SMOOTHING THE FLOW

Currency and payments in the Early Modern Low Countries, 1500-1800

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Abstract

We analyze the evolution of payments in the Low Countries during the period 1500-1800 to argue that money of account, a convention which spread throughout the entire area from the 14th century onwards, eliminated most of the problems associated with paying cash by enabling people to settle transactions in a fictional currency accepted by everyone. As a result two functions of money, standard of value and means of settlement, penetrated easily, leaving the third one, store of wealth, to whatever gold and silver coins available. We also show how the rise of particular forms of intermediation to streamline payments determined the subsequent pattern of other intermediaries concentrating on banking services.

1. **Introduction**

Cash payments are often taken as a sign of economic modernity and, conversely, their paucity for backwardness. Based as it is on the old idea of societies evolving from a *Naturalwirtschaft* to a *Geldwirtschaft*, that is to say from from the dominance of subsistence production and barter to market-oriented production and an exchange of goods and services facilitated by money barter-based to money-centred settlements, this view assumes one main function of money, means of settlement, to take precedence over the two others, gauge of value and store of wealth, and penetrating by way of increased market-oriented production. In turn, the implied stages of economic evolution often serve to support normative judgements about individual actors, households, or even whole sectors of production being advanced or backward, depending on their apparent level of financial sophistication.

Now we know that cash payments were a problem everywhere because coin circulation remained highly defective. Recurrent debasements and devaluations made good large coins scarce, while a fear of counterfeits supposedly reduced small coin production to a trickle (Munro 1988, Sargent and Velde 2002; see however Volckart 2008, Janssens 1957, Scheffers 2013, Feenstra 2014). Historians have interpreted the consequences of currency deficiencies in two ways. Some argue that coin or bullion scarcities must have been a brake on market exchanges and, consequently, on economic growth (Day 1978, Munro 1988, see however Sussman 1998). Others link the currency deficiencies to the widespread use of credit and conclude that the scarcity of cash forced people to rely on credit (Muldrew 1998, Willems 2009), the forms of which are thought to have been mostly shaped by the social networks in which creditor and debtor functioned and some, but not all, are considered to have been characterized by economic dependency (Lambrecht 2003, Fontaine 2008, Matthews 2009, Vickers 2010, Ogilvie, Küpker and Maegraith 2012).

The underlying assumption of both the link between money and modernity and a deficient circulation and credit is that people prefer cash if they can. However, this is not true even in societies today. Many people regard the simplest form of payment, cash in the form of perfect coins or notes, as a chore, so they tend to avoid it and use alternatives like credit cards or Paypal instead. Moreover, the numismatic literature has started to doubt whether cash was the preferred option in the past by questioning the nexus between cash payments and economic modernity (Bolton 2012, Munro 2012, Spufford 1988, 2008). In addition Kuroda's insight about currency systems as consisting of complementary forms of money used differently by different social groups (Kuroda 2008) has been taken a step further by Vickers to show various forms of money, modes of payment, and types of credit functioning not as discrete categories, but as a seamless continuum of closely related options from which people picked whatever suited them best at a given moment in time (Vickers 2010). Such a continuum has also been demonstrated for groups of poor people in developing countries today, who use it to maximise scarce resources (Collins 2010).

From this we conclude that we should be wary of applying the old *Naturalwirtschaft-Geldwirtschaft* labels to any given social group or society, because an absence of cash payments may be indicate the existence of intricate cashless payments networks. Moreover, we need to start appreciating credit as one amongst a number of options to conclude a transaction, and that option served a much wider variety of reasons than currency vicissitudes or asymmetric social relations. Put simply, cash and credit could both substitute and complement each other, or perform entirely different functions, depending on circumstances.

Payments merit our attention not just because of the close relationship between cash and credit. Facilitating payments is the prime function of financial systems which determines the shape of others.[1] The peculiarity of the Early Modern period adds two further reasons. First, since nearly all forms of intermediation rooted in them, so changing ways of handling payments determined to a large degree the pattern of available services. Analyzing service patterns therefore requires both understanding how payments worked, and an appreciation of how and changes to them affected financial markets. New payment systems could have profound repercussions on the financial market's entire configuration, as the Amsterdam Wisselbank did, or create a demand for credit from an entirely new customer segment, a feat achieved by the centralized loan administration of the Dutch East India Company VOC.[2]

Second, during the late Middle Ages payments and credit were often so tightly bound up that it is hard to draw a line between them, but the key aspect of Early Modern markets is the gradual separation or, if you wish, emancipation of credit from payments into two distinct transactions, separately priced, and sometimes also supplied by different intermediaries. We do not really know what drove them apart, nor why that occurred earlier in some areas and in some social strata than in other areas or strata. No doubt cultural attitudes to credit and its social embeddedness affected the process.[3] Cash was considered inconvenient, so people avoided it whenever possible by taking credit. At the same time credit could serve a variety of social, perhaps cultural, functions that cash could not.[4] An alternative explanation for the ubiquity of credit underlines the deficient coin circulation. Until well into the seventeenth century, notably small coins were difficult to produce.[5] A shortage of good coin is thought to have stimulated the

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[1] Merton and Bodie, 'Financial systems analysis', ***
[2] Van Bochove and Van Velzen 2013; Van Bochove and Kole, 2014.
[3] Howell ***; Muldrew, *Culture* ***; Fontaine, *Economie* ***.
[4] ***Fontaine, Muldrew.
[5] Sargent and Velde, *Big problem*; see however Volckart, 'Big problem'.

circulation of IOUs and of paper money issued by cashiers both in Antwerp and in Amsterdam.[6] During the eighteenth century cashless transactions predominated in parts of the Flemish countryside, partly for a lack of coin, whereas they were also widely used in the Salland region, for entirely different reasons and definitely not for a scarcity of coin.[7] Conversely, Bart Willems links the decline of debts and the parallel rise of cash in eighteenth-century Antwerp collateral succession inventories to the improved coin circulation achieved by the Brussels government.[8] But even in early eighteenth-century Holland, which had a fairly good coin circulation, shopkeepers and professional service providers like barber-surgeons appear to have been paid only once or twice a year, so clearly some habits died hard.[9] Looking at payments, and more specifically the use of alternatives to cash, will help us understand the relative importance of social change, economic change, private initiatives, and public intervention in shaping the payments system.

In this paper we analyze the evolution of payments in the Low Countries and show how money of account, a convention which spread throughout the entire area from the 14th century onwards, eliminated most of the problems associated with paying cash by enabling people to settle transactions in a fictional currency accepted by everyone. As a result two functions of money, standard of value and means of settlement, penetrated easily, leaving the third one, store of wealth, to whatever gold and silver coins available. Since most transactions could be settled in money of account, the poor coin circulation is unlikely to have affected whether or not people took credit. Moreover, money of account gave people a means to price the credit which formed part of so many transaction, so if they did not do so this must have been choice rather than force of circumstances. From what we have argued above it follows that, in looking at payments, we will not discuss the immense variety of ways in which people paid each other, but we will focus on analyzing changes in modes of payment for their causes and effects in general, and more specifically on those changes that promoted the emancipation of credit from payments.

