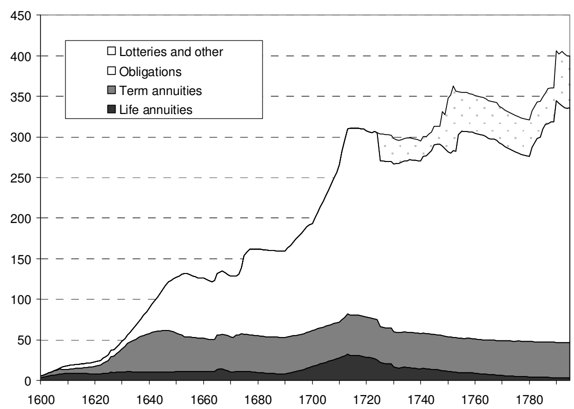
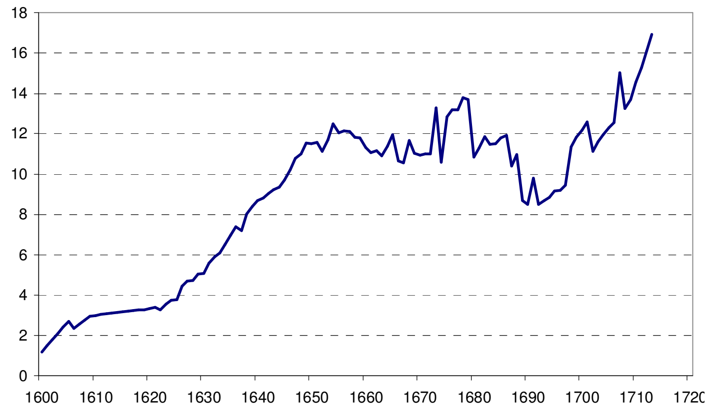
Figure 1. The estimated value of life-annuities, term-annuities, and obligations sold by the Province of Holland between 1600 and 1800 (in million guilders).



Source[77]

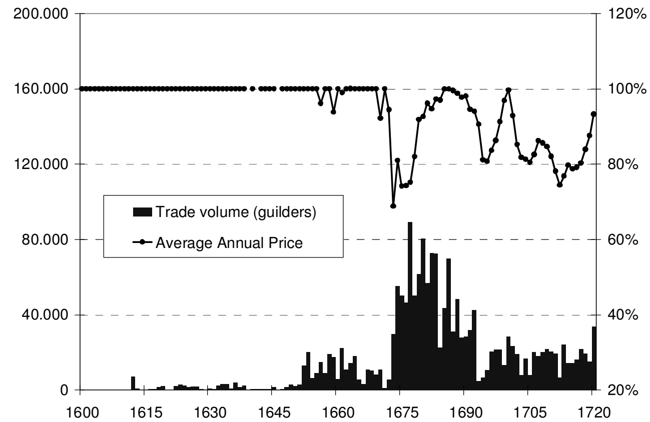
[77] Dormans, *Tekort*, pp. 24, 58, 65-66, 80-81, 110-111; Resoluties Staten van Holland 1600-1620. Note that Dormans' estimates for the years 1600-1670 do not include a breakdown of total debt in its constituent parts (i.e. life- and term annuities, and obligations). These shares can be estimated, however. To do so, for the years 1600-1632, we used the sales of obligations recorded in the Resolutions of the States of Holland, combined with the reported share of these obligations (and life annuities) in 1632. We assume that the share of life annuities in this period declined at the same speed as it did between 1632 and 1652 – which brings their estimated share at 62 per cent in 1600. We calculated the share of obligations on the basis of the value of obligations sold between 1604 and 1619 (assuming there were no outstanding obligations before 1604). Given that the share of obligations in 1619 (estimated at 25 per cent on the basis of the resolutions is higher than that estimated by Dormans for 1632 (19 per cent), we report an (unlikely!) temporary decline of their share in the second half of the 1620s. The relative shares of the three debt components between 1632 and 1653 are interpolated from two point estimates for 1632 and 1653 (Dormans, *Tekort*, 58), while both shares are presumed constant at the 1653 level until 1670. Data for 1668 and 1669 are lacking; the value of the different debt components is interpolated from the 1667 and 1670 data. The estimated share of obligations and term annuities between 1670 and 1725 is based on the relative shares of these two components in the southern part of the province (Zuiderkwartier). After 1725 the relative share of all three components (life-annuities, term-annuities, and obligations) is based on estimates for the Zuiderkwartier.

Figure 2, The ratio of debt to tax revenues in Holland, 1600-1720



Sources: Dormans, *Tekort* (compare figure 1) Liesker and Fritschy, *Financiën Holland*.

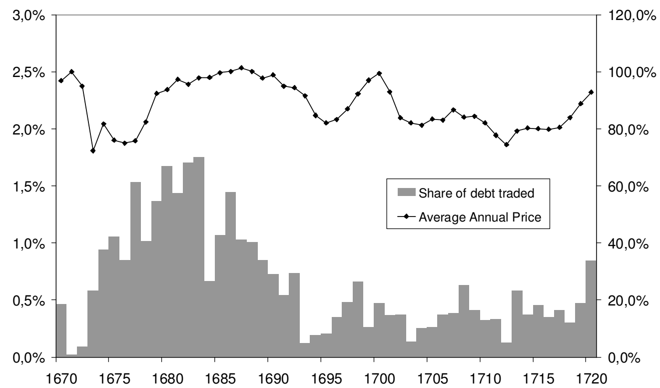
Figure 3. Transfers and prices of Holland's losrenten recorded by Gouda's town secretaries, 1600-1795



Source: [78]

[78] Gouda Archives, Oud-Rechterlijk Archief, Inv. Nrs. 482-493.

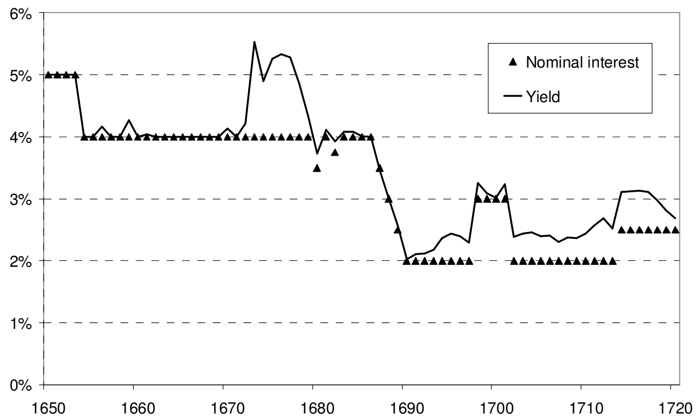
Figure 4. The annual average price of Holland's losrenten in Gouda and Leyden and the value of losrenten sold as a percentage of the total debt outstanding in the two towns.



Source[79]

[79] Gouda City Archives, Oud-Rechterlijk Archief, Inv. Nrs. 482-493; Leyden City Archives ORA 71-73.

Figure 5. The nominal interest rate and the yield on Holland's losrenten, 1650-1720



Sources[80]

[80] Liesker and Fritschy, *Financiën Holland* 368-371; Gouda City Archives, Oud-Rechterlijk Archief, Inv. Nrs. 482-493; Leyden City Archives ORA 71-73.