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Enter the ghost: cashless 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 for the historical importance of money of account or ghost money. Aided by the adoption of new bookkeeping practices such as ledgers with current accounts, this convention spread throughout the entire area from the 14th century onwards. Ghost money 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. When merchants used ghost money to record credit granted to counterparts, they in effect created a form of money which in modern terms might count as M1. Since this happened on a very large scale, we should reconsider our notions about the volume of money in circulation during the Early Modern Era.

Keywords: Money, cashless payments, coins and credit, Early Modern Low Countries.

JEL Codes: E41, E42, E51, N13, N24.

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I. Introduction

In 1974 the distinguished French economic historian Michel Morineau found himself in a quandary. He had drawn together available data on coins produced in France, Britain and the Low Countries during the seventeenth and eighteenth centuries for a tentative estimate of the money circulating in those countries (Morineau 1974). To his surprise, he found that the period's most dynamic economy, the Dutch Republic, had by far the lowest per capita money in circulation, even with the Amsterdam Wisselbank's deposits taken into account. From this, Morineau concluded that businessmen in the Dutch Golden Age must have known ways to economize on the use of coin, but he remained at a loss to explain how.

In this paper we argue that merchants chiefly economized on coin by using money of account or ghost money, a well-known but underrated phenomenon that facilitated payments to a much higher degree than hitherto appreciated. Just as the plot of Hamlet hinges on a ghost, early modern payments systems cannot be understood without ghost money. In the Low Countries and probably elsewhere in Europe, too, ghost money eliminated many problems associated with paying cash by enabling people to settle transactions in a widely accepted fictional currency. Tied to new administrative practices such as double-entry bookkeeping and bilateral current accounts, ghost money also gave merchants a means to create money in the form of book debts, which must have rendered M1 far more elastic than hitherto suspected.

This last aspect links our argument to two wider academic debates concerning money and credit in the Early Modern age. A considerable body of literature suggests that poor coinage and coin scarcity probably hampered economic exchange and, by extension, growth (Day 1978, Munro 1983, 1988, see however Sussman 1998). This looks plausible. We know the circulation to have been deficient. 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). Some historians link those 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). That particular type of credit is thought to have been mostly a function of the social relations between creditor and debtor, as often as not a consequence of economic dependency (Lambrecht

2003, Fontaine 2008, Matthews 2009, Vickers 2010, Rykbosch and Decraene 2014; see however Ogilvie, Küpker and Maegraith 2012).

By taking cash payments as a sign of economic modernity and, conversely, their paucity for backwardness, this last strand of literature echoes the old idea of economies evolving from a *Naturalwirtschaft* via a *Geldwirtschaft* into a *Kreditwirtschaft*. Societies would have moved from subsistence production and barter, via a first stage of market-oriented production in which coins facilitate the exchange of goods and services, to a second stage in which credit provided by banks and other financial institutions replaces coin. In its essence, this stage theory rests on a specific, debatable, conception of how money evolved. One main function of money, means of settlement, would have preceded the two others, gauge of value and store of wealth, and penetrated societies by way of increased market-oriented production. Further echoes of the stage theory of money can be found everywhere in the literature, usually in the form of normative judgements about individual actors, households, or even whole sectors of production being advanced or backward, depending on their apparent level of financial sophistication as evident from the way in which they use money. Cash settlements are then taken as a sign of market-oriented production and an advanced economy, cashless exchange as backward barter.

The view that currency deficiencies handicapped exchange and the stage theory of money share a number of defects. First, the underlying assumption of both 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. Second, there is no reason to assume the settlement function to have preceded the other two. Indeed, the fact that early currency systems started by issuing large silver or gold coins renders it likely for the gauge of value function to have spread first, because these coins were impractical for transactions below a certain, fairly high, value. Third, 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). Fourth, Kuroda's insight about currency systems as consisting of complementary forms of money used differently by different social groups (Kuroda 2008a, b) was taken a step further by Vickers. He shows how various forms of money, modes of payment, and types of credit did not function 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).

