



How Amsterdam got fiat money[☆]

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ABSTRACT

A fiat money system was introduced in the seventeenth century by a prominent public bank of the time, the Bank of Amsterdam. Employing data from the bank's archives, we show that bank money became a more attractive transactions medium following a 1683 policy change, which unbundled the bank's account balances from a right to redeem these balances in coin. Balances not matched by a redemption right became fiat. This change also stabilized the value of bank money as a unit of account, freed the bank from defensive open market operations, and promoted seigniorage collection.

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1. Introduction

The Amsterdam bank florin was the dominant international currency of the late seventeenth and early eighteenth centuries (Gillard, 2004). Unusually for its time, the bank florin was not a coin nor was its value synonymous with that of any particular coin. Instead, bank florins existed only as balances in the accounts of a publicly owned bank, the Bank of Amsterdam (or “Bank”). Other cities also owned banks, but only Amsterdam created money that was not inherently redeemable in coin. In this sense, bank florins resembled a modern fiat money.

How did a fiat instrument come to dominate the hard-money world of Early Modern Europe? Our investigations show that Amsterdam did this by “unbundling” two components of its deposits: ownership of account balances and the option to withdraw balances in coin. Unbundling caused the Bank to have a dual structure, because account balances exceeded withdrawal claims. Balances *with* a claim formed a “narrow bank” with 100 percent reserves payable on demand. Balances *without* a claim were an irredeemable money that the Bank used to finance open market operations, loans, and seigniorage. Any individual balance could be redeemed with the purchase of a claim on the secondary market, yet not all balances could be simultaneously redeemed. Balances benefitted from a conditional attachment to a hard money.

This unbundling occurred in 1683, and our detailed reconstruction of the Bank's balance sheet over the surrounding years, 1666–1702, shows that the new regime led to a surge in deposits into the Bank and an increased turnover of Bank

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money. We also examine a data series on the market price of bank florins, and find this price stabilizes by the end of our data period, primarily because the 1683 policy change allowed the Bank to reduce its bid-ask spread on Bank funds. This moved the market value of the bank florin, known as the “agio,” closer to official values embodied in contemporaneous coinage ordinances. Ultimately, bank florins came to be viewed as more liquid than their nearest competitors, large gold and silver coins.

The success of the new regime also allowed the Bank of Amsterdam to adjust its policies in other ways. During the period we analyze, the Bank engaged in open market operations which consisted of sales and purchases of silver bullion. Our reconstructed data show that, prior to 1683, open market operations predominantly worked to sterilize a persistent drain of deposits. After 1683, the Bank shifted the focus of its open market operations to short-term goals, e.g., to offset credit activities of the Bank.

The Bank's credit operations during this period consisted of loans to a large government-sponsored enterprise called the Dutch East India Company (or “Company”), and “loans” to the city of Amsterdam (or “City”). The latter were really profit-takings since these were customarily written off rather than repaid. The data show that both types of credit activity changed decisively in 1683. The Bank became a more regular lender to the Company, allowing the Company to better smooth its seasonal cash flows. Simultaneously, the City became more aggressive in its profit-taking, pushing the Bank's capital into a sharply negative position. However, the reconstructed data clearly show that neither the Bank's lack of capital, nor the exotic nature of its liabilities, diminished the market's demand for this new form of money.

More generally, the experience of the Bank of Amsterdam marks a noteworthy stage of monetary development, intermediate between earlier commodity money systems and the pure fiat systems of today. The intent of the Bank's 1609 charter and its 1683 reform was to counteract the instability endemic to most Early Modern coinage systems (see, e.g., [Sargent and Velde, 2002](#)), and to more closely tie the prevailing unit of account to its metal backing. Accordingly, the Bank was originally envisioned as a simple, 100-percent-reserves institution. Over the course of its history, however, the Bank implemented a sequence of innovations—a separate unit of account, credit and open market operations, repo-like transactions, and finally, a form of fiat money—that reinforced public confidence in the Bank's adherence to its original mission, but moved its structure closer to that of today's central banks. Along the way, Amsterdam learned that public trust was as important to the Bank's success as was the metal residing in its vaults. Discovery of this “fiduciary principle” is a story that would be repeated by later generations of central banks.

The rest of this paper is organized as follows. [Section 2](#) sets out the basic challenge facing early public banks, and [Section 3](#) details problems with the initial design of the Bank of Amsterdam. [Section 4](#) explains the changes of 1683. [Section 5](#) presents original data measuring deposit, purchase, loan, seigniorage, and exchange rate behavior. [Section 6](#) places the Dutch story to the modern literature, and [Section 7](#) concludes.

2. Early public banks

Before the modern era, trade coins (high-denomination coins with high precious metal content relative to their official value) were generally the most stable and liquid assets available. However, the use of trade coins involved transaction costs like assay and protection. The diversity of coins created additional exchange frictions for mercantile hubs. For example, in its 1606 coinage ordinance, the Dutch Republic officially recognized 25 gold and 14 silver trade coins (not counting double and half sizes), and the total variety of coins in circulation was much larger from [Van Leeuwen \(1683, 2746–2754\)](#). To reduce transaction costs, merchants developed systems of credit that relied on intermediaries like bankers and money changers, yet an indeterminate stock of trade coins still underpinned debt settlement. Adam Smith concluded that for small, open economies, the resulting monetary uncertainty “must render the exchange always very much against such a state ([Smith, 1937, 446](#)).” At the same time, intermediation introduced new risks: banks often failed and money changers customarily culled out better coin.

In response, mercantile centers such as Venice (1597), Amsterdam (1609), Hamburg (1619), and others created their own municipal banks to displace private intermediaries as the core of their local payment systems. These public banks offered transferable accounts which were redeemable on demand in trade coins. In some exceptional cases (Naples, Stockholm) early public banks issued banknotes, but Amsterdam and the rest did not. Big cities in small nations sought to reduce systemic risk (runs) and negative externalities (degraded coins) by preventing excessive lending and maintaining coin quality.

The superiority of municipal money was not evident to all, so cities also used legal restrictions in an attempt to compel local adoption. If the combination of ordinance and ownership was successful, people would come to prefer bank money for non-compulsory reasons, but such success was rare. Public banks were costly to use and often lent to their owners, leading in many cases to diminished use or outright abandonment of bank money. The history of the Bank of Amsterdam (e.g., [Van Dillen, 1934](#)) indicates that it was not immune to the same constraints as other early public banks. The unique and potentially interesting feature of the Bank's history has to do with how, by the process of monetary innovation, it was able to overcome these constraints and attract deposits not only from the local community, but from merchants throughout Europe.

3. The Bank of Amsterdam before 1683

Why was the Bank of Amsterdam not very appealing before 1683? This section explains that the value of Bank money could not maintain a tight correspondence with the diversity of trade coins the Bank held as assets. The uncertainty cited by

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