

Dutch Securities for American Land Speculation in the Late-Eighteenth Century

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Abstract: The end of the 18th century was one of the most innovative periods in the history of securitization. Public markets for mortgage-backed securities are among the most interesting of developments of the period. In The Netherlands, a network of merchant investment bankers developed sophisticated methods for structuring loans based on overseas properties as collateral. In 1793, the Holland Land Company issued two structured notes to purchase millions of acres in Western New York and in 1794 the purchase and development of property in the newly-designated capital city of Washington D.C. was financed by mortgage-backed bonds underwritten by Dutch merchants. These securities raise questions about why investors trusted in the value of overseas property as collateral, and whether the expected rates of return on the instruments were commensurate with their risk.

In our analysis, we address these questions by exploring how the early mortgage-backed securities were based on earlier collateralized fixed income instruments in the Dutch market, as well as on other 18th century experiments with collateralization of land. We argue that these innovative securities resulted from an institutional framework that easily accommodated novel fixed income issues, and came on the heels of large gains to market speculation in American debt.

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I. Introduction

Dutch investors have historically played an important role in American finance. The financiers of the American Revolution turned to the Dutch markets for loans to support their war effort and, with Hamilton's visionary restructuring of the American debt, the Dutch early faith in American promises paid off handsomely. On the heels of their successful financial investment in early U.S. government bonds, Dutch investors in the 1790's turned their attention – and money – towards the speculative potential of the American land itself. Two of the most important foreign investments in American land development prior to the 19th century were the Dutch loans for the purchase of vast tracts of lots in the newly designated capital city of Washington D.C., and the Holland Land Company loans to purchase, promote, develop and resale large sections of Western New York State, including tracts that included the future Erie canal. Both of these projects were financed by the public issuance of securities that traded on the Dutch capital market.

While Washington D.C.'s early development and the operations of the Holland Land Company have both been studied from the perspective of American economic history, few studies have taken the perspective of Dutch investors, and asked what motivated them to invest, what precedents existed for these novel and presumably highly risky ventures, how their investment fared over time and what impact the experience had on future securitizations. The loans offer a rare opportunity to study the process of financial innovation – particularly innovation in the collateralization of real property.

In 1793 and 1794, complex several debt securities called “negotiates” were floated in the public capital markets of Amsterdam and Rotterdam to finance the two American land projects. The Washington D.C. loans were made to the American financier James Greenleaf who had earlier been instrumental in arranging U.S. loans on the Dutch market. The Holland Land Company Loans were made to a consortium of leading Dutch merchants, many of whom had been involved in underwriting and pooling U.S. government debt issues in the Dutch market.

The land negotiates involved multiple forms of collateral to address different types of risks implicit in the investment, as well as legal and custodial arrangements designed to mitigate fraud and operational failure. In this chapter we examine the terms, conditions, markets and legal framework of these securities. We document their financial precedents and show how they relied on the rapidly evolving financial institutions of the time.

Our analysis tells the story of both success and failure. The first land venture capitalized by public securities – the Holland Land Company -- survived for more than half a century and generated substantial economic returns to investors, however a structural reorganization within a decade of its creation was necessary to make it work. The second – the James Greenleaf venture to buy and develop lots in the District of Columbia, ultimately defaulted and the ensuing transatlantic legal dispute over the collateral dragged on for decades. Dutch investor losses arose not only from default, but also from fraudulent manipulation by the Greenleaf and ineffective protection of their rights by the American legal system which significantly reduced recovery from the collateral.

We argue that the re-structuring of one set of securities and the failure of the other is due to the path-dependency of Dutch financial innovation and the mis-match between fixed income financing and land speculation. Although the market in late 18th century Holland had apparently become comfortable with mortgage-backed securities, perhaps it should not have been. Equity finance, as opposed to debt finance, might have better served investors. Consistent with this hypothesis, we show how both firms sought to convert to equity-like financing in the years after issuance. The Holland Land Company company used a technique previously employed to provide a residual claim on assets in a closed-end portfolio. Greenleaf and his fellow entrepreneurs in the Washington D.C. enterprise, Robert Morris and John Nicholson, attempted to convert their debt obligations to equity via an initial public offering of equity shares in the North American Land Company shortly after the floatation of the mortgage-backed securities, but were unsuccessful.