An absence of cash payments may thus signify the existence of cashless payments networks, in which cash and credit could both substitute and complement each other, or perform entirely different functions, depending on circumstances. We need to see credit as one amongst a number of options to conclude a transaction, and the choice for a particular option as inspired by a much wider variety of reasons than currency vicissitudes or asymmetric social relations. That means, we must know whether people did have a choice to settle a transaction, for instance, in the absence of good coin. We explore this question for the Low Countries, where ghost money spread throughout the entire area from the fourteenth century onwards. As a result two functions of money, standard of value and means of settlement, functioned smoothly, 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.

2. Cash

Throughout the early modern period, 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 put up the 300 guilders caution required for his function, he did that with a total of more than 210 coins of 19 different types from all over the Low Countries and abroad.² In 1583 a Leiden merchant's household possessed cash worth almost 670 guilders made up of 28 different coin types from the northern and southern Netherlands, France, Italy, Spain, and even Portugal.³ 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.⁴

This profusion of coin types stretched all the way down to the smallest copper ones. A

² Nijssen and Van Laere, 'Muntcirculatie', 270-271.

³ Van Gelder, *Gegevens bezit I*, 436-437.

⁴ Van Deursen, *Graft* 148.

Brabant monk listing coin types current at the end of the sixteenth century identified no fewer than seven coins below the stuiver, 1/20th of a guilder and the smallest silver coin, valuing six of them but giving up on the value of the seventh.⁵ Consequently even simple acts like buying daily provisions or paying rent required juggling with figures and fractions by everyone handling money, which means that the coin confusion must have promoted basic numeracy skills in the entire population. Moreover, people needed to carefully assess the weight and quality of individual coins exchanged. When a tenant of the Mariënweerd abbey near Utrecht paid 10 Philip guilders rent in 1533, he did so in six different coin types, one of which had two different values, presumably because the coins were worn or clipped.⁶

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 (Polak 1998). 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 coin design, sometimes the changes were made surreptitiously. Such manipulations affected a coin's absolute value, but its relative value, its value as expressed in another coin, also fluctuated. Relative values depended 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 sixteenth 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.⁷

Anyone handling guilders therefore needed to know not only the 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

⁵ Nijssen and Van Laere 'Muntcirculatie', 280-281.

⁶ Van Bavel, *Mariënweerd* 361-362. In 1539 another tenant paid with a Spanish ducat, a coin rarely seen, so the monk who accepted made a mistake in valuing it: *ibidem*.

⁷ Van Gelder, *Nederlandse munten* 115.

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.⁸ Even the chambers of the Dutch East India Company VOC tried to cheat each other with underweight coins, prompting the central board to ban such behaviour in 1608.⁹

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 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 re-imposing a centralized currency policy for the southern Netherlands, but it took the Estates General of the Dutch Republic more than a century to wrest control over minting in the north from the autonomous provincial mints.¹⁰ This continuing currency fragmentation failed to have an impact on the north's rapid economic expansion, because ghost money provided a common denominator for handling every kind of coin.

3. Money of account

Governments tried to combat the reigning confusion by regularly issuing lists with official exchange rates between local and foreign coins in circulation. Cashiers and money changers were legally obliged to observe the official rates, but in the absence of means to enforce them, the lists only served as a guide to what government offices would accept in payment (Van Gelder 1990, 1995). Market prices could differ considerably, depending on the balance between supply and demand for particular coins or for gold and silver.¹¹

⁸ Welten, *Met klinkende munt* 25-33; Teeuwen, *Generating generosity*, 152-153; Scheffers, *Om de kwaliteit* 151.

⁹ National Archives The Hague (henceforth NA) 1.04.02 VOC inv. no. 221, index resolutions 1602-1736, fol. 340-341, 4 August 1608.

¹⁰ Van Gelder, *Nederlandse munten* 45, 80, 94, 105, 140.