2. Cash

Until well into the 19th century people needed some determination if they wanted to pay or receive cash because that was highly inconvenient. When in 1577, for example, a Limburg bailiff had to put up a caution of 300 guilders to secure his position, he did that with a total of more than 210 coins of 19 different types from all over the Low Countries and abroad.[10] In 1582 a Leiden merchant's household possessed cash worth almost 670 guilders made up of 28 different coin

[6] ***Ref Van der Wee, Van Dillen.
[7] Lambrecht, 'Reciprocal exchange', 243-244; Kooijmans 2014.
[8] Willems, *Leven* ***.
[9] Van Deursen, *Graft*, 111, 126-127; Faber, 'Inhabitants' 152, 155; De Muinck, *Regentenhuishouding* 241; *Chk Ringoir
[10] Nijssen and Van Laere, 'Muntcirculatie', 270-271.

types from the northern and southern Netherlands, France, Italy, Spain, and even Portugal.[11] Some sixty years later a Holland house buyer wanted to pay the purchase price of 448 guilder and one stuiver in cash. At the time the most common type of silver guilder coin weighed about 20 grams, so he would have to amass upwards of 450 coins weighing roughly 9 kilos of silver. To reduce the tedium of collecting, sorting, and counting that lot our buyer decided to use gold coin, which was scarce at the time and thus not only expensive relative to silver, but difficult to get hold of. As a result he had to scrape together more than fifty coins of seven different types, including some foreign ones.[12] The profusion of coin types stretched all the way down to the smallest copper ones. A Brabant monk listing coin types current at the end of the 16th century identified no fewer than seven coins below the stuiver, 1/20th of a guilder and the smallest silver coin, valuing of six of them but sighing about the seventh that he did not know its value either.[13] Consequently even simple acts like buying daily provisions required juggling with figures and fractions by everyone involved.

These examples neatly illustrate one key obstacle of paying cash: the huge variety of local and foreign coins in circulation, a chaos to modern eyes.[14] To make matters worse the value of those coins, even ostensibly similar ones, could vary considerably. Minting was, and remains, a sovereign right. Nowadays economic motives dominate currency issuing policy, but in the Early Modern period sovereigns managed currencies for their own benefit, manipulating weight and precious metal content of coins to suit their financial needs. As a result successive issues of one type of coin, say the guilder, often varied in weight and fineness, and therefore in value. Sometimes changes in value were openly advertised by a different effigy on the coin, sometimes the changes were made surrepticiously. Such manipulations affected a coin's absolute value, but its relative value, its value as expressed in another coin, also fluctuated, depending on factors such as gold and silver prices, a shortage or abundance of particular coins, or a general degradation of the quality of a particular range of coins. Thus the gold St Andrew guilder introduced by Philip the Good in 1466 initially valued 21 silver *stuivers* (stivers), but as the quality of stuiver issues declined this rose by 30 per cent to 28 stuivers in 1496. In that year the St Andrew guilder was replaced by a lighter St Philip guilder worth 24 stuivers, which in turn made way for the yet lighter Carolus or Charles guilder issued from 1521 with a value of 20 stuivers. During the second half of the 16th century exchange rates between coins spiralled upwards; the value of the heavy silver rijksdaalder (rixdollar) expressed in stuivers rose from 28 in 1548 to 48 in 1616, the gold ducat doubled from two to four silver guilders.[15] Anyone handling guilders therefore needed to know not only the

[11] Van Gelder, *Gegevens bezit* I, 436-437.
[12] Van Deursen, *Graft* 148.
[13] Nijssen and Van Laere 'Muntcirculatie', 280-281.
[14] As termed by Polak, *Historiografie*.
[15] Van Gelder, *Nederlandse munten* 115.

specific type of coin, but also its actual value in stuivers at that moment. In addition transacting parties, notably in the wholesale trade which often handled coins by the sackful, had to agree on what constituted proper payment: coins counted by weight or by tale, that is to say by their face value. The latter practice could easily lead to disputes if a counterparty tried to pass off worn, torn, or clipped coins as full weight currency. Smaller denomination coins were often rolled together to substitute for other, larger denominations, rendering it difficult for receivers to check what they got.[16] Even the chambers of the Dutch East India Company VOC tried to cheat each other with underweight coins, prompting the central board to ban the practice in 1608.[17]

Then again, the handling of coins in loads was not always possible because the available supply rose and fell. Coins could disappear from circulation through massive hoarding if a depreciation was imminent, or else because international merchants exported them to settle trade deficits. Conversely, trade surpluses produced an inward flow of coins, as did the issuing abroad of light coins mimicking heavier local ones, fostered now by the political rivalry between princes, now by the economic competition between autonomous mints. The dukedom of Gelre, for instance, pestered surrounding provinces of the Habsburg Netherlands with substandard coin issues until Charles V finally took possession of it in 1543. However, this failed to bring about a uniform coinage in the realm because during the 1550s several mints in formally independent enclaves resumed the production of various foreign coin types. That flow increased sharply from the late 1560s when, following the Dutch Revolt, breakaway provinces asserted their autonomy by starting to mint all kinds of coins. Philip II's government in Brussels succeeded in reimposing a centralized currency policy for the southern Netherlands, but it took the Estates General of the Dutch Republic more than a century to gain control over minting in the north.[18]

3. Money of account

Governments tried to combat the reigning confusion in two ways. They regularly issued lists with official exchange rates between local and foreign coins in circulation, but in the absence of means to enforce rates these lists only served as a guide to what government offices would accept in payment.[19] Market prices could differ considerably, depending on the balance between supply and demand for particular coins or for gold and silver.[20] Governments provided a more effective

[16] Welten, *Met klinkende munt* 30.
[17] National Archives The Hague (henceforth NA) 1.04.02 VOC inv. no. 221, index resolutions 1602-1736, fol. 340-341, 4 August 1608.
[18] Van Gelder, *Nederlandse munten* 45, 80, 94, 105, 140.
[19] About the lists, see Van Gelder, 'Gedrukte muntplakkaten', and idem, *Gedrukte muntplakkaten*.
[20] An example from the 1630s in Van Deursen, *Graft* 148. The fledgling Amsterdam Wisselbank did not stick too closely to official exchange rates during its first two decades in existence: Van Dillen, *Bronnen* I, 29, II, 880*** chk; see Van der

remedy against confusion in the form of a money of account, usually a standard currency which, having disappeared from circulation, continued to serve as an accounting convention, a fictive unit for valuing all other currencies which spread from the administration into more general use.[21] Originally every city possessed its own such yardstick, and within some cities dedicated cloth halls even had their own money of account for doing business on the premises.[22] Over time regional ones emerged and the commercial power of the Flemish cities combined with Philip the Good's unifiying policy to propel the pound Flemish into a supra-regional currency. By 1498, even commercial rival Brabant had adopted it.[23] As a consequence the demand for money changers' services dropped. During the second half of the fifteenth century this profession almost disappeared from Flanders and Brabant.[24] Only a handful of money changers managed to hold on, augmenting their income as buying agents for official mints by diversifying into the cashiers' business and getting involved with public finance transactions. Money of account therefore had a unique effect. Other means of settlement such as cash, bills of exchange, or bills obligatory all needed one form of intermediation or another and thus provided a basis from which financial services could evolve into banking. However, by providing people with a very simple and safe expedient for switching between currencies without the need for intermediation, money of account in effect cut the scope for such an evolution.