Our use of historical evidence to examine financial innovation is not new. A number of researchers have pointed out that there is much to learn about mortgage securitization from the historical mortgage market (c.f. White, 2009, Snowden 1995 and 2009, Fishback et. al. 2001, Goetzmann and Newman, 2010), and Gorton (2009) observes that the crisis of 2008 is best understood in the context of a classic banking panic, which a slightly altered institutional structure. The benefit of focusing on the late 18th century Dutch market is that the process of innovation can be clearly traced in historical documents and in public security price quotations. The richness of the historical material allows us to identify specific precedents to an innovation. It also allows us to observe the social and business network in which the innovations appeared and diffused.

II. Historical Background

Our overview of the 18th century Dutch capital markets is necessarily brief and will focus on the appearance of publicly traded, collateralized financial instruments which is the specific context in which the innovation we study appears.

Asset-Backed Securities

An important precedent for the American property securities studied in this paper is a class of loans collateralized by the revenue stream of the sale of commodities. An early example of a loan in the Amsterdam market collateralized by a commodity is the 6% 1659 publicly issued security by Johan Deutz to the House of Austria, which was financed by a loan issued at 4%, and collateralized by a monopoly given to Deutz over the product of Austria's rich quicksilver mines. In effect the loan was a means to secure the monopoly, rather than the principal source of profit by Deutz.¹ The demand of commodity security for a loan is not surprising in this example, but the financing of the

¹ Barbour p. 109.

transaction by Deutz's loan issue is noteworthy in that Deutz's credit was enhanced not only by the commodity but his ability as a merchant to benefit from the monopoly and thus reduce the uncertainty of loan repayment.

This commodity-backed structure eventually became a standardized financial product in the Amsterdam market. In the early 18th century, Dutch merchants faced a competitive global market for key commodities from the Americas – particularly sugar and coffee. The erosion of the monopoly of the Dutch West Indies Company over Atlantic trade to the Netherlands led to the emergence of independent plantation-owners in Surinam, Essecaibo and Demerary and in certain Caribbean Islands such as St. Eustacia. These independent plantations were financed with innovative securities for which the Deutz Austrian Loan set a clear precedent. From 1753 to 1795 (when the Dutch relinquished sovereignty over their South American plantations), Dutch merchants floated over 240 “plantation loans” in the public markets. These were debt investments in sugar plantations of Dutch South America and the Caribbean that were collateralized by mortgages on the overseas properties (including land, slaves and capital equipment), and the annual commodity production of the plantation.²

An interesting feature of plantation loans is that the merchants in the commodities trade functioned as financial intermediaries in what we might now call “structured products” which were broadly referred to as negotiatives. The merchant underwrote the issuance of the loans to the public and served as the administrator and servicer, and as the merchant for the commodities on the exchange. His compensation was a commission on sales of the plantation produce while the rest of the sale proceeds were used to service the debt. Van der Voort (1973) notes that the typical interest rate paid by the planters was 5% to 6% and the rate paid to bond holders was fixed as well. The first of the plantation loans was floated by William Gideon Deutz in 1753 – evidently building on his firm's knowledge and reputation from the Austrian loan. This innovation spread to

² Van der Voort (1973) is a detailed study of the Dutch plantation loans from which this discussion is taken. See the English summary pp. 218-221. A recent masters thesis in English is Hoonhout (2012). The role of the plantation loans in Dutch financial development is discussed in Rouwenhorst, 2005.

other issuers. According to Van der Voort, ultimately 76 to 80 million guilders of plantation loans were issued by a large number of merchant houses and standard measures of investment safety were applied in the issuance – including a maximum loan to value ratio. They took many forms, and issuers would often pool the mortgages from several plantations into a single negotiatie.

A drop in commodity prices in 1771 and a financial crisis in the Amsterdam market in 1773 led to widespread defaults on plantation negotiaties, and a drop-off – though not a complete disappearance -- in their issuance. Van der Voort estimates that investors suffered substantial losses; recovering only $\frac{1}{4}$ of their capital and realizing no more than 3% interest. This event was undoubtedly the first mortgage-backed securities crisis. It is interesting from an institutional standpoint because it revealed to the Dutch market the potential for the failure of collateralized bonds to guarantee full or even significant recovery of capital. In addition, it caused the restructuring of fixed income claims, including the issuance of equity-like certificates. This model of converting debt to equity was evidently not limited to plantation loan defaults. A security from 1776, recently acquired for the Yale Collection of Financial History is a receipt for a share in a Swedish iron works which had been financed by debt issuance on the Amsterdam capital market, and a reorganization of the debt claim resulted in an exchange for equity. It is not known how many such exchanges took place, but such a conversion, or at least an equity-like restructuring would later become useful for the Holland Land Company consortium.