¹¹ 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, but weighed coins instead: Van Dillen, *Bronnen* I, 29, II,

A more effective remedy against confusion was the convention of a fictive currency, money of account or ghost money.¹² These units had their origins either in the Medieval convention of a pound of silver from which to mint 20 shillings, groats or other standard coin, or in a gold or silver standard coin which, having disappeared from circulation, continued as an accounting convention which presumably spread from government administration into society.¹³ Thus Flanders had its pound Flemish, Brabant the pound Brabantine, the different local pound weights accounting for their different value. Neither had been minted as a coin and they were really reference units of silver against which all coins in circulation could be properly valued according to their weight and fineness. By contrast, during the fourteenth and fifteenth century the city of Deventer had several fictive units, ghosts remaining from gold coins long gone but, similarly to the pounds of silver, really serving as set weights of bullion against which to value circulating coins (De Meyer and Van den Elzen 1980). The life of these ghosts was perpetuated because the public administration continued to use them as reference values for transactions and for setting exchange rates, thereby providing a practical gauge for commercial transactions as well. Coupled to the gradual penetration of bookkeeping standards and mutual current accounts between merchants, these ghosts facilitated cashless settlements of transactions and equally served as standard gauges to value whatever coin available if settling in cash.¹⁴ Thus, contrary to Cipolla's interpretation of ghost money as an odd relic confined to the public administration and the higher reaches of commerce, it was really a widely used convention (Cipolla 1967).

Originally every city possessed its own money of account, and within some cities dedicated cloth halls even had their own money of account for doing business on the premises.¹⁵ Over time regional ones emerged and the commercial power of the Flemish cities combined with Philip the Good's unifying policy to propel the pound Flemish into a supra-regional currency. By 1498 even commercial rival Brabant had adopted it.¹⁶ As a consequence the demand for money changers' services dropped, causing this profession to almost disappear from Flanders and Brabant during the

880-883; see Van der Vval, *Rekeneneenheid* 73-74, 76.

¹² See C.M. Cipolla, *Money, prices, and civilisation in the Mediterranean world, fifth to seventeenth centuries* (Gordian Press: New York 1967) 38-51. The issue of ghost money well summarized by J.F. Chown, *A history of money from AD 800* (Routledge: London 1994) 17-19 and 39-40. A modern interpretation given by M.D. Bordo and A.J. Schwartz, 'The ECU, an imaginary or embryonic form of money: what can we learn from history?', NBER Working Paper No. 2345, August 1987. We are indebted to Michael Bordo for this reference. 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 or ghost money is something entirely different from coins of account, see Zuiderduijn, 'Schuiven', and Tas, *Rekenpenningen*.

¹³ Van Werveke, 'Monnaie de compte' 123-124, distinguishes three different types of ghost money. Since these distinctions do not matter for the functionality of ghost money we want to describe, we have omitted to discuss them.

¹⁴ About the penetration of bookkeeping conventions see Gelderblom, *Cities* 94-100.

¹⁵ Vercouteren, 'Geldwisselaars', 10-11; Aerts, 'Absence', 97-98.

¹⁶ However, business in the Flemish town of Hondschoote, an important textile production, largely stuck to the rival Paris pound: Coornaert, *Draperie-sayetterie* 326.

second half of the fifteenth century.¹⁷ The handful of money changers which managed to hold on, did so by taking on other business, such as buying bullion for the official mints, keeping cash for other businesses, and attracting public finance transactions. In effect, money of account provided people with a very simple and safe expedient for switching between currencies without the need for intermediation.

In 1526 Charles V attempted to harmonize the ghost moneys current in his Low Countries possessions by ordering the adoption of the guilder of twenty *stuivers* each subdivided in twelve *deniers* as such.¹⁸ But habits died hard in a society wedded to conventions.¹⁹ 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.²⁰ Rural Flanders still used the pounds during the second half of the eighteenth century.²¹ 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 amount for dealing in VOC shares following the company's launch in 1602.²² The Middelburg Wisselbank kept its accounts in the same currency, as did the local chamber of the VOC. Moreover, as late as the 1760s city officials of that bank guilder bastion, Amsterdam, regularly expressed amounts of money in pounds Flemish rather than guilders.²³ In doing so the city fathers trailed commercial custom rather, which had long since converted to guilders.

Money of account 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 (Cf. Sussman 1998). 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

¹⁷ Vercouteren, 'Geldwisselaars', 16-23; Van der Wee and Materné, 'Kredietstelsel', 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.