In 1526 Charles V attempted to harmonize the moneys of account current in his Low Countries possessions by ordering the adoption of the guilder of twenty *stuivers* each subdivided in twelve *deniers* as such.[25] But habits died hard in a society wedded to conventions.[26] The pound Flemish remained in widespread commercial use. Bankers and international wholesalers in the southern Netherlands often stuck to it, though the retail end of the supply chain switched to guilders.[27] Rural Flanders still used the pounds during the second half of the eighteenth century.[28] Pounds Flemish also continued to be used in the provinces that broke away following the Dutch revolt. The Amsterdam securities trade, for instance, adopted 500 pounds Flemish as the standard

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Wal, *Rekeneenheid* 73-74, 76.

[21] Cf. Aerts, 'Inhoud' 184-193, 196-197; Lemmens, 'Rekenmunt'; De Meyer and Van den Elzen, 'Van geschenk'; Peeters, 'Middeleeuwse rekenmunt'; Pierson, 'Bijdrage'; Spufford, *Monetary problems* 13-28; Van Uytven, *Stadsfinanciën* 56-70; Van Werveke, 'Monnaie de compte'. Money of account is something different from coins of account, see Zuijderduijn, 'Schuiven', and Tas, *Rekenpenningen*.

[22] Vercouteren, 'Geldwisselaars', 10-11; Aerts, 'Absence', 97-98.

[23] However, business in the Flemish town of Hondschoote, an important textile production, largely stuck to the rival Paris pound: Coornaert, *Draperie-sayetterie* 326.

[24] Vercouteren, 'Geldwisselaars', 16-23; Van der Wee and Materné, 'Kredietsysteem', 69-72; Aerts, 'Absence', 97-98, 100. Despite hosting important regional fairs Deventer could make do with a single money changer during the fifteenth century. His main occupation was taking poor coins out of circulation and sending them to the local mint for recoinage: Sneller, 'Geldwisselaars', 491-492, 496.

[25] Van Gelder, 'Geschiedenis gulden' 37.

[26] Cf. Van Deursen, *Graft* 95-96 for the surprising longevity of Catholic conventions about dates among Protestants.

[27] Janssens, *Geldwezen* 5-6.

[28] Lambrecht, 'Reciprocal exchange' 242.

amount for dealing in VOC shares following the company's launch in 1602.[29] The Middelburg Wisselbank kepts its accounts in the same currency, and as late as the 1760s city officials of that bank guilder bastion, Amsterdam, regularly expressed amounts of money in pounds Flemish rather than guilders.[30] In doing so the city fathers trailed commercial custom rather, which had long since converted to guilders.[31]

Money of account was more than a simple accounting convention, it offered a low-cost solution to the four handicaps of cash: its weight, the profusion of circulating coins, the uncertain values of those and their fluctuating availability. Coin was a commodity whose price and availability fluctuated, whereas money of account was always available and could perform two money functions, standard of value and means of settlement, cheaper than cash, which retained an advantage only in effecting the third one, store of value. Consequently there is no reason to suppose, as the literature sometimes does, that a shortage of coin generally or particular deficiencies in the circulation of coins hampered economic growth.[32] The supposition that it did usually rests on taking M in Fisher's famous equation of exchange MV=PT to mean cash alone instead of total money, and taking velocity V as a constant, in which case a drop in available coin necessarily puts pressure on prices P and/or economic activity T.

We will not discuss here the suitability or otherwise of applying Fisher's equation to the Early Modern Period or the likelihood of V remaining ever constant.[33] For our present purpose we only want to underline the common mistake of taking M as cash alone, because of the many ways in which money was created. Bankers, cashiers, and money changers did so by opening book credits and extending formal loans, and the spread of bookkeeping standards enabled more and more merchants to follow suit. Bills of exchange circulated in rising numbers and their use widened to include a growing number of cities and merchants. Assignments, a form of cheques, and bills obligatory became a central feature of the Antwerp market, their use boosted by a system of clearing run by cashiers and by a better negotiability following the introduction of formal rules governing endorsement.[34] We have no way of knowing the amounts of money thus created in circulation, or even the proportion of cash to other kinds of money, and therefore will say no more than that the four handicaps of cash put sufficient premium on using alternatives to widen M considerably. Sudden shortages of cash caused by a rush for liquidity did, of course, continue to happen quite regularly, but in normal circumstances the alternatives provided sufficient stretch to

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29 Petram, 'World's oldest', ***; Van Dillen, *Oudste aandeelhoudersregister*, ***. Accounts VOC Middelburg in pd Vl***?
30 Van Dillen, *Bronnen* II, 1103, 1104, 1108, 1110, 1111, 1146, 1281 ff.
31 **Ref.
32 Ref***; De V & VdW? Day; Sussman, 'Late Medieval'.
33 See for that Aerts, 'Economische geschiedenis' 51-57.
34 Van der Wee, *Growth Antwerp* II, 29, 334; idem , 'Antwerp', 150-152; Aerts, 'Absence'; De Smedt, 'Keizerlijke verordeningen'.

remedy currency deficiencies.[35]

Having a common denominator like the pounds Flemish greatly facilitated this stretch, but we have to make an important reservation here. Using money of account did not make sense for everybody. Public administration officials and allied occupations such as notaries public used it as a matter of course, but for others the convention made sense only from a certain minimum level of financial operations and if they possessed basic numeracy. Bookkeeping skills appear not to have been vital unless the money was used for more complex transactions such as clearing and credit. At Hondschoote, the leading Flemish cloth production centre from the early fifteenth century, money of account was commonly used long before the habit of formal bookkeeping spread throughout the business community.[36]

Money of account therefore had the effect of splitting society into two groups, people who used it and people had no need to, so it formed what we might call Kuroda money, a currency whose circulation remained restricted to a particular social group.[37] We have no idea how big that group was, nor its development over time. The ups-and-downs of the currency circulation put a premium on adopting money of account, so the ratio of users to non-users probably rose over time, but it will have differed from one place to another one. Since the premium was highest for wholesalers, the money of account convention presumably spread from them along supply chains to, on the one hand producers, and on the other hand the retail trade. Its use will have suited both the products and the clients of sectors such as clothing, footware, or luxuries like books, but in the food sector the convention will have stopped at the retail level, money of account being impractical for the small sums of daily or weekly purchases. Shopkeepers, stallholders at food markets, and innkeepers must have dealt in coin with their customers and in money of account with their suppliers. We probably have to include the ubiquitous itinerant peddlers in this group as well.[38] Therefore the food retail sector must have acted as the hinge between money of account and coin, which, as we will see shortly, was partnered by its function in transforming suppliers' medium-term credit into short-term consumer credit.