Rouwenhorst (2005) points out that the plantation loans also played a key role as precedents for another Dutch financial innovation of the 18th century; closed-end mutual funds. These were negotiaties that offered a stream of interest derived from a portfolio of traded securities. The first of these, Eendragt Maakt Magt, was a purely financial security issued in 1774 by Abraham van Ketwich. It was unrelated to the commodities trade except insofar as it held in its diversified portfolio plantation loans in Essequibo, Berbice and Danish American Islands, along with securitized Danish toll revenues, Russian and German sovereign debt, and Spanish toll revenue bonds.

These loans were not simply pass-through instruments, but fixed-income securities with a stated yield (around 5% in many cases). The periodic income from the underlying securities was intended to cover the stated yield. The income from the underlying securities was further expected to pay for a lottery by which random shares in the negotiatie would be retired at values above their face amount. This peculiar feature insured that the return on the pool of bonds stochastically dominated the return distribution for any single loan. As we discuss below, the closed-end fund negotiate structure was also adapted to the financing of American land speculation.

One important difference between the plantation loans and the American land securities discussed in this chapter is that the American securities were claims on future land sales. They were not a means to finance transatlantic commodity trade, but rather were based upon the financing, development, subdivision and resale of wilderness property. The plantation loans can be interpreted as a means for Dutch merchants to lay off the capital cost of the plantation generating profitable commodity trade. There appears to have been no reliance on future capital appreciation of the collateral as the grounds for the profitability of the investment. In the case of the Holland Land Company and the Washington D.C. loans this was precisely the opposite. They yielded no commodities for merchants to trade, and the entirety of the expected economic benefit derived from land price appreciation. Although the American land securities used a similar structure to the plantation loans – land or mortgage-backed securitization -- the fundamental nature of the underlying economic benefits differed, and thus the risk and timing of future cash flows differed.

Other Precedents

There are other financial precedents relevant to the issuance of securities in Amsterdam to finance American land purchases. The first is the emergence of land banks in various forms through the 18th century. Only a brief overview is offered here. The first land bank proposals were floated in England around the turn of the 17th century as a

means to create money out of real property. One of the early land bank theorists, John Law, regarded the scarcity of money as one of the greatest constraints to commercial development, and the reliance of European economies on the supply of New World silver as a risk to be mitigated by changing the collateral for money from precious metal to real property.

America was one of the first places to implement land banking due to the extreme scarcity of hard specie in the colonies. Beginning in South Carolina in 1712, publicly sponsored land banks were created by colonial governments to issue mortgages in paper currency which could ultimately be used to purchase foreclosed properties. Other colonies immediately followed suit. Parliament was alarmed that the currency of several colonies traded at a discount, reflecting the market perception of their risk. Among other things, the structure of the land bank system imbedded conflicts of interest: local boards appraised properties and made loans. A 1738 mortgage contract for 75 pounds issued by Rhode Island Colony 6th land bank is representative.³ The 25 year note at 5% interest was issued at a 2:1 loan to value ratio as determined by a panel of 6 trustees acting for the general assembly of the colony. The borrower, Edward Arnold received paper notes for his pledge which circulated in the colony. His interest payments, along with other borrowers who made up the 100,000 pound loan issue were evidently sufficient to cover the annual colonial budget. The incentives of the colonies to operate land banks of this sort were clear. While solving the problem of scare specie, they also provided revenue for government. Related lending represented an obvious problem. Parliament outlawed land banks and ultimately all were closed by 1740.

Land banks did not make a significant re-appearance until the end of the Ancien Regime and the creation France's revolutionary currency, the assignats.⁴ Dutch investors in 1794 and 1795 would surely have been familiar with the French securities backed by confiscated church properties. By 1795, the assignats were virtually

³ In the Yale Collection of Financial History.

⁴ Cf. White (1995)

worthless due to excess issuance and were replaced in the following year by madats territorial which likewise rapidly declined in value.

Perhaps more relevant precedents for the American securities were early American land companies. A number of pre- and post-Revolutionary companies were formed to claim, develop and settle western lands – the Ohio Company launched by a group of powerful Virginians being among the most well-known. These firms were essentially private equity share-based companies which could conceivably have served as a model for Dutch investors as well. Livermore (1939) argues that they were innovative corporate structures in their own right. The American agent of the Holland Land Company, Theophile Cazenove began purchasing shares in American companies in the 1790's – besides toll and bridge companies, he bought shares in the Pennsylvania Population Company founded by Pennsylvania's Comptroller General, John Nicholson in 1792 – later partner to Greenleaf and Morris in the Washington D.C. venture. As such, the Dutch consortium comprising the Holland Land Company was familiar with this form of public equity.