¹⁸ Van Gelder, 'Geschiedenis gulden' 37.

¹⁹ Cf. Van Deursen, *Graft* 95-96 for the surprising longevity of Catholic conventions concerning dates among Protestants.

²⁰ Janssens, *Geldwezen* 5-6.

²¹ Lambrecht, 'Reciprocal exchange' 242.

²² Van Dillen, *Oudste aandeelhoudersregister*, 33.

²³ Van Dillen, *Bronnen* II, 1103, 1104, 1108, 1110, 1111, 1146, 1281 ff.

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.²⁴ 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 already were a central feature of the Antwerp market of the mid-sixteenth century, their use boosted by a system of clearing run by cashiers and by a better negotiability following the introduction of formal rules governing endorsement.²⁵

The nub of the matter is that the many handicaps of cash discussed above put a premium on using alternatives, with the effect of widening M. 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 remedy currency deficiencies.²⁶ Having ghost money as a common denominator greatly facilitated this stretch, even more so when coupled to the use of basic administrative skills. Such skills were not vital for adopting ghost money as a gauge of value. 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.²⁷ By 1530 people like the small Mariënweerd tenant mentioned above were familiar with the concept.²⁸ Presumably supply chains functioned as conduits, money of account trickling down from wholesalers, for whom the premium for using it was highest, to the retail trade. Retailers must have kept track of store credit in money of account unless they dealt with a floating customer base. Stallholders at food markets, innkeepers, and the ubiquitous itinerant peddlers must have dealt in coin with their customers, but in early eighteenth-century Holland shopkeepers and professional service providers like barber-surgeons appear to have been paid only once or twice a year, so they and their customers must have reckoned in ghost money.²⁹ People needed to be familiar with ghost money 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.

²⁴ See for that discussion Aerts, 'Economische geschiedenis' 51-57.

²⁵ Van der Wee, *Growth Antwerp* II, 29, 334; idem, 'Antwerp', 150-152; Aerts, 'Absence'; De Smedt, 'Keizerlijke verordeningen'.

²⁶ Cf. for such shortages or *stretzezzas* 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.

²⁷ Coornaert, *Draperie-sayerterrie* 325-326.

²⁸ Van Bavel, *Mariënweerd* 361-362.

²⁹ Van Deursen, *Graft*, I I I, 126-127; Faber, 'Inhabitants' 152, 155; De Muinck, *Regentenhuishouding* 241.

When Magdalena Thijs, 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 (Maarschalkerweerd 2012).

4. Creating money

But in combination with basic administrative skills ghost money acquired an entirely new dimension. Bilateral current accounts gave merchants the opportunity to create money by opening book debts in ghost money. We can observe this functionality at work by looking at the surviving business records of two wholesale merchants active either side of 1600, Jasper 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 (Pirenne and Formsma 1962). 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, by entering book debts Van Bell in effect created money. Doing this 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, as a matter of course, another reason to doubt whether a shortage of good coin did hamper exchange. Since ghost money was a widely recognized and used money equivalent easily convertible in cash, we should see it in modern terms as belonging to narrow money $M1$. Tied as it normally was to supplies of goods or services, the money or M created by book debts tended to rise more or less in tandem with transactions T and not lead to inflation because neither velocity nor prices would have to rise in order to keep MV equal to PT . Moreover, the character of commercial exchange provided safeguards for the prudent use of ghost money created. Entering in a current account relationship required a considerable degree of mutual trust between merchants. Once established, they maintained it by a regular exchange of account statements and a prompt settlement of balances outstanding. Prompt settlement counted as the hallmark of a merchant's probity, which served as a check on taking too much credit.

Merchants could thus monitor both the volume of money created and on the link between M and T, while in the normal course of business the money they created was also periodically destroyed again by clearing or settlement. In short, the social embeddedness which ensured a regular flow of commerce by the monitoring and enforcement of contracts also regulated the volume of ghost money created. Conversely, this embeddedness also explains what puzzled Morineau, i.e. how the Dutch economy could expand with so little coin per capita: in closely-knit commercial networks, M1 could rapidly expand or contract according to economic need.