This hypothesis allows us to draw a tentative borderline in society. Money of account is unlikely to have spread to people with subsistence incomes whose transactions mostly concerned small-scale peddling and purchasing daily necessities. Above that level people increasingly needed to be familiar with money of account since both their work and occasional transactions required it. This was true for women as much as for men, at least at the top of society. When Magdalena Thijs,

[35] Cf. for such shortages or *stretezzas* for instance Van der Wee, *Growth Antwerp* II, 29, 57, 141, 148, 149, 200, 203, 205, 240, 243, 260, 263, 264, 266, 267, 282, 359.
[36] Coornaert, *Draperie-sayetterie* 325-326.
[37] Cf. Kuroda, 'Introductory note' and idem, 'Concurrent currency circuits'.
[38] Ref peddlers; Van Deursen, *Graft* about the widespread bread peddling there.

for instance, started her own financial administration on being widowed in 1616, she used money of account, which she must have learned as a girl or otherwise from her late husband or from her father, prominent merchants both.[39] We do not have to know how widely money of account was used to underline once more that deficiencies in the circulation of coins are unlikely to have seriously handicapped trade.[40] For the same reason we must doubt whether currency vicissitudes promoted the use of credit across the board, and restrict this possibility to social groups unfamiliar with money of account, as we will discuss below.[41]

We can observe the functionalities of money of account by looking at the surviving business records of two wholesale merchants active either side of 1600, Jaspar van Bell and Arend Kenkhuis. Styled as a memorial, an aide mémoire, the documents look remarkably alike, listing details of individual transactions, from initiation to completion, one after the other in no apparent order. The character of the respective entries, however, reveals significant differences between the two businesses concerned. The Bois-le-Duc merchant Jasper van Bell conducted an intraregional trade in fabrics and ironmongery products, with occasional consignments to Spain.[42] Judging from his 1560s memorial he funded his operations to a considerable degree with debt in the form of IOUs, issued to cover either postponed payment for deliveries received, or for round sums of money raised at interest. As a rule the IOUs were not directly secured on Van Bell's real estate, so creditors probably had only his reputation as surety, that is to say, his person and goods, a formula customary for IOUs. Whatever the collateral, Van Bell in effect created money, the circulation of which was greatly facilitated by it being in a stable and widely recognized, fictive form, money of account. Creating money in this way was part and parcel of the Low Countries' Early Modern economy. Merchants practiced it on a wide scale, and in financial centres like Bruges, Antwerp, and later Amsterdam money changers, cashiers, and bankers did so, too. This practice of money creation gives us another reason to doubt whether a shortage of good coin necessarily hampered exchange.

Returning to Van Bell, he usually wrote the figures concerning his many and varied deals in money of account, Carolus guilders of 20 *stuivers*, occasionally switching to pounds Flemish and more rarely to Philippus guilders of 25 stuivers. Recalculating his receipts of local coins into money of account must have been second nature to him, but Spanish currency obviously presented a difficulty, so Van Bell did those sums in ducats, reals, and maravedis. Some twenty years later another wholesaler, the Delft merchant Claes Adriaensz van Adrichem, also translated his local receipts and expenses into guilders of account, but tabulated the expenses incurred in the Sound

39 **ref thesis Maarschalkerweerd.
40 Day, numismatic lit NL ***; Sussman, 'Late Medieval'.
41 Willems, *Leven* ***.
42 Pirenne and Formsma, *Koopmansgeest*.

or in Danzig in the local money of account and recalculated the total into guilders.[43] The list of a Leiden wholesaler's possessions in 1583 reveals the complexity of day-to-day commercial reality normally hidden behind the screen of accounting conventions.[44] The cash money found included a sum of just over 670 guilders made up of more than 470 coins of over 27 different types from all over the Low Countries, Spain, Portugal, France, and Italy. Most coins were recalculated into money of account according to the latest official exchange rates published in 1579, but four were not, so the clerk drafting the list clearly knew the market rates. One wonders whether a merchant would also have made the error of counting one stuiver as a guilder, i.e. a factor of twenty difference.

Complexities of a very different kind dominate the ledger of Arend Kenkhuis, active in the northeastern Almelo region from the 1620s into the 1640s.[45] We do not know the size of his business, quite as varied as Van Bell's, without the exports to Spain but with at least one import of overseas timber.[46] In keeping with custom Kenkhuis recalculated all his transactions into money of account. Actual coins appear only occasionally in the book, for instance to specify a sum of cash lent. What sets the Kenkhuis ledger apart from Van Bell's administration is the character of the transactions recorded. The entries usually summarize the settlement of multiple transactions between Kenkhuis and his counterparties, as often as not covering a considerable time, months or even years.[47] The individual transactions were only partly monetized, in two senses. First, the parties concerned valued the goods and services exchanged in money, but very rarely used cash to settle the balance, which was either carried over to a next meeting or offset by a specified future supply of goods or services. Money thus performed one function, as a measure of value, because the transactions recorded, even if looking like barter, always pivoted around money. But it did not really serve as the means of exchange, the second main function, which gives us another reason to doubt whether coin shortages hampered economic exchange: money of account provided a ready alternative to cash which people could use even in a total absence of coin.

The second sense in which Kenkhuis's transactions were only partly monetized concerns their credit side. Like most merchants Kenkhuis created money as a matter of course, but as often as not in an undifferentiated way. Whereas Van Bell, for instance, wrote down the terms and conditions of all credit received and extended, Kenkhuis's credit remained largely unmonetized and even undetermined as to its term. His notebook shows three different kinds of credit, time lapses between delivery and payment, balances carried forward, and formal loans. In the first two credit

[43] Winkelman, *Bronnen* III, 534-569.
[44] Van Gelder, *Gegevens* I, 436-437.
[45] Hesselink-Van der Riet et al., *Schuldboek*.
[46] Hesselink-Van der Riet et al., *Schuldboek* 287, no. 742.
[47] Cf. for instance Kenkhuis's transactions with Lambert Hagedoorn over a period of twenty years, Hesselink-Van der Riet et al., *Schuldboek* 55-56 (no. 89), 437-438 (no.'s 1233 and 1234).

always remained implicit, without an apparent set term, and unpriced. We cannot make out his overall balance, but the entries give a strong impression of it always being overwhelmingly positive. Moreover, their sequencing of appears to suggest that Kenkhuis practiced a rudimentary form of fractional reserve banking by careful scheduling of his settlements, which may have been geared to his travelling around the country in set patterns. As for the third type of credit, formal loans, Kenkhuis did charge interest on some of them, but the summary nature of his jottings prevents us from understanding why he did so for some but not others, nor why some were covered with a formal bond, others not.[48]