Although Dutch financiers were not known to be involved in the American land bank experiment or the French assignat system – except perhaps as speculators – these models are relevant in that they demonstrate the active use of property as collateral for publicly traded debt – whether interest-bearing securities or paper money. They indicate that securities collateralized by land were not unknown at the time of the Dutch land loans. However, while there were clear precedents for property-backed securities in the European markets in the late 18th century, investor experiences with them may not have been favorable.

Finally, another relevant precedent is the *Landschaften* of 18th century Prussia studied by Kirsten Wandschneider (2010). She traces the development of these land credit associations to a financial crisis in 1770 that required the restructuring of debt of the landed nobility. This was accomplished through the issuance of public bearer bonds backed by mortgages held by the *Landschaften*. Wandschneider likens them to modern

“covered bonds” which have recently been proposed as safer alternatives to mortgage-backed debt. Undoubtedly these were also known to Dutch financiers in the 1790’s.

Dutch Investment in American Debt

The story of Dutch investment in the debt of the early United States is well described by Riley (2009). The first underwriters of American loans in the Netherlands were the firms of W. & J. Willink, N. and J. van Staphorst and De la Lande and Fynje who floated loans for the United States in 1782. These Dutch intermediaries earned commissions as high as 8% for the early floatations and 3% to 5% for later loans.

Even more profitable was the speculation on domestic debt of the United States which Dutch merchants bought at steep discounts at the nadir of American creditworthiness prior to Hamilton’s reorganization of the debt. Over the period 1782 to 1794, Dutch speculators issued a number of negotiatives on the Dutch capital markets backed by the bonds of the United States. These American negotiatives typically paid a promised rate of interest and were secured with U.S. securities held in trust. Riley points out that the first movers in this securitization of American debt were also major boosters of America. Pieter Stadnitski, a member of the Dutch Patriot faction ultimately aligned with the French Revolution, was not only a major purchaser and securitizer of U.S. bonds but also an enthusiastic pamphleteer who wrote glowingly about the new American democracy and the wonderful American land. Riley calculates that Stadnitski made a killing by buying American paper at 37.5 % of face value and selling it at 60% of face to investors in his negotiatives. Investors in his funds also profited as the prices of the negotiatives rose in the Dutch market as a result of the strengthening of American finances. Stadnitski’s arbitrage was rapidly imitated by other merchants and not surprisingly spreads narrowed.

An important feature of these American fund negotiatives is that they provided for a distribution of residual profits deriving from the purchase of U.S. bonds at a discount. As prices of U.S. debt rose to par, the capital gain accruing to investors – even after the

issuers took their cut as intermediaries – was substantial. Thus there was some “right-tail” to the distribution of expected returns to investing in the debt of the young United States. Their popularity with the Dutch public may have been due as much to this feature as to the conviction that the U.S. was certain to meet its obligations.

The firm of Daniel Crommelin and sons in Amsterdam was among the several issuers of negotiatives backed by U.S. notes. He was aided in this operation in 1794 by an American merchant from Boston, James Greenleaf. Greenleaf was married to a daughter of member of a prominent Amsterdam banking family and served as U.S. consul to the Netherlands. He knew the Crommelin family through their mercantile dealings in the U.S. An American branch of the family was stationed in New York, where part of Greenleaf’s business was also located.

III. Financial Innovation: American Property Securities

The rich data in Dutch archives and the considerable historical research devoted to the history of the Holland Land Company and to the early development of Washington D.C. make it possible to trace in detail the process of innovation leading to the issuance of its securities on American speculative lands. This section describes the development of these securities and their contractual details.

Holland Land Company Negotiatives

In 1789 a consortium of leading merchant houses formed to explore land purchases in America. The firms of Stadnitski, Van Staphorst, Van Eeghen, Ten Cate & Van Vollenhoven had all made money buying American funds and issuing negotiatives. Perhaps equally relevant, the investors to whom they had sold negotiatives backed by American debt securities also made money. As mentioned above, the consortium employed an agent to travel to America, Theophile Cazenove who scouted opportunities and began to invest the firm's capital, initially into American share companies. These included shares in the Pennsylvania Population Company and

shares in the James River Company – a firm nominally headed by George Washington to improve the navigation of the James River for Development of the commercial traffic into the Southern Virginia piedmont. In April, 1791 the Holland Land Company joint-ventured with the Rotterdam firm of Van Beefting and Boom to explore for sugar maple operations with the hope of establishing another source of commodity production in the American forestland. Cazenove also became interested in purchasing undeveloped land for division and sale to immigrants and U.S. settlers. In December of 1792, The Dutch consortium bought 3,300,000 acres in the Genesee River Valley from Robert Morris. That year the Holland Land Company was created. The five firms brought in the Van Willinks and retained Rutger van Schimmelpenninck as legal advisor.⁵ The share company was formed among the participants and the shares were not publicly issued, so it was, in effect, a private equity company. The firm further formalized its structure in 1796.