Returning to Van Bell, he usually wrote the figures concerning his many and varied deals in ghost money, 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 he also received Spanish coins. These obviously presented a difficulty to him, 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 or in Danzig in the local money of account and recalculated the total into guilders.³⁰ A 1583 list of a Leiden wholesaler's possessions, already mentioned, is unique in revealing the complexity of day-to-day commercial reality normally hidden behind the screen of accounting conventions.³¹ Such lists were usually drawn up in ghost money, but this one shows the composition of a sum of 670 guilders in cash found, which was made up of more than 470 coins of over 27 different types from all over the Low Countries, Spain, Portugal, France, and Italy. All coins except four were recalculated into money of account according to the latest official exchange rates published in 1579, so the clerk drafting the list clearly knew the market rates. One wonders, though, why he 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, from the 1620s into the 1640s active in the northeastern Almelo region, part of the more farming-oriented land provinces bordering on the German lands (Hesselink-Van der Riet 2008). We do not know the size of his business, quite as varied as Van Bell's, without his exports to Spain but Kenkhuis did import overseas timber, at least once.³² 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

³⁰ Winkelman, *Bronnen* III, 534-569.

³¹ Van Gelder, *Gegevens* I, 436-437.

³² Hesselink-Van der Riet et al., *Schuldboek* 287, no. 742.

multiple transactions between Kenkhuis and his counterparties, as often as not covering a considerable time, months or even years.³³ 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, gauge of value, because the transactions recorded were not barter but always pivoted around money. But ghost money served as the means of exchange, not cash.

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 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, the sequence of entries 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.³⁴

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. If they ignored them, that 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*. 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

³³ 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).

³⁴ For instance Hesselink-Van der Riet et al., *Schuldboek* 70 (no. 145).

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.³⁵ At Markegem in inland Flanders, a big farmer performed a similar ghost money-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 1800.³⁶ 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 (Kooijmans 2014).

Mutual settlement systems avoiding cash payment appear to have been ubiquitous elsewhere, too. They have been found from seventeenth-century Cheshire to Württemberg, across the early modern French countryside, and in colonial New England (Hoffman 1996, Matthews 2009, Vickers 2010, Ogilvie et al 2012). 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 (Muldrew 1998, Fontaine 2008, Howell 2010). Kinship does not appear to have entered into the equation (Sabeau 1990, 1998, Mathieu, Sabeau and Teuscher 2007, Krausman Ben-Amos 2000). 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. Thus we conclude that cash shortages did not necessarily force people into debt. Credit conditions may have been opaque and credit's invisible price high, but people familiar with ghost money always possessed a means of payment if they wanted to avoid it. But did that also hold for people unfamiliar with that convention?

³⁵ Coornaert, *Draperie-sayetterie* 327-328.

³⁶ Lambrecht, 'Reciprocal exchange'. Cf. Hoffman (1996) and Meuvret (1971) on France, and Vickers (2010) on colonial New England.

5. Cash and credit

As we have surmised 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. We thus need to know whether or not they had to take credit because small coin was in short supply. According to Sargent and Velde (2002) it was. 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. If true, the consequent shortage of small coin might have forced retail customers to take credit. However, in the Low Countries the supply of small coin appears to have been sufficient overall.³⁷ The government of Charles V initiated the production 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.³⁸ 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 (De Witte 1909). The authorities did limit the minting of small coppers, not for fear of counterfeits, but because producing them was so profitable that, without limitations, copper would drive the smallest silver coins out of circulation.³⁹ 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 (Feenstra 2014).

We can observe the phenomenon of coppers closely at the retail level. Shopkeepers, pub landlords, tax collectors, and public charity collections received small copper coins in such abundance that they stuck them together into paper covered rolls to form silver coin equivalents.⁴⁰

³⁷ 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 Munro, 'Petty coinage'; 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. See also Volckart Volckart 2008 for more general objections to the Sargent and Velde thesis.

³⁸ A large part of Scheffers, *Om de kwaliteit* is devoted to the production of small coin in the Republic. For the Southern Netherlands see Baerten, *Muntslag* 86, 94-95, 98-100; Janssens, *Geldwezen* 8, 21, 23-25.