Thus, whereas the terms and conditions of goods and services exchanged were monetized in the sense of being clearly defined and expressed, those for credit often were not. In such cases Kenkhuis could have used money of account for its definition, yet he did not, so both sides must have preferred to leave the credit undefined. That is to say, they either failed to perceive the hidden costs of credit, for instance if a counterparty's unfamiliarity with money of account forced Kenkhuis to barter, or else they ignored them, which really means they accepted them in return for social or economic benefits which we can no longer observe. In any case we should be wrong to interpret the swapping of goods and services as a sign of an underdeveloped economy, of backwardness, in terms of the older literature the persistence of a Naturalwirtschaft before the onset of the modern Geldwirtschaft.[49] First, because Kenkhuis clearly knew how to price and collateralize credit and he understood the advantages of doing so, but chose not to for reasons unknown. Second, this type of cashless transactions remained very common throughout the Early Modern Low Countries regardless of commercialization levels. They occurred regularly until well into the seventeenth century in Hondschoote, which by then had been a leading textile production centre for more than two hundred years.[50] At Markegem in inland Flanders, a big farmer performed a similar money of account based intermediary function as Kenkhuis during the third quarter of the eighteenth century and a big farm in the Walloon part of Brabant did the same around 1800.[51] In the Salland region of Overijssel during the 1740s, the manager of the Rechteren manor ran a cashless settlement system with all his tenant farmers which benefitted notably the small ones since it enabled them to draw on credit in hard times and repay with labour.[52] Mutual settlement systems avoiding cash payment appear to have been ubiquitous elsewhere, too. They have been found from seventeenth-century Cheshire to Würtemberg, across the early modern French

[48] For instance Hesselink-Van der Riet et al., *Schuldboek* 70 (no. 145).
[49] Ref to older lit: Simmel etc.
[50] Coornaert, *Draperie-sayetterie* 327-328.
[51] Lambrecht, 'Reciprocal exchange', *Continuity and Change* 18 (2003) 237-261. Cf. Hoffman and Meuvret on France, Vickers on colonial New England.
[52] Kooijmans 2014.

countryside, and in colonial New England.[53] Perhaps cultural values such as attitudes to money determined whether or not people made the credit component of a transaction explicit; perhaps social relations, and more specifically asymmetric or mutual dependency, did.[54] Kinship does not appear to have entered in the equation.[55] What matters here is that, whether in Twente, Salland, Hondschoote, or Markegem, money of account gave people the option to define and price credit, but at times they still preferred not to do so for reasons unknown to us.

Let's rephrase what we have just observed. The character of payments changed over time, from a periodic settlement of numerous transactions to the conclusion of a single one following more or less immediately after an exchange of goods or services. During this process the siamese twin money and credit separated into two distinct economic transactions serving different purposes and priced accordingly. The tempo of the process varied widely, over time, from area to area, and from one social group to another one. Money of account was an important driver. It had been available across the entire area by the late Middle Ages, so we must explain any lags in monetization from factors other than the availability of money: the scale of transactions, cultural attitudes, convenience, education, the nature of relationships.

This leads us to conclude that, for people familiar with money of account, it was not a shortage of money which made them use credit, let alone forced them to do so. Credit conditions may have been opaque and credit's invisible price high, but they possessed a means of payment if they wanted to avoid it. But did that also hold for people unfamiliar with money of account?

4. Cash and credit

As we have seen above, money of account probably did not reach people with subsistence incomes whose use of money remained limited to small-scale selling of cheap goods or services and to purchasing daily necessities. The answer to whether or not they were forced to take credit therefore depends on the supply of small coin. There is a strong opinion in the literature that Early Modern governments restricted the minting of small coins because the available technology did not permit a production of sufficient quality to deter the counterfeiting of what was in effect fiat money.[56] If true, the consequent shortage of small coin might have forced retail customers to take credit.

Though we do not have complete data about the minting of small coin, we do know enough

[53] Matthews, 'Money supply'; Ogilvie, Küpker and Maegraith, 'Household debt'; Hoffman, *Growth*; Vickers, 'Errors'.
[54] Muldrew, Howell (Fontaine).
[55] Cf. Sabean, *Property*, and idem, *Kinship*, Mathieu, Sabean and Teuscher, ed., *Kinship*; Krausman Ben-Amos, 'Reciprocal bonding'.
[56] Sargent and Velde, *Big problem*; see however Volckart, 'Big problem'.

to state with confidence that its supply appears to have been sufficient overall.[57] The government of Charles V initiated the minting of small copper coins to replace medieval billon coins, also called black money because of the colour which the inferior silver alloy assumed over time. Following the Revolt mints in the north started producing copper coins by the million, the south following suit a few years later. Both regions continued minting copper coin at an apparently high level.[58] When during the War of the Spanish Succession the Brussels government had lost power over some of the southern Netherlands provinces, various mint entrepreneurs started competing with each other in producing floods of copper coin.[59] The authorities did limit the minting of small coppers, not for fear of counterfeits but because making the coins was so profitable that, without limitations, copper would drive the smallest silver coins out of circulation.[60] The desirability of providing small coin to facilitate exchange was not lost on the VOC, which during the entire eighteenth century minted large amounts of copper *duiten* or doits for export to Java, where they proved to be very popular.[61]

We can observe the phenomenon of coppers very well at the retail level. Shopkeepers and pub landlords received small copper coins in such abundance that they stuck them together into paper covered rolls to form silver coin equivalents.[62] Called *worp*, *cahot*, *packjes* or *knapper*, such rolls appear to have circulated unhindered by the fact that receivers could not easily check their exact value. Our database of probate inventories shows them to have been present in the northern Netherlands as early as 1628 and ubiquitous in its western provinces by the beginning of the eighteenth century. They do not show up in the probates from the eastern provinces, but at least by the 1740s they were common enough in the southern Netherlands. Limburg shopkeepers sent rolls to suppliers in areas where there was demand, so presumably the more highly commercialized provinces drew copper coins from the less commercially oriented ones.[63]

Copper money also flowed in from abroad, channeled by specialized coin traders.[64] Changing economic circumstances drove a more or less constant ebb and flow of copper, like

