

## Who hoarded in Holland?

### Evidence from the tax registers of Edam, fifteenth to sixteenth centuries\*

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*The question of coin circulation connects the artefact to its historical context. We provide an analysis of cash reports in the small town of Edam and its surroundings in the late Middle Ages. Beginning in 1462, and continuing in 1514 and 1563, the town government took interviews with all householders, asking among others about things their cash holdings. Our analysis shows that money hoarding was much more common in the fifteenth than in the sixteenth century, and that households easily held amounts equivalent of 160-200 day wages of a master. The majority of these cash-holding households came from middling groups and the elite, although there is ample evidence of lowering groups with coins around the house as well. Our study thus contributes to the understanding of the social context of finds of coin hoards. Finally, most coins were reported in 1462, which is here explained as an indicator for economic prosperity during the 'golden age of Burgundy' of the mid-fifteenth century.*

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## **Circulation of coins and hoarding in the late Middle Ages**

The availability and use of money in the late-medieval economy has been discussed from several perspectives. Inspired by monetarist economics, in the 1960s and 1970s medievalists focused on the availability of currency, identifying 'money scarcities' that hindered the late medieval economy. Money disappeared due to contractions in silver mining, coin exports, wearing out of coins, and also due to hoarding of 'good coins.' This conundrum of problems meant that early market economies<sup>1</sup> had to operate in spite of temporary shortages of the main medium of exchange. Such shortages also occurred throughout the year: money was kept aside until the month of May, when leases were due, and which was typically a time when money came into circulation again and many debts were cleared. The same clearing function is visible during fairs. After these dates, money was kept aside again. People who kept money aside were able to save: they held money for later use. They usually did so by means of hoarding: temporarily taking coins out of circulation. Since deposit banking did not really exist yet, coins were buried, or hidden at home, to be used again during the next 'clearing day', or whenever necessary.

Whereas monetarist economists are right to point out the disadvantages of hoarding, from the perspective of the household economists saving might have provided at least some households with possibilities of strategic behaviour – such as anticipating future expenses. Our knowledge of pre-industrial saving behaviour is very limited. Who could afford to save, how much could they save, and what did this mean for individuals and households? And perhaps most importantly: was saving the consequence of not being able to spend, for instance because a merchant had earned more than he could plough back into his business? Or was it a strategy used in anticipation of future possibilities and problems? Regardless whether money was kept aside by accident or intention, the (in)ability to save had repercussions with respect to individuals' and families' capacity to deal with external shocks, such as dearth, their investment in capital assets or human capital, and intra- and

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<sup>1</sup> See esp. B. Van Bavel, *Manors and markets* and Van Bavel et al, 'The organization of markets'.

intergenerational assistance, for instance with respect to helping children set up their own household, or parents maintaining their self-sufficiency during old age. Saving behaviour is therefore crucial for understanding developments in economic and social history – but unfortunately we are often unable to answer the above questions. Initial research into the households of Edam demonstrated that the number of households in possession of cash decreased between 1462 and 1563, and that the number of households with capital market investments increased over the same period of time. Zijderdijn and De Moor suggest the latter replaced the less profitable practise of hoarding.<sup>2</sup> However, historians such as Deneweth and Ryckbosch have also discovered the opposite development. Their research into probate inventories from the Southern Low Countries indicates that the number of households with cash increased in the course of the eighteenth century.<sup>3</sup> The development of cash holding may thus not have been a linear development, going from medieval hoarding to early-modern investments in financial markets, but may rather have been characterized by phases of expansion and contraction. This development was affected by the supply of precious metals and coins, but also by the circulation of coins: did households decide to invest in financial markets, thus contributing to the circulation of coins? Or did they decide to hoard for distrust of financial markets, a lack of access to financial markets, or because of negative outlooks?

To get answers to these questions, as well as questions related to life cycle saving, it is crucial to understand the social distribution of savings. Who could save, and how much could they save? We address this question by looking at the small town of Edam and its surroundings, from 1462 to 1563. Tax registers reveal patterns of cash holding among the different social classes: wealthy and poor, townsmen and villagers, men and women. It does so for the fifteenth century – characterized by money scarcity – and the sixteenth century – characterized by an increase in the availability of precious metals and inflation. To what degree can our case study contribute to answering the above

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<sup>2</sup> J. Zijderdijn and T. De Moor, 'Spending, saving, or investing?' Risk management of sixteenth-century Dutch households' *Economic history review* 66 (2013) 38-56.