³⁹ Van Gelder, *Nederlandse munten* 164-167; Janssens, *Geldwezen* 52-53; for an earlier period, Munro, 'Petty coinage', 26, 36-37.

⁴⁰ Welten, *Met klinkende munt* 25-33; Teeuwen, *Generating generosity*, 152-153, Scheffers, *Om de kwaliteit* 151.

Called *worp*, *cahot*, *packjes* or *knapper*, such rolls appear to have circulated unhindered by the fact that receivers could not check their exact value, a problem all the more pressing because poor quality coppers circulated in great numbers. In 1643, for instance, a Delft charity sold an estimated 37,600 copper coins for just over half their face value.⁴¹ The Meertens Institute Boedelbank database of probate inventories shows rolls of copper 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 with shortages, so presumably the more highly commercialized provinces drew copper coins from the less commercially oriented ones.⁴²

Copper money also flowed in from abroad, channeled by specialized coin traders.⁴³ Changing economic circumstances drove a more or less constant ebb and flow of copper, like there was in silver and gold, resulting in occasional or even recurrent shortages (Hoc 1934).⁴⁴ 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.⁴⁵ 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.⁴⁶ 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. We may thus confidently assume that structural shortages of small coin did not really occur.⁴⁷ 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. And, as noted above, large amounts of poor coin ended up in charity collection boxes.

⁴¹ Teeuwen, *Generating generosity*, 163-165, idem, 'A penny', 30-33.

⁴² Welten, *Met klinkende munt* 29-30; Janssens, *Geldwezen* 178-179.

⁴³ Scheffers, *Om de kwaliteit* 229, referring to a complaint voiced by the Holland mintmasters in 1753.

⁴⁴ 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.

⁴⁵ Van der Wal, *Rekeneenhed* 116-117.

⁴⁶ Scheffers, *Om de kwaliteit* 142, 204-220.

⁴⁷ Janssens, *Geldwezen* 22-25.

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.⁴⁸ 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.⁴⁹

6. Cash, credit, and debt in probate records

Finally, we examine probate inventory data for a link between coin availability and credit in the Dutch Republic. Before we turning to the data first a word about the pitfalls of probate data in general.⁵⁰ 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 either facilitate its division, or protect the interests of surviving minors. Given the cost of drafting them, inheritors will therefore only have commissioned probate inventories if the estate was worth it, that is to say if the assets outweighed liabilities. Consequently our dataset excludes a very large social group, people whose net worth fell below a certain threshold.⁵¹ 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. Finally, real property was usually included but often not valued, rendering it impossible to calculate net wealth.

Moreover, the information in probates from the northern Netherlands varies from place to place. 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.⁵² By contrast, the northern Netherlands probates in the Meertens set were mostly drawn up without the supervision of officials, so it depended on the diligence of the notaries and

⁴⁸ Willems, *Leven* 91-127.

⁴⁹ Cf. Lambrecht, 'Reciprocal exchange' 244, 253; on the long wage intervals Lucassen, 'Wage payments'.

⁵⁰ On the intricacies of Low Countries probate data see Wijzenbeek-Olthuis, *Boedelinventarissen* and Rykbosch, *Consumer revolution*.

⁵¹ This was the sensible policy of the Amsterdam orphan trustees: see McCants, 'Goods'.

⁵² Rykbosch, *Consumer revolution* 40.

clerks concerned whether or not all possessions were listed and properly valued. 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.

Therefore 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. Moreover, we must also 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 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.