[57] Polak, *Historiografie* omits small coin from his data for the northern Netherlands, but the Van Cauwenberghe and Verachten dataset about southern Netherlands minting does give them: http://www.geldmuseum.nl/museum/content/dataset-monetaire-geschiedenis-van-de-zuidelijke-nederlanden-1493-1789. Cf. also Van Gelder, *Nederlandse munten*; Van Gelder and Hoc, *Monnaies*, Baerten, *Muntslag*, Janssens, *Geldwezen*, and Scheffers, *Om de kwaliteit*, the latter drawing together scattered production data for eighteenth-century Holland to give a convincing impression of the general availability of copper coin.
[58] Scheffers, *Om de kwaliteit* ***; Baerten, *Muntslag* 86, 94-95, 98-100; Janssens, *Geldwezen* 8, 21, 23-25.
[59] Witte, 'Fabrication'.
[60] Van Gelder, *Nederlandse munten* 164-167; Janssens, *Geldwezen* 52-53.
[61] Feenstra 2014.
[62] Welten, *Met klinkende munt* 25-33. Retailers also marshalled the coin circulation, sending specific coins towards one area or another according to demand. Collectors of money for taxes, church services and charity functions amassed copper coins as well, and we know of the Amsterdam orphanage that by 1680 at least it commonly handled rolls of duiten: Scheffers, *Om de kwaliteit* 151. ***Danielle van den Heuvel (Elise van Nederveen Meerkerk).
[63] Welten, *Met klinkende munt* 29-30; Janssens, *Geldwezen* 178-179.
[64] Scheffers, *Om de kwaliteit* 229, referring to a complaint voiced by the Holland mintmasters in 1753.

there was in silver and gold, resulting in occasional or even recurrent shortages.[65] For instance, the high bullion prices which drove silver coins out of circulation during the first decades of the eighteenth century must have driven up demand for rolls of coppers to substitute for small silver coins. This appears to have drained the copper coin circulation, leading to an influx of inferior coppers from elsewhere.[66] By 1738 the circulation had deteriorated to such a degree that Amsterdam shopkeepers refused to accept any copper at all. The resulting inconvenience drove citizens to vent their anger by occupying city hall, prompting the authorities to start minting new coppers.[67] The incident highlights at the same time the occurrence of occasional coin shortages and the fact that the public considered them a nuisance, while the official response shows the authorities aware of the need for an effective remedy. Considering the above we may summarize that stuctural shortages of small coin did not really occur.[68] As an aside we want to point to the retailers' role in sparking the incident. The money of account convention enabled supply chains to pass down the cost of coinage deficiencies, that is to say the foreign, underweight, clipped, or defaced coins, or the need for credit during occasional shortages, to the interface with consumers. In effect that cost will have been borne by retailers serving customers unable to run up debts large enough to settle in full money, and by those customers. If the cost was not, as we argue, a structural one, nevertheless it was at times a very real one.

Thus at both the wholesale and retail level the means were generally available to separate credit and payment, so currency reforms are unlikely to have caused the apparent decline of credit in eighteenth-century Antwerp noted by Willems.[69] Clearly the availability of coin was a necessary but not a sufficient condition for reducing the amount of credit people took: if they did so, it was because low and irregular incomes or long intervals between wage payments reduced the amount of ready money they had available, or because they found cash a chore.[70] The probate inventory data also contradict the supposed link between coin availability and credit, at least with regards to the Dutch Republic. Table 1 lists the total number of probates in the dataset, the percentage of probates with debts and with cash, and the average amounts of debt and cash per probate that had them, grouped in four fifty-year periods. We split the data into two subsets, one for the western and one for the eastern provinces, to see if the known economic differences between these two parts of the country shaped patterns of debts and cash holdings differently.

[65] Hoc, 'Circulation'. Janssens, *Geldwezen* 21 mentions one extreme case during the War of the Spanish Succession, when an imminent devaluation of large coins caused a flight from gold and silver into copper and an acute shortage of small coin.
[66] Van der Wal, *Rekeneenheid* 116-117.
[67] Scheffers, *Om de kwaliteit* 142, 204-220.
[68] Janssens, *Geldwezen* 22-25.
[69] Willems, *Leven* ***.
[70] Cf. Lambrecht, 'Reciprocal exchange' 244, 253; on the long wage intervals Lucassen, 'Wage payments'.

Before we start analysing the data first a word about the pitfalls of probate data and particularly of cash items.[71] Probate inventories do not provide a good cross section of society, because some social groups are underrepresented in them, or indeed entirely absent. Such documents were drawn up for specific reasons, in the case of our sample mostly to provide the inheritors with a clear overview of the deceased's estate so as to facilitate its division. Given the cost of drafting them, inheritors will therefore only have commissioned probate inventories if they considered the estate worth it, that is to say if they thought the assets would outweigh the liabilities by a sufficient margin. Consequently our dataset excludes a very large social group, people whose net worth fell below a certain threshold.[72] A different issue concerns the representation of social elites in the set. Having one's possessions counted was not to everyone's taste; in particular the nobility and people aspiring to it appear to have eschewed commissioning probate inventories. Such norms will have differed from place to place and from period to period without us knowing to what extent this affects our set.

Moreover, the information in probates from the northern Netherlands varies. In Flanders and probably Brabant as well probates mostly served to meet legal requirements, assessing a household's possessions with a view to securing a sound financial base for the proper care for any minors left behind, so the local orphan trustees would see to a correct and complete inventory.[73] By contrast, the northern Netherlands probates in our sample were mostly drawn up voluntarily, without the supervision of officials, so it depended on the diligence of the notaries and clerks concerned whether or not all possessions were listed and properly valued. Real property, for instance, was usually included but often not valued, rendering it impossible to calculate net wealth. In addition probate inventories were drawn up following a specific occasion, a person's death, but not at a specific moment in time after that had happened. Days or even weeks could pass before the clerks had done their counting and drafting, a process which itself could take days in some households. During that period some household costs might have been paid, anxious creditors might have presented their claim, and been paid or not, needy inheritors might have helped themselves from the available cash, reducing the amount registered. If for those reasons the amount of cash listed in probates probably tended towards the lower side of what would on average have been present in the household concerned, we must assume that the peculiarities of the coin circulation impacted variously on cash levels. They probably dropped and rose with the ebb and flow of coins noted above unless, as seems possible, variations in the velocity of circulation

71 Ref. to Dibbets, Nijboer, Schuurman, Schuurman/Van der Woude, Ogilvie, Rykbosch, Wijsenbeek-Olthuis Broncommentaren and others about the technicalities of probate research.
72 ***McCants, Probates Amsterdam: policy Weesmeesteren.
73 Rykbosch, *Consumer revolution* 40.

buffered such fluctuations. In addition the cash level of some probates will have been influenced by chance events, death occurring the day after large payments or receipts for instance. Again, we have no way of ascertaining to what extent these factors affect our data. Since at present we want to do no more than identifying broad trends over time, however, we may take the aggregate per time period and region as more important than the details of individual estates.