<sup>3</sup> H. Deneweth, 'A fine balance. Household finance and financial strategies of Antwerp households, 17<sup>th</sup>-18<sup>th</sup> century', *Tijdschrift voor Sociale en Economische Geschiedenis* 8 (2011) 15-43; W. Ryckbosch, *A consumer revolution under strain: consumption, wealth and status in eighteenth-century Aalst* (2012) 168-172.

questions? How does it link up with studies about life cycle saving? And are there any links to be established with the field of numismatics and archaeology, such as the chronology and size of coin hoards, and the discovery of saving devices such as moneyboxes and piggy banks?

## Sources

The small town of Edam - situated about 20 kilometers northeast of Amsterdam at the borders of the former Zuiderzee - was part of a highly urbanized region, with a population dependent on a mix of activities. Though agriculture was still important, a substantial and rapidly growing part of the work force was active in fisheries, industries and trade.<sup>4</sup> The economy was characterized by smallholding, which was another typical feature of the economy of Holland: most (rural) households owned small plots of land for herding cattle and sold their cattle and dairy products on the market.<sup>5</sup> Edam was a typical small town, although it may have been relatively wealthy, as becomes clear on the basis of a government inquiry from 1514 on the revision of tax assessments of towns and villages in the county of Holland.<sup>6</sup>

The sources we use to analyse cash holding among the households of Edam are two registers used by the government to levy taxes among the population. The *verpachtingskohieren* are estimates of household wealth, which were used to assess a distribution key for taxation that was drawn up in the *schotkohieren*. We know little about the incentives the government of Edam had to create the *verpachtingskohieren*. The source was drawn up to apportion the taxes rulers levied on the city of

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<sup>4</sup>These population figures are based on Boschma-Aarnoudse, *Tot verbeteringe*, 421-426; cf. economic development idem, p. 367-75 and *passim*.

<sup>5</sup>On the economic history of this region, see A.M. van der Woude, *Het Noorderkwartier. Een regionaal historisch onderzoek in de demografische en economische geschiedenis van westelijk Nederland van de late middeleeuwen tot het begin van de negentiende eeuw* (Wageningen 1972) 362-363, 457-458, 511-513. On the development of the economy of Holland in this period, see J.L. van Zanden, 'Taking the measure of the early modern economy: Historical national accounts for Holland in 1510-1514', *European Review of Economic History* 6 (2002) 131-163; P.C.M. Hoppenbrouwers, 'Mapping an unexplored field. The Brenner debate and the case of Holland', in: P.C.M. Hoppenbrouwers and J.L. van Zanden (eds.), *Peasants into farmers? The transformation of rural economy and society in the Low Countries (middle ages-19th century) in the light of the Brenner debate* (Turnhout 2001) 41-66, pp. 49-50; J. de Vries and A. van der Woude, *The first modern economy. Success, failure, and perseverance of the Dutch Economy, 1500-1815* (Cambridge 2000) 236-238.

<sup>6</sup>See De Moor and Zuiderduijn, 'Preferences'.

Edam and villages of De Zeevang. The local government apportioned payment for every household according to the *schot*, a division of taxes based on estimates of wealth. Usually local authorities based such assessments on landownership or rough estimates, but in 1462 the Edam government decided to take a large number of assets into consideration when it assessed the *schot*. Inhabitants were supposed to have all their assets – varying from houses, land, hereditary tenure, redeemable and life annuities, money, debts, ships, merchandise, animals, to beds – registered when the *verpachtingskohieren* were drawn up, every seven or eight years. An assessor walked through the city and villages and stopped by the houses to interrogate the inhabitants. Therefore the source provides a very detailed report for every household in Edam and the surrounding De Zeevang. The *verpachtingskohieren* provide detailed overviews of the assets and debts of the households in Edam and De Zeevang for several years, of which we have sampled three (1462, 1514, and 1563). The other sources that can be used are the *schotkohieren*, which give, for the same households in the same years, the amount of the capital tax (the *schot*), which is based on an assessment of the net value of the assets of the household, as registered in the *verpachtingskohieren*.<sup>7</sup>

There are a few problems with these sources, however: first, tax registers based on interviews are likely to yield a biased picture because the taxable community will have done everything possible to appear impoverished and escape high taxation. On the other hand, these were small communities in which everybody knew a great deal about everyone else, and citizenship was considered a virtue, which may have enhanced willingness to pay for community taxes and services.<sup>8</sup> With respect to cash holdings, coins are easy to hide – at least more easy to hide than real estate or cattle. We thus have to assume households underreported cash in our sources.