The first public financing of the Holland Land Company was a subscription of negotiatives of 3,000,000 guilders floated in January, 1793 on one million acres of land in the Genesee valley which was valued (or transferred to the trustees of the negotiatie) at 1.2 guilders per acre. In addition 1,200,000 in American funds was transferred to the trustees to cover the costs of paying interest over the first five years. The first issue was completely subscribed, and a second followed in June.⁶

The Holland Land Company offering was by a promotional pamphlet published by Stadnitski extolling the virtues of America, describing the particulars of the settlement process and projections about an increase in the demand for land. Evans (p. 28) notes that Stadnitski's pamphlet describes the speculative profits Morris himself had made – tripling his investment in a million acre purchase via a sale to the British Pultney

⁵ This account is taken from Evans pp. 24 and ff.

⁶ Details of the offering can be found in *Nieuwe Nederlandsche jaerboeken, of Vervolg der merkwaardigste geschiedenissen: die voorgevallen zyn in de Vereenigde provincien, de generaliteits landen, en de volkplantingen van den staet.* 1.-33. deel, 1766-98, Volume 2. P. 1442. Also see the certificate Amsterdam City Archives, archive number 333 'Holland Land Company', inventory number 867 'Shares of various negotiations'.

Company. Accompanying this pamphlet were calculations of expected profits of more than 200% over a nine-year horizon accruing to an investment in 400,000 acres of land in the Genesee valley. Important to our analysis is that this spreadsheet, almost certainly prepared by Stadnitski for a French investment market, shows no positive cash flow for the first five years. Even in an optimistic scenario capital investment was required; hence the necessity of substituting a portfolio of U.S. debt to address the problem of the mismatch between duration of the debt and the assets. The management fees, in addition to costs were 1% for startup (up front), and .5% for payment of dividends.

The Holland Land Company negotiates are puzzling in several respects. First, they did not promise any economic benefits from future land sales, other than meeting interest payments. This suggests that the market demand for the securities was not based on an expectation of speculative profits from development of the American frontier. The debt structure was clearly not due to lack of knowledge about equity financing. Cazenova was already purchasing American equity securities on the firm's behalf. Essentially the negotiatie provided leverage for the consortium to buy American lands, and a portion of their property was pledged as collateral. The Stadnitski spreadsheet forecast makes it clear that the firm understood that, even under an optimistic scenario, the first years of operation were cash flow negative, necessitating the inclusion of American government securities to meet promised interest payments in the first few years of operation.

Also puzzling is why Dutch subscribers to the Holland Land Company issues would take such significant risks for a relatively modest yield. It is unlikely that, in the event of default, the property in the wilderness of New York could be easily liquidated by creditors, when the borrowers were unable to do so. Perhaps the reputation of the borrowers and the recent returns to investments in American debt provided additional implicit promise of fulfillment.

Going forward, the Holland Land Company bonds met their minimal obligations by paying interest through 1798, however the land sales to extend the interest payments did not materialize. In 1804 the combined cash reserves for the two loans had decreased to 520,000 Florins due to a combination of large investment in the enterprise, poor cash flows from land sales, and a high burden of interest payments.⁷ As a consequence the Company faced a large debt overhang, which resulted in a strong disincentive to the equity owners of the company to continue. This led to an offer of a major re-structuring of the negotiatives.

The restructuring involved a merger of the two negotiatives that was in part motivated by a conflict of interest between the two investor groups, who developed a preference for the January negotiatie over the June issue. The lands of the January negotiatie included the headquarters of the company, which caused the surrounding lands also owned by the January negotiatie to trade at a premium. The merger put the two investor groups back on equal footing. But more importantly, the complex restructuring of the negotiatives was an attempt to mitigate the debt overhang. The proposal was for a repurchase agreement to reduce the debt burden in return for an opportunity for investors to participate in the residual profits of the land sales. In particular, the company offered investors a lottery to buy back their shares at a steep discount (40% or 35% of par), but investors were not required to participate. Investors who elected to participate and whose shares were drawn by lot, would receive an equity stub to share in the final distribution of the residual profits of land sales at the end of the negotiatie's term⁸. Investors who participated likely believed that their interests were better served by owners and equity holders who were granted debt relief and renewed incentives to develop lands going forward, and perhaps the prospect of some participation in the upside of the fortunes of the company after a period of disappointing results. In the end a 2/3 majority of the bondholders accepted this exchange.