The Meertens dataset reflects all of these problems. It consists of 2,586 inventories collected from seven smaller towns, where all inventories from the seventeenth and eighteenth century were photocopied, then entered into a database.⁵³ For the purpose of finding out whether the phenomenon noted by Willems, i.e. the gradual supplanting of debt by cash, occurred in the Northern Netherlands as well, we first 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. We then grouped the data for each region into four fifty-year periods and ranked them by the amount of debt and/or cash which they held (Tables 1 and 2 in the Appendix). When looking at the data, the first thing to notice is the scarcity of probates in our set 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 for the later periods our set has 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

⁵³ See for the set's construction <http://www.meertens.knaw.nl/boedelbank/index.php?actie=info>, consulted on 1 April 2015. The towns are: Veesp, Medemblik and Twisk, Doesburg, Lichtenvoorde and Groenlo, Maasland, Maassluis, Oirschot.

more marked in the west than in the east. And neither set shows signs of cash supplanting debt as found by Bart Willems for Antwerp. A considerable number of estates (107 in the western provinces, 427 in the eastern ones) held neither cash nor debt. A further 188 probates had only cash and no debt (142 western versus 46 eastern), whereas 226 probates had only debt and no cash (74 western, 152 eastern). The remaining 437 probate inventories, printed in bold type, held both cash and debt. With this group of probates we can examine whether cash did supplant debt, but this appears not to have been the case. In all four time periods and in both regions, the amounts of cash and debt rose in tandem. Moreover, higher amounts of cash are typically associated with higher amounts of debt, not lower ones. Thus, based on the Meertens Boedels, the two asset types would seem to have been complements, they did not substitute for one another.

Conclusion

In the Early Modern Low Countries, paying cash was a chore, so people, and not only merchants (Spufford 2008), avoided it whenever possible. We show that ghost money provided a ready alternative to coin by facilitating cashless payments in a fictive, stable, unit of account. Moreover, in tandem with bilateral current accounts, ghost money facilitated the creation of money in the form of book debts, rendering the volume of M1 in circulation very elastic. The fact that any expansion of M1 in this way was closely tied to the sale of goods and services minimized the danger of inflation, while the system's social embeddedness limited the potential for abuse. Ghost money thus solves the puzzle posed by Morineau, i.e. the Dutch Republic's rapid economic growth with a low coin circulation.

Our findings have several implications for the way in which we think about the evolution of money and credit in general. First, the gauge of value function of money was probably far more important than the settlement or store of value functions were. For barter transactions to work, they must revolve around some common standard, or else people will not be able to agree. That means we need to abandon the stage theory of monetization progressing from barter via cash to credit because it simply does not work. Instead, we need to rethink what we mean by commercialization and monetization, because what looks like barter was probably already monetized in the sense of using some form of standard. In other words, deep monetization in the sense of Lucassen 2014 must have been preceded by money as a gauge of value.

Second, we should expect a poor currency system to put a premium on people devising alternative means of settlement, rather than reducing their transactions. Ghost money was only one way of doing this, arguably far more practical than the cigarettes serving as currency in Germany following the collapse of the Nazi regime. Third, if people always possessed a way to

settle transactions, credit relations were shaped by choice, not by the necessity of having to take credit in the absence of means of payment. Of course credit could still be a sign of social or economic dependency, as it was in Markegem, Flanders, but not necessarily so: steward and tenants on the Rechteren estate in Salland used cashless payments and credit simply because it was more practical. That is to say, we need to push the arguments of Muldrew, Vickers, and Kuroda, further and start appreciating the social dimension of payments. How Van Bell, Kenkhuis or the New Englanders studied by Vickers settled debts and claims depended heavily on their relationship with the counterparty in question, so examining patterns of settlement tells us more about how their society worked. Even today similar telling social differences in ways of paying persist, in the composition of what people carry in their wallets, in the various classes of credit cards and loyalty schemes, or in the penetration rate of paying by smartphone.

From this third point it follows that, in most places and most of the time, cash and credit functioned seamlessly together as slightly different forms of obligations to pay or rights to receive, rather than distinct and differently priced economic categories, let alone stage posts in a hypothetical evolution from barter via money to credit. That means we ought to focus more on what makes people separate cash from credit by putting terms and price on payments due. In the Low Countries, for instance, rebates (*rabatten*) for early payment were common in commercial centres like Antwerp and Amsterdam at least by 1600, if not before. Perhaps cultural attitudes determined their spreading outwards from there, for instance capitalism rendering people more sensitive to the value of money (Howell 2010, Muldrew 1998). Perhaps commercial pressures did, or both working in tandem. For now, all we can say is that the availability of cash money did not matter, since other kinds of money were always readily available.