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<sup>7</sup> A detailed analysis of this source is presented in: Van Zanden, Zijlenderdijn and De Moor, 'Small is beautiful. On the efficiency of credit markets in late-medieval Holland', *European review of economic history* 16 (2012) 3-22 and Boschma-Aarnoudse, *Tot verbeteringe*, passim.

<sup>8</sup> J.L. van Zanden and M.R. Prak, 'Towards an economic interpretation of citizenship: The Dutch Republic between medieval communes and modern nation-states', *European Review of Economic History* 10 (2006) 111-145.

In the paper we try to study cash holdings per wealth group. The tax registers of Edam provide excellent possibilities to do this because they include all households, both poor and wealthy. In 1514 the government of Edam explained that:

...whoever comes to live in Edam, even if he [only] rents a bed, is taxed [0,25 lbs.], even if he goes around begging.<sup>9</sup>

Only in a few instances did the town government decide to assess householders at 0 lbs. (in 1563 this was the case for only five out of 1147 householders). Of course, getting the poor to actually pay was difficult, so the town government frequently had to remit taxes, or settle with lower payments.<sup>10</sup> Such householders struggling to meet their obligations were listed in Edam's tax ledgers though, so we are able to tackle the problem many social historians face, namely the underreporting of the poor in taxation sources.

Setting benchmarks distinguishing poor from middling groups is always a bit arbitrary. It is clear that householders set at 0 or 0,25 lbs. were poor, for their lack of assets. One of the many poor in Edam was a householder named Ariaen mit een hant (literally: Ariaen with one hand). In 1563, he owned a 'small house' – which is likely to have been little more than a shed – and three beds, and was therefore assessed at 0,25 lbs. His poverty is furthermore confirmed by the fact he was entitled to poor relief in 1581, when he received bread from the town government.<sup>11</sup> In her analysis of Edam's taxation sources, Boschma-Aarnoudse explains that a tax assessment of 0,25 lbs. generally included a house, beds, perhaps some small savings and a cow. Land, which was of course a valuable asset in a largely agrarian society, had a relatively strong impact on tax assessments; Boschma-Aarnoudse concludes that the benchmark for landownership lay at 0,25-0,375 lbs. (Boschma-Aarnoudse, 2003, 406). Many smallholders were nevertheless poor: in Edam we encounter many

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<sup>9</sup> Boschma-Aarnoudse, *Tot verbeteringe*, 405. The quote is from the *Informacie*, a tax survey of the province of Holland, taken in 1514. Tax assessments in Edam were expressed in pounds and quarters of pounds, which served as a unit of account. In this study we express tax assessments in lbs.

<sup>10</sup> Boschma-Aarnoudse, *Tot verbeteringe*, 404-405.

<sup>11</sup> Waterlands Archief Purmerend, Weeshuizen te Edam: Burgerweeshuis, Armenweeshuis en Protestants Weeshuis, 1558-1965 (1970), inv. nr. 16.

small plots of land that only sufficed to feed a cow, and even smaller plots only sufficed for keeping one calf.<sup>12</sup> Many of these plots had been divided by inheritance, and no longer sufficed to take care of a cow or calf. Such smallholders were active in small-scale livestock farming aimed at dairy production, bringing butter and cheese to the market, where they bought grain imported from abroad. Clearly, few of them would have been self-sufficient. They had to rely on additional income to make a living, and just like their landless compatriots, they were vulnerable.

### Cash holdings

Our sources do not tell us all that much about the actual coins households kept. Usually the tax assessors expressed cash reported by household in money of account. Our sources thus do not show much of the (presumably) large variety of coins in circulation in late-medieval Holland. In fact, it is almost always difficult to distinguish between coins and money of account. The only exception may be the householder Geert Cupers, who in 1514 reported a few guilders (*enckele guldenen*). The vagueness of the amount suggests Geert was talking about actual coins; it is unlikely the tax assessors would have used such a vague description after they had done the math and expressed Geert's cash holdings in money of account.<sup>13</sup>

Almost all cash holdings were expressed in Rhenish guilders (Rg): the money of account. A few exceptions are visible in 1462, when we encounter 100 *lions d'or*,<sup>14</sup> 100 *lewen*,<sup>15</sup> 100 *Philips schilt*.<sup>16</sup> In 1514 we encounter 60 *Philippus gulden*,<sup>17</sup> 215 *Carolusgulden*,<sup>18</sup> *gulden current gelt*,<sup>19</sup> *rijns*

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<sup>12</sup> In the sources these plots are called *coeven* (plot of land large enough for one cow) and *calfven* (plot of land large enough for one calf). Other plots could apparently only be used for cutting reeds (*rietlanden*).