Turning now to the data, the first thing to notice is the scarcity of probates for the period 1600-1649, a total of 14 for the north and 22 for the south, so those data are not very firm. Fortunately the later periods have enough probates for both parts of the country so we can identify the broad trends we are looking for. The disparity between western and eastern provinces stands out. In the west, a large majority of estates held on average very substantial sums of cash, whereas a minority of eastern estates averages much smaller amounts of cash. However, both sets show a trend towards greater indebtedness, much more marked in the west than in the east. For the western provinces we can thus conclude that there was no link between the use

Table 1, Debts and cash in probate inventories in the Dutch Republic, 1600-1799

Western provinces	***1600-1649***	***1650-1699***
No. probates	14	154
Percentage with debts	57.1	47.1
Average debt per probate with debt	832	1,998
Percentage with cash	78.6	52.9
Average cash per probate with cash	6,154	11,394
	1700-1749	***1750-1799***
No. probates	218	374
Percentage with debts	67.4	81.8
Average debt per probate with debt	1,704	1,861
Percentage with cash	78.9	89.0
Average cash per probate with cash	13,786	1,643
Eastern provinces	***1600-1649***	***1650-1699***
No. probates	22	109
Percentage with debts	36.4	30.3
Average debt per probate with debt	249	2,655
Percentage with cash	40.9	24.8
Average cash per probate with cash	644	213
	1700-1749	***1750-1799***
No. probates	178	407
Percentage with debts	42.7	53.3
Average debt per probate with debt	640	683
Percentage with cash	13.5	19.2
Average cash per probate with cash	143	278

Source: Meertens dataset

of credit and the availability of cash: amounts of credit and cash rose more or less in tandem. Thus what we see here is a rising frequency of market exchange which people chose to effect by using credit, since they possessed the cash with which to pay on the spot. We can observe the same phenomenon happening in the eastern provinces, but this requires digging a little deeper in the data because at first sight the probate inventories there appear to show rising debt levels (Table 2). In the west the number of probates with both cash and debt rose, as did those with only cash and no debt. At the same time the number of probates with only debt remained more or less the same and thus declined markedly as a percentage of the total. By contrast, the number of probates with both cash and debt in the eastern provinces increased as well, but those with only debt rose faster than those with only cash, in both absolute and in relative terms. This does not indicate worsening economic circumstances and increasing poverty, because appearances deceive here.

Table 2, The number of probate inventories by category and area, 1600-1799

Western provinces	***1600-1649***	***1650-1699***
No. probates with cash and/or debt	14	111
of which both cash and debt	7	92
of which only cash	5	37
of which only debt	2	28
	1700-1749	***1750-1799***
No. probates with cash and/or debt	319	374
of which both cash and debt	238	297
of which only cash	53	52
of which only debt	28	25
Eastern provinces	***1600-1649***	***1650-1699***
No. probates with cash and/or debt	17	60
of which both cash and debt	12	11
of which only cash	3	15
of which only debt	2	33
	1700-1749	***1750-1799***
No. probates with cash and/or debt	99	295
of which both cash and debt	38	108
of which only cash	4	24
of which only debt	58	163

Source: Meertens dataset

In the eastern provinces more people died indebted than before but, judging by the number of debts and their typical size this was as a consequence of increased market exchange (Table 3). The number of debts developed similarly to that in the western provinces, and typical debts in the east remained very small with a median amount of around 10 guilders, about half the median in the west and just the kind of sum households would owe to various suppliers. At the same time both the number of probates with cash and debts and those with cash alone increased, so the rising number of probates with debt shows more people switching from self-sufficiency to buying, and presumably selling, on the market, which raised the likelihood of them dying during a chance mismatch between payments and receipts. After all, the estates with debts must have been illiquid rather than insolvent, or else inheritors would not have bothered to commission an inventory.

Table 3, The number of debts by region, period, and value, 1600-1799

Western provinces, debts	***1600-1649***	***1650-1699***	***1700-1749***	***1750-1799***
No. items	83	589	1,668	3,302
of which without value	0	34	104	287
Average amount rest	80.2	7,659	160.2	188.8
Median amount rest	11.4	28	20	20.3
Standard deviation rest	176.7	7,095	876.8	778.7

Eastern provinces, debts	***1600-1649***	***1650-1699***	***1700-1749***	***1750-1799***
No. items	50	319	870	2,265
of which without value	3	18	18	6
Average amount of rest	42.4	301	56	65.6
Median amount of rest	5.6	10	8.2	11
Standard deviation of rest	93.5	1,921	189.8	208.6

Source: Meertens dataset

Summing up, the quality of the coin circulation does not appear to have mattered in determining whether people chose cash or credit. Though occasional coin shortages did occur, other factors clearly mattered more: the inconvenience of cash against the ease of periodic settlement, low wages and infrequent wage payments, here and there no doubt the structure of social relations, perhaps also ingrained habits or cultural attitudes towards the physical handling of money.

5. Streamlining payments

Money of account could simplify cash transactions, but it could not eliminate them. Masses of coins and bullion were handled at every level of society. Macro-economic trade imbalances had to be equalized, resulting in sometimes massive shipments between cities.[74] At meso level troops and

[74] Cf. Coornaert, *Draperie-sayetterie* 327 for coin shipments into Hondschoote lasting well into the seventeenth century, surprising given Flanders' level of commercial and financial sophistication. Perhaps sending money was cheaper than using the cloth manufacturers' monopoly on bills of exchange. Elsewhere in Flanders bills of exchange were common enough by the last quarter of the sixteenth century for the Antwerp Della Faille firm to revert to sending cash only when war interrupted regular communication: Brulez, *Della Faille* 309-317.

sailors needed to be paid or provisioned, tax receipts transferred and bond interests paid, which created a recurring cycle of amassing and then distributing huge quantities of coins. Merchants at micro level also needed hard cash to settle transactions which could not be offset in any other way.

Handling cash was not only impractical for the reasons noted above, it was also expensive. Sorting, weighing, and counting coins was labour intensive, for packing them you needed heavy-duty sacks, chests, or barrels, which in turn required conveyance by dedicated means of transportation and, outside cities, the cover of insurance premiums or even armed guards. As a result most of the financial innovations during the Early Modern Era aimed to cut the costs of cash, either by providing a substitute or by reducing the need for using it. Some of these innovations, for instance the keeping of current accounts settled at long intervals, were simple, low-key solutions that required no intermediation and relied solely on the dissemination of particular bookkeeping conventions backed up by legal sanctions, a process already well underway in the Low Countries by the late fifteenth century amongst merchants, though probably not beyond them.[75] Others depended on intermediary services, and this category interests us because the nature and evolution of that intermediation helps us to understand the way in which markets worked and evolved. Put simply, we need to know to what extent such services structured the supply and demand for financial services, opening up some options for later development while blocking or closing others.

The simplest way of cutting cash costs was running an account with someone, a banker, money changer or cashier, who would take in coins, weigh and sort them, and credit the result in money of account. Merchants could use their accounts for paying each other via book transfers or with rudimentary cheques, and for obtaining coin if they needed cash. In fourteenth-century Bruges this type of business evolved into a one-stop-shop fractional reserve deposit banking with lending, money changing, giro services, and dealing in bills of exchange.[76] It is important to note here that the Bruges intermediaries charged a small fee for the safekeeping of deposits and did not pay interest over them, even if they used them for interest-earning loans. Cashiers in Antwerp and, later, the Northern Netherlands did likewise.