⁷ Evans p. 430

⁸ The merger agreement separately stipulated that the company might subsequently try to buy back shares below par in the open market (in which case investors would not participate the equity residual), or at par in which case investors would get an equity stub.

The firm ultimately retired all 3,000 shares of the negotiate as planned, and in addition there was a substantial residual value. Over a twenty year period, it made periodic payments to investors based upon land sales, which finally wound up in 1858. The amount investors received in total was 6,673,447.5 F. Evans claims that investors made a reasonable return on their investment in the long run, although this interpretation depends on selection of a risk-appropriate discount rate.

A Closed-end Fund Negotiate

As part of its re-structuring, in 1805, The Holland Land Company also used the closed-end fund structure to raise capital.⁹ To our knowledge this fund is previously unreported in the literature on the Holland Land Company. The closed-end fund negotiate enumerates three different securities for lands in the State of New York two issued by members of the Holland Land Company consortium and one by the Holland Land Company itself – presumably one of the two mortgage back-securities discussed above. It also lists two American land company stocks (the St. James River Company and the Pennsylvania Population Society) and a bond issue of the State of South Carolina. These securities were held in trust and the proceeds from their interest, dividend payments and future sales were used to benefit two classes of investors. The first class received 5% annual interest and were redeemed by lot. The second class received no interest payments; only the residual value from the underlying securities. This rendered the second class of investors in the negotiate equity claimants.

This structure is interesting for several reasons. First it shows the shares in the American land companies purchased by Cazenove were ultimately monetized by the Holland Land Company consortium through what we would today call a “structured product.” Second, it indicates that the founding investors in the Holland Land company monetized their holdings through issuance of negotiates which were not evidently

⁹ Amsterdam City Archives, archive number 333 ‘Holland Land Company’, inventory number 867 ‘Shares of various negotiations’.

quoted on the Amsterdam exchange (as were the Holland Land Company 1793 issues). Third, it indicates that, by 1805, there was a demand for equity-like claims on American land speculation. As such, it may be further evidence of a transition to separating debt-like and equity-like financing of land ventures.

Washington D.C. Bonds

In 1793, the success of the Holland Land Company negotiatie clearly set a precedent for James Greenleaf's loan. In that year, Greenleaf began to negotiate for the purchase of 3,000 lots in the new national city of Washington, D.C. while concurrently seeking financing from his former Dutch associates using a vehicle very much like the Holland Land Company securities. As with the Holland Land Company negotiates, this involved two types of collateral; one for the interest payments to investors and another for the assets of the negotiatie. Both were held in trust. His efforts at soliciting Dutch financing resulted in two negotiaties – one issued in Amsterdam by the firm of Daniel Crommelin and Sons and the other in Rotterdam issued by Rocquette, Elzevier and Beeldemaker.

Following the pattern of the Holland Land Company group, Greenleaf undertook this issue after purchasing property in concert with two other investors, both major real estate speculators: Robert Morris, former superintendent of the U.S. Treasury, and John Nicholson. Neither is named in the Dutch issues which treat Greenleaf as the sole borrower. Morris had earlier sold the land in New York to the Holland Land Company, and Nicholson was a founder of the Pennsylvania Population Company – thus all three partners were familiar to Dutch financiers.

The terms of the Amsterdam loan are known from the proposal drawn up by Greenleaf and presented to the firm of Daniel Crommelin and sons.¹⁰ He proposed a two million guilder loan with a term of 12 years, for which he offered as collateral the 3,000 house lots purchased from the city of Washington. To guarantee the interest on the loan over the first six years of the term of the loan, he offered as collateral a portfolio of U.S. government debt and debt of the bank of the United States. He had the right to redeem debt at face value and in so doing redeem a pro-rata share of the title to the land held in trust. Thus, the initial conception of the security was strictly a debt instrument.

The exact nature of the collateral structure is of interest. The title to the financial securities and to the real property was transferred to the trustees of the respective issues. This same structure for the Holland Land Company relied only on a notary who held the land deeds. The transfer of property deeds to Washington D.C. was documented through notarized and witnessed letters from officials in the United States. The squares in which the properties are located were concentrated in the north and east of the city, although Greenleaf's best known development is Greenleaf's Point in the city's southwest.

The trustees for the loan were Peter Godfrey, Daniel Crommelin and Rutger Jan Schimmelpennink. Godfrey and Crommelin were merchants/bankers issuing the bond, the third was a prominent lawyer and politician who, in the year 1795, became the leader of the Patriot revolt in the Netherlands against the crown that resulted in the Batavian Republic. He also held shares in the Holland Land Company.