<sup>13</sup> WA, SE inv. nr. 237 f. 243v.

<sup>14</sup> WA, SE inv. nr. 237 f. 12, 29.

<sup>15</sup> WA, SE inv. nr. 237 f. 21.

<sup>16</sup> WA, SE inv. nr. 237 f. 20v.

<sup>17</sup> WA, SE inv. nr. 237 f. 166v, 167v., 185v, 190, 192v etc.

<sup>18</sup> WA, SE inv. nr. 237 f. 167v, 168v, 170v. etc.

<sup>19</sup> WA, SE inv. nr. 237 f. 219.

*gulden current*.<sup>20</sup> The latter two may refer to coins, or to moneys of account. And in 1563 householders reported 100 *Philippus gulden*,<sup>21</sup> 200 *Carolusgulden*.<sup>22</sup> Did these sums actually consist of the coins Lions d'or, Philippus guilder, or Carolus guilder? Or were they expressed in a money of account that differed from the much more usual Rhenish guilder? If the latter were true, why would the tax assessors not stick to one money of account?

Our sources mention a variety of other currencies, particularly with respect to payments contracted a long time ago. Tithes on land, rent and annuities could be expressed in a much larger variety of coins than we encounter among cash holdings. Whereas long-running financial dues were still expressed in non-current moneys, they were probably paid in current moneys (*coopmans gelt*).<sup>23</sup>

Another problem we have to deal with is householders mentioning the combined value of cash and merchandise. In many instances a sum includes 'money and merchandise', 'money and timber', etc. In table 1 such reports have been included in the number of households reporting cash (N), but have been omitted in the average and total value. This caused a sharp decrease in average and value for 1514 and 1563, but not for 1462.<sup>24</sup> This findings suggest we have to be careful in interpreting these figures.

The average sums for Edam are in the range of less than 100 to more than 200 Rg., but the median sums are often lower, which indicates a few outliers weigh heavily on the averages. Median sums are in the range of less than 50- 120 guilders. The median for 1462 accords with c. 160 day wages of a master mason, in 1514 c. 180 day wages, and in 1563 c. 200 day wages.<sup>25</sup> We have to ask whether these are credible figures. First of all: people reporting cash had a strong incentive to underreport their savings – these would be taxed! – so there is no reason to believe the sums

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<sup>20</sup> WA, SE inv. nr. 237 f. 222v.

<sup>21</sup> WA, SE inv. nr. 238 f. 48.

<sup>22</sup> WA, SE inv. nr. 238 f. 47.

<sup>23</sup> WA, SE inv. nr. 237 f. 178 (*coopmans gelt in sijn comenschap*).

<sup>24</sup> For Edam are the differences as follows. 1462: 29625-27959=1666; 1514: 27345-13376=13969; 1563: 59682-22508=37174.

<sup>25</sup> Wages based on L. Noordegraaf, *Hollands welvaren? Levensstandaard in Holland 1450-1650* (Bergen 1985) 68 (day wages of a master mason in Haarlem).

mentioned are exaggerated. Another possibility is that not all sums mentioned in our sources refer to cash. In many cases sums expressed in currency are mentioned without further reference; considering the build-up of our source – a list of possessions – it makes sense to regard these as cash, but there might also be a possibility that the tax assessors valued something they did not describe in our source (say a horse) and merely wrote down the estimated value.

This is not very likely though. A bylaw from 1462 explains on which assets the *schot* was to be assessed: ‘goods, houses, premises, land, hereditary tenure, redeemable annuities, life annuities, money, debts, ships, merchandise, salesmanships, animals, beds, and all other goods’.<sup>26</sup> The tax collectors would explicitly ask about money (*gelt*), as well as financial instruments (*losrenten*, *lijffrenten*) and debts (*schult*). In the tax registers financial instruments and debts are clearly indicated (a certain sum in life annuities etc.); this apparently allowed the tax collectors to suffice with an amount and currency (usually a money of account, such as the Rhenish guilders of 20 *stuivers*) when recording money. To study whether this line of reasoning is indeed correct, we have singled out those reports explicitly mentioning cash sums (‘in cash’ etc.) in table 2. Very few tax assessments contain such references – as explained, usually we merely find an amount expressed in currency. In the eleven cases we can be sure the sum was reported as cash holdings, the 1514 averages are lower than expected (26,8 against 84,7 for all sums reported), whereas the 1563 averages are a good match (258,7 against 227,4 for all sums reported). Even though this is a limited number of observations, the averages do not raise much suspicion. The average savings reported in table 1, of 160-200 day wages therefore seem reliable.