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Table I, Meertens Probate Set, Cash and debts in Western Region probates in four time periods, 1600-1799

1600-1649	Debts outstanding						
Cash holdings	0	0 - 10	10 - 100	100 - 1000	1000 - 10000	≥10000	n=
0	1	0	1	0	1	0	3
0 - 10	0	0	0	0	0	0	0
10 - 100	1	0	0	1	1	0	3
100 - 1000	0	0	0	3	3	0	6
1000 - 10000	0	0	0	1	1	0	2
≥10000	0	0	0	0	0	0	0
n=	2	0	1	5	6	0	14

1650-1699	Debts outstanding						
Cash holdings	0	0 - 10	10 - 100	100 - 1000	1000 - 10000	≥10000	n=
0	44	1	4	10	12	0	71
0 - 10	3	0	0	0	0	1	4
10 - 100	14	0	2	3	7	0	26
100 - 1000	8	0	4	6	14	4	36
1000 - 10000	1	0	0	4	9	3	17
≥10000	0	0	0	0	0	0	0
n=	70	1	10	23	42	8	154

1700-1749	Debts outstanding						
Cash holdings	0	0 - 10	10 - 100	100 - 1000	1000 - 10000	≥10000	n=
0	30	2	7	9	4	0	52
0 - 10	4	0	0	4	2	0	10
10 - 100	13	0	3	14	8	0	38
100 - 1000	18	0	6	29	19	2	74
1000 - 10000	9	0	1	6	22	6	44
≥10000	0	0	0	1	1	1	3
n=	74	2	17	63	56	9	221

1750-1799	Debts outstanding						
Cash holdings	0	0 - 10	10 - 100	100 - 1000	1000 - 10000	≥10000	n=
0	22	0	3	11	9	0	45
0 - 10	4	0	2	7	3	0	16
10 - 100	23	4	11	29	8	1	76
100 - 1000	31	0	8	48	45	5	137
1000 - 10000	12	0	1	18	40	13	84
≥10000	1	0	0	3	6	4	14
n=	93	4	25	116	111	23	372

Table 2, Meertens Probate Set, Cash and debts in Eastern Region probates in four time periods, 1600-1799

1600-1649	Debts outstanding						
Cash holdings	0	0 - 10	10 - 100	100 - 1000	1000 - 10000	≥10000	n=
0	12	0	0	1	0	0	13
0 - 10	0	0	1	0	1	0	2
10 - 100	1	0	0	2	0	0	3
100 - 1000	0	0	1	2	1	0	4
1000 - 10000	0	0	0	0	0	0	0
≥10000	0	0	0	0	0	0	0
n=	13	0	2	5	2	0	22

1650-1699	Debts outstanding						
Cash holdings	0	0 - 10	10 - 100	100 - 1000	1000 - 10000	≥10000	n=
0	70	0	5	5	2	0	82
0 - 10	2	0	0	1	0	0	3
10 - 100	7	0	1	4	1	0	13
100 - 1000	4	0	0	2	3	1	10
1000 - 10000	1	0	0	0	0	0	1
≥10000	0	0	0	0	0	0	0
n=	84	0	6	12	6	1	109

1700-1749	Debts outstanding						
Cash holdings	0	0 - 10	10 - 100	100 - 1000	1000 - 10000	≥10000	n=
0	119	2	15	15	5	0	156
0 - 10	1	0	1	1	0	0	3
10 - 100	2	1	2	2	1	0	8
100 - 1000	3	0	1	4	1	1	10
1000 - 10000	0	0	0	0	0	0	0
≥10000	0	0	0	0	0	0	0
n=	125	3	19	22	7	1	177

1750-1799	Debts outstanding						
Cash holdings	0	0 - 10	10 - 100	100 - 1000	1000 - 10000	≥10000	n=
0	226	12	43	38	9	0	328
0 - 10	3	0	2	2	0	0	7
10 - 100	12	2	7	13	5	0	39
100 - 1000	10	1	1	11	5	1	29
1000 - 10000	0	0	0	1	1	1	3
≥10000	0	0	0	0	0	0	0
n=	251	15	53	65	20	2	406