The Rotterdam loan commonly referred to as Rocqette, Elzevier and Beeldemaker op gronden Washington, was issued on December 15, 1794 and was intended to be for one million guilders and pledged 1,500 house lots. It had a term of five years, 5.5% interest rate and a similar mortgage and trustee structure to the Amsterdam loan. A

¹⁰ Amsterdam City Archives, archive number 654 'Archive of the Firm Daniël Crommelin and Sons, since 1859 Tutein Nolthenius and De Haan', inventory number 106 'Letters from J. Greenleaf, received by A. Gerard, clerk of the Crommelin firm, 1793 and 1794.'

lottery structure of the Rotterdam loan was not tied to the value of the properties but instead simply paid a premium of 100% of face value for 10% of the bondholders chosen by lot. Held open for subscription over first several months of 1794, the loans were ultimately undersubscribed and the terms of the loan adjusted accordingly. While the issuers originally planned to raise 1,000,000 guilders in capital and connect 1500 lots within the city of Washington DC to the loan, market sentiment evidently only allowed them to raise funds up to 150,000 guilders and the number of lots was proportionally reduced to 225 and a total of 668,250 square feet.

All lots are transferred in the names of custodians 'Gillis Groeneveld, Rudolph Mees and Pieter van der Wallen van Vollenhoven' and posted as collateral to the loan with an act of renunciation to protect the investors. The deeds of transfer by Sylvanus Bourne, on behalf of the gentlemen Groeneveld, Rudolph Mees and Pieter van der Wallen van Vollenhoven' of half of the 2,632,000 square feet of lots, all within the city of Washington are deposited with the notary, as collateral for the negotiatie. These lots were bought by consul Greenleaf on July 29th 1794. Together with these deeds, the notary received all documents needed to transfer a sufficiently large portion of property in to the aforementioned custodians. Interest on the loan was 5.5%, secured through U.S. sovereign debt certificates in the names of Rocquette, Elzevier and Beeldemaker. In addition to the U.S. debt certificates and Washington property, James Greenleaf was held personally liable for the loan.

The Amsterdam loan collected only 200,000 guilders and the Rotterdam loan collected only 150,000 guilders. The fees of the Amsterdam investment issuers are not known from the surviving documents. The so-called directors of the Rotterdam loan incurred a 1% set up fee and .5% per dividend.

The failure of the Greenleaf floatations is sometimes attributed to the turmoil of the Dutch politics at the time, but perhaps the market was simply skeptical about a security floated by an American consortium as opposed to a Dutch consortium. In addition, perhaps investors were rightly mistrustful of Greenleaf himself.

In all, 200 bonds were issued by Crommelin in Amsterdam with a face value of \$1,000 guilders. The list of subscribers contains the names of other merchant houses of the day, including bankers. Unlike preceding U.S. debt negotiatie issued by Crommelin with Greenleaf, there are no surviving certificates and thus they may not exist, although the legal rights of the holders are summarized in the 'Nieuw Nederlandse jaerboeken' as indicated above. From the period 1796 through 1811, the Amsterdam Pryscourant quoted bid and ask prices for the two Washington D.C. negotiaties on a regular basis.

The story of the Greenleaf, Nicholson and Morris bankruptcies is a fascinating one which will not be recounted here. Essential to our analysis is the step they took on February 20, 1795, (the year following the loans) to launch the North American Land Company. Each partner contributed property to the company, including land in Washington D.C. as well as other holdings totaling 4,479,317 acres. These properties were held in trust, and shares were issued to the founders. While attempts were evidently made to float a public offering of shares in the North American Land Company in U.S. markets and in the Netherlands, relatively few shares were traded, evidently as a result of shares issued to creditors of the two men.¹¹ Greenleaf sold his shares in 1796 to his partners for \$1,500,000 in notes, although he remained connected with the business of the firm for many years as it wound itself up. He represented its business interests after the death of his former partners. In addition, he ultimately represented the business interests of the Dutch claimants to the Washington lots.

The holders of the Dutch negotiatie expected to be shielded from the tribulations of Greenleaf and company by virtue of having title to the properties in trust, and the guarantee of the U.S. securities to cover promised interest payments. The Dutch title to the lots was later challenged due to Greenleaf's conveyance of the titles prior to performance of his obligations to the U.S. government. This led to a protracted legal

¹¹ Livermore p. 168

dispute, the necessity of the Dutch investors to retain counsel in America, to meet tax obligations on the lots, and to auction the properties.