In 110 cases we know something of the origins of the money reported (table 3). The vast majority was somehow linked to commerce and industry (63), Another important origin was inheritance and dowry (30). Unsurprisingly, the cash sums we can link to a commercial or industrial

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<sup>26</sup> ‘( ... ) goeden, huijsen, erven, landen, ewelicke renten, losrenten, lijffrenten, gelt, schult, schepen, waeren, comanscappen, beesten, bedden, ende alle andere goeden ( ... )’ (Boschma-Aarnoudse, *Tot Verbeteringe*, 205).

environment were relatively large, even reaching more than 1000 guilders on average in 1563 (the median was 800, which is still a very large sum). Inheritances/ dowries were also quite sizeable in 1563, but not so in 1462 and 1514, and the same goes for money coming from sales of real estate. The category 'other' contains *ommeslagen*: this term probably refers to damages received in lawsuits. Altogether four householders reported money they received this way.

Among those households both reporting cash holdings, and explaining whence their money came, we can see two main groups: people involved in commerce (textiles, rye, tar, flax, ashes are mentioned) and industry (shipbuilding is frequently mentioned). To give some examples of the former: David Wijntsz., the goldsmith, reported 400 guilders worth of silver in his cash register and in his business.<sup>27</sup> His brother (?) Jan Wijntsz., also a goldsmith, reported 700 guilders worth 'in his stall and in money'.<sup>28</sup>

In order to corroborate the likelihood of people having such sums, we look at probate inventories: official lists of property recorded after an individual had passed away – usually in the presence of a notary public.<sup>29</sup> Appendix 1 gives the value of cash found in the homes of seven residents of towns in Holland (Leiden and Amsterdam) as stated in probate inventories. Our examples date from the 1580s and 1590s, so a few decades after our final observation, 1563, but can still give us an impression of the sums people kept at home at the end of the Middle Ages. Sums range from around one hundred guilders, such as reported after the *leertouwer* (finishing of leather) Jan Dirczoen had passed away. He possessed 136 guilders (the equivalent of half a year's wages of a skilled labourer). The cash holdings of this ordinary craftsman is close to the median of 120 guilders observed in Edam in 1563. To give some other examples: the widow Catharina van Hoochstraten possessed more than 79 guilders (the equivalent of c. 90 day wages of a master. The cloth merchant (*wantsnijder*) Joost Jacobsz. possessed 1326 guilders, the equivalent of more than six year's wages of

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<sup>27</sup> The term used is *meesterije*, which probably refers to the business of a professional (cf. master in a guild system).

<sup>28</sup> The term used is *craem*, referring to a stall this goldsmith would have operated in the market place.

<sup>29</sup> Cf. the survey of this source by H. Deneweth, 'A fine balance. Household finance and the financial strategies of Antwerp households', *Tijdschrift voor sociale en economische geschiedenis* 8-4 (2011) 15-43.

a master.<sup>30</sup> And the apple saleswoman Liesbeth Arys, councillor Jan van Brouhoven and medician Marten Koster all even had much more cash. These sums are found in Leiden and Amsterdam, towns much larger than Edam. Still we may conclude that the average and median cash sums reported in Edam seem perfectly credible when compared to the cash sums reported in (almost) contemporary probate inventories. Also, considering that individuals in Leiden and Amsterdam easily held several thousands of guilders worth of cash, the total cash reported in Edam, Oorgat and the villages of de Zeevang, in 1563, which was c. 25.000 guilders (table1), does not seem excessively high either.