Recurring failures of Bruges bankers and cashiers led the authorities to clamp down on the type of business. The combination of money changing, lending, and deposit-taking was considered too risky and banned, as was the practice of *bicquetteren*, i.e. hoarding full-weight coins and putting poor ones back into circulation, whereas the cashiers were supposed to do the opposite, collecting

[75] Gelderblom, *Cities* ***; Coornaert, *Draperie-sayetterie*, 325-326, noting that by the early seventeenth century merchants generally kept regular accounts, but textile producers often still did not.
[76] See Murray, *Bruges* 148-167.

poor coins and offer them to the mint.[77] It was to little avail. As money of account reduced the scope for professional money changers, this line of business naturally gravitated to the cashiers. Passing poor coin must have been standard practice for everyone in business, though of course the nature of their business gave the cashiers more opportunity for hoarding good ones than anyone else. Consequently Antwerp cashiers continued to provide the combination of changing, deposit-taking, and lending, as did the ones in Middelburg and, later, Amsterdam, though unlike Bruges bankers these firms do not appear to have dealt in bills, perhaps because that activity had moved to brokers. The Antwerp firms also contributed to the experiments with an IOU-based note circulation which, supported by ordinances issued by Charles V, evolved into a key feature of the local money market.[78] By the early seventeenth century this gave them a sufficiently strong position to obtain extended exchange opening hours from the city council so they could operate their mutual clearing once the merchants had left.[79]

At that moment the official antagonism against cashiers had clearly died down in Antwerp, but it failed to do so in the Northern Netherlands. Indeed, there it inspired a novel institution that sent the payments systems of the two parts of the country on radically different development trajectories, the Wisselbanken or exchange banks. For our purpose three aspects of these banks are of importance. First, it remained an exclusively northern phenomenon. None of the southern cities or provinces launched a similar initiative, mainly because the existing intermediation worked to satisfaction.[80] Second, the four banks launched in the north were very different in aims, scale, and scope. The Amsterdam one (1609), set up in close coordination between the city council and the provincial authorities, had the most ambitious aims and achieved the biggest scale. The bank really had a dual purpose. It was to replace the cashiers by providing the merchant community with an easy, secure, and stable means payment via a giro system based on the bank guilder. But the bank was also designed as a buffer for the guilder, protecting it against poor foreign coin flooding in.[81] By the 1650s the bank had succeeded in stabilizing the guilder sufficiently for the board to start casting around for a new function, which led, some thirty years later, to the issuing of *recepissen*, tradeable receipts for bullion lombards. On the back of this business the guilder became Europe's first reserve currency.[82] At the same time the bank's policies, notably its strong pull on gold and silver, gradually reduced the profit margins of the numerous provincial mints until by 1690 they were no longer viable business concerns and submitted to the demands of a centralized currency policy by

[77] At least by the early 18th century churches and charities in Holland were also required to take poor coins from collections out of circulation and bring them to the mint: Scheffers, *Kwaliteit* 178-179.
[78] De Smedt, 'Keizerlijke verordeningen', Van der Wee, Aerts, Puttevils.
[79] Denucé, 'Beurs Antwerpen', ***; Aerts 2011.
[80] Aerts 2011.
[81] Quinn and Roberds 2009*** (Van Dillen, Nieuwkerk, Dehing, Gillard).
[82] Gillard, Quinn & Roberds 2014.

halting the production of substandard coins. By contrast, the three other wisselbanken, in Middelburg (1612), Delft (1621) and Rotterdam (1635) remained quite small and of local significance only.

The third point we need to consider is the banks' impact on the markets which they served. They failed in their original aim of putting cashiers out of business. At the urgent request of merchants the Amsterdam city council had to lift its ban on cashiers, and the other cities could not enforce one either. The cashiers remained in business, but the banks considerably reduced their growth opportunities. The obligatory routing of all locally payable bills through the wisselbank took away the key market segments of bill dealing and handling foreign payments, confining the cashiers to local and regional business. The banks made further inroads on their scope for growth by attracting customers handling big volumes of coin and bullion, such as the local VOC chambers, the masters of the mint, and the tax receivers. As a result the cashiers' business remained a small and marginal one and never came even close to making a transition to banking.[83] With the exception of one or two Rotterdam firms such as R. Mees & Zn. and * Chabot, cashiers in the north were shortlived affairs, and even those two firms stuck to managing cash for their clients and did not move into banking or providing other financial services. To be fair, one further money market characteristic outside the banks' control combined with their dominant position to prevent that transition, at least in Amsterdam and probably elsewhere, too. By 1650 the volume of surplus capital had pushed down interest rate spreads to such a degree that even top merchants such as Louys Trip and Jean Deutz could not realize a meaningful return on family deposits in their respective firms.[84]

The northern cashiers' failure to transit into banks proper stands in striking contrast to what happened in the south. The little we know of seventeenth and eighteenth century bankers shows their business rooting in payments. The Antwerp banker La Bistrate, for instance, active during the second half of the seventeenth century, effected payments between western Flanders, Wallonia, and Lorraine through buying and selling bills of exchange, though he does not appear to have accepted deposits.[85] At about the same time two generations of the Proli family built up a prominent firm in that city. Starting out from the textiles trade, they soon moved into banking and insurance, attracting deposits from private individuals and acting as government cashier. Under the third generation the business became more or less a deposit and giro bank until careless management brought it down in 1785.[86] By 1650 Antwerp cashiers had evolved into fairly large

[83] Jonker, *Merchants* **.
[84] Gelderblom, Jonker and Kool, 2014.
[85] Velinov, Sorbonne PhD 2012.
[86] Houtman-De Smedt, *Proli*.

businesses on the back of the fractional reserve banking pioneered during the sixteenth century, tied to their joint giro system. From there they moved into bullion trading and loan issuing, as the Cogels firm, for instance, did by 1730.[87] Other Antwerp banking firms specialising in deposits, bills of exchange, and payments were De Coninck and De Pret.[88] Nettine, a Brussels banking firm, started out as cashier to the central government, managing tax receipts and effecting government payments, supplying bullion to the mint, and graduating from there into loan issuer and manager of public debt.[89] During the late eighteenth century the cashier's business still provided a good breeding ground for new, large banking firms, notably Van Ertborn.[90]

This contrast between north and south shows the importance of payments in shaping the evolution of the financial system. Centralizing payments in Wisselbanken cut the cashiers's scope for growth, whereas decentralization helped to turn them into deposit bankers in the way the London goldsmith banks did.[91]

Conclusion

[87] Degryse, *Antwerpse fortuinen* 153-158.
[88] Degryse, *Antwerpse fortuinen* 141-148.
[89] Bronne, *Financiers*.
[90] Degryse, *Antwerpse fortuinen* 158-160.
[91] Temin and Voth ***.

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