Greenleaf outlived his two partners and oversaw the disposition of the assets of the North American Land Company. He continued to develop property in Washington D.C. despite his bankruptcy, and ultimately built a number of houses in an area of southwest district of Columbia call Greenleaf's point, some of which still stand today.

Our archival research revealed evidence that Greenleaf took advantage of the Dutch investors on yet a second occasion. In the 1830's he offered his services to the Dutch investors in the original negotiates as a sales agent and to organize an auction of the Washington lots held in the Rocquette, Beeldemaker and Elzevier negotiate, and agreed with the bondholders to split the revenues from the land sales evenly with them. All taxes and intermediary costs were to be paid by the 'Holland gentlemen' however. Greenleaf won these terms after a long negotiation. At the auction in May, 1835, Greenleaf himself bought 50% of the property. But since he also got 50% of the revenues, he got 50% of the land for free. After subtraction of taxes, legal charges and intermediary costs, almost nothing was left for the bondholders. What small amount remained was left was paid out to the bond holders. Rocquette, Beeldemaker and Elzevier wisely decided not to inform the bond holders (via the account) who had been purchasing the land, although they likely knew, and could not have been happy that they had been duped yet a second time by James Greenleaf.

In sum, Greenleaf, Morris and Nicholson's initial difficulties stemmed from their failure to raise sufficient capital to allow them to be patient investors in the development and sale of properties. Like the Holland Land Company, they could not monetize the properties rapidly enough to meet cash obligations. These difficulties may have been compounded by the shady dealings and reputation of one of the three partners.

IV. Path-Dependent Financial Innovation

Empirical studies of financial innovation are necessarily limited to unusual events. Frame and White (2004) argue that most analyses of financial innovation are forced to generalize from a few cases. Lerner and Tufano (2011) articulate this problem and use a set of historical examples – from the emergence of the venture capital industry to the appearance of mutual funds, to address the costs and benefits of financial innovation. Their approach considers the counterfactual; i.e. what the economy would look like without a specific innovation.

In the first part of the paper we detailed the many precedents for the Dutch property negotiatie, particularly the debt-like securities and funds issued in the Amsterdam market in the mid to late 18th century. We showed how the features of the Holland Land Company negotiaties and the Washington D.C. negotiaties could be traced to particular precedents in the Dutch market. Our hypothesis is that the innovations relied upon the marketplace's prior acceptance of bond-like instruments. This initially precluded offerings of common stock. The debt securities in the Dutch market at the time were characterized by features designed to secure expected future payments, although certain of them also contained "right-skew" payoffs created by lottery features and rights in residual value to portfolios of securities. This framework of innovation is an exemplar of an institutionalist perspective in which frictions and information transactions costs of various types are minimized by reliance on precedent. One corollary is that path-dependent outcomes need not be first-best solutions or optimal in any measurable sense; only that they are improvements on existing technology.

As discussed above, the Holland Land Company found the debt service burdensome and re-structured their negotiatie in 1805 into an instrument with an equity-like component; reducing the face value to be repaid and replacing it with a residual claim. They further supplemented this with a closed-end fund issue that partitioned proceeds into debt and equity like claims.

Shortly after issuing their two negotiaties, Greenleaf, Morris and Nicholson also tried to engineer an equity-for-debt swap by creating the North American Land Company. This

had some institutional precedent in the 18th century American land, bridge and canal companies trading on the Philadelphia Exchange. These institutional forms might have encouraged the hope that such a rescue was possible. While the Holland Land Company was less immediately constrained because its first two public offerings had been fully subscribed, it may have been restricted because of the lack of a market for equities in the Dutch market. This may explain the complexities of the 1805 residual claim certificates.

On the one hand, the land company negotiatives in 18th century Netherlands are extraordinary innovations: early and complex structured mortgage notes that demonstrate the remarkable sophistication of the capital markets of the time. On the other hand, the financial engineering required to make a debt instrument fit the needs of an enterprise whose value proposition is based upon patiently developing a market on the Western frontier, or the growth of an entirely new city, is perhaps extremely inefficient. Had these firms been able to issue equity IPO's to a market that accepted them comfortably, the outcome – at least for Greenleaf, Morris and Nicholson, might have been very different.

V. Conclusion

In this paper we examine some of the first mortgage-backed securities issued in the 18th century. Debt instruments evolved to support an innovative merchant tradition that used collateralized securities for financing. We conjecture that the American land negotiatie pushed the existing debt-based financial infrastructure of the Netherlands to the limits. Not designed to finance projects with long verification periods, fixed income issuances were used anyway with negative results, and led to re-contracting to create what amounted to equity. This re-structuring was successful in one instance, and completely failed in another.

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