### **Social distribution of cash**

Who held cash in Edam? To determine social distribution we use tax assessments as an indicator of wealth – and hence social standing. In this study, we distinguish four social groups lowering (up to 0,25 lbs.) lowering middling (>0,25-1 lbs.) middling (>1-4 lbs.) and elite (>4 lbs.).<sup>31</sup> Their cash holdings are processed in table 4. The number of households for which we could link both tax records we use (*verpachtingskohieren* and *schotkohieren*) is very low for 1462: only 36 out of 1162 (3,1%). This is mainly due to the ordering of the households in the two sources not being the same,<sup>32</sup> and furthermore due to the usual problems we encounter in linking names for a time period when patronymics were still very familiar. Our sources abound with Jan Pieters, Pieter Jans etc. However, figures improve for 1514 (819 out of 1408; 58,2%) and 1563 (1559 out of 1823; 85,5%). As a result, these latter years only provide reliable data with respect to cash holdings of wealth groups. In 1514 among the two lowering categories (0,25 lbs. and >0,25-1 lbs.) resp. 4,0% and 15,6% declared cash. Average sums were resp. 47,6 guilders and 49,9 guilders. Moving up the ladder, of the middling groups (>1-4 lbs.) 30,5 reported cash – the average sum was 91,5 guilders. Of the elite (>4 lbs.) 35,7% admitted to possessing cash, on average declaring 160 guilders.

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<sup>30</sup> Jan Dirczoen's 136 guilders (1590) was worth c. 160 day wages of a master, Joost Jacobsz. 1326 guilders (1585) c. 1900 day wages of a master (J. de Vries and A. van der Woude, *The first modern economy. Success, failure, and perseverance of the Dutch economy, 1500-1815* (Cambridge 1998) 610-611.

<sup>31</sup> Cf. De Moor and Zuijderduijn, 'Preferences'.

<sup>32</sup> Boschma-Aarnoudse, *Tot verbetering*, 404.

In 1563 the percentage of cash holders had declined in all four wealth categories.<sup>33</sup> Average sums increased though: middling group and elite cash holders on average held more than 250 guilders. Inflation can only explain part of this development;<sup>34</sup> economic growth between 1514 and 1563, in Edam but also elsewhere in Holland, probably accounts for the rest of the increase in average cash holdings.<sup>35</sup> The bottom line of this exercise is that in the sixteenth century a substantial part of elites, middling, and even lower middling groups held cash savings worth around a year's wages of a master.<sup>36</sup>

These are minimum figures. We have to take into account the serious possibility of underreporting: of the assets taxed in Edam, cash holdings were probably most easy to hide from the tax collectors. Money was already stored someplace safe and out of sight, and more importantly, there was no way for the authorities to estimate a household's savings.<sup>37</sup> In fact, it is a bit remarkable to find out that so many householders declared cash holdings at all. Perhaps group solidarity and an emerging sense of citizenship brought part of the inhabitants of Edam to be so honest?<sup>38</sup> On the other hand we should not close our eyes to the possibility that the majority of households not declaring any cash holdings did *indeed* have no large sums of money around the premises. For

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<sup>33</sup> Zijderduijn and De Moor, 'Saving, spending, or investing', suggests this was due to more people investing in financial instruments.

<sup>34</sup> Average cash sums for middling and elite groups in 1514 were worth resp. 2,1 and 3,7 *last* rhye, and in 1563 resp. 4,5 and 4,7 *last* rhye (one *last* = c. 2160 kg). Increases in average cash holdings expressed in rhye were resp. 114% and 27%, whereas increases in cash holdings expressed in guilders were resp. 187% and 72%.

<sup>35</sup> Cf. Van Zanden and van Leeuwen's estimates of growth of Holland's GDP in this period: J.L. van Zanden and B. van Leeuwen, 'Persistent but not consistent: the growth of national income in Holland, 1347-1807', *Explorations in economic history* 49 (2012) 119-131.

<sup>36</sup> The average cash holdings reported by the >0,25-1 lbs. wealth group, 49,9 guilders in 1514 and 130 guilders in 1563, were worth resp. c. 250 and c. 300 day wages of a master.

<sup>37</sup> Authorities had ample ways to keep track of households' real estate and capital market investments though. Other assets that were taxed, such as cattle and beds, were less easy to hide as money. See: J.L. van Zanden, J. Zijderduijn and T. de Moor, 'Small is beautiful. On the efficiency of credit markets in late-medieval Holland', *European review of economic history* 16 (2012) 3-23.

<sup>38</sup> Cf. the emergence of a sense of citizenship J.L. van Zanden and M. Prak, 'Towards an economic interpretation of citizenship: the Dutch republic between medieval communes and modern nation-states', *European review of economic history* 10 (2006) 111-147.

lowering groups struggling to make ends meet, saving must have been very difficult – the fact that we encounter people with cash in these groups is already quite surprising.<sup>39</sup>

## Discussion

We may summarize the results of our study as follows: between 1462 and 1563 the number of households reporting cash holdings decreased. Over the same period of time the average sums increased: in 1563 those people that held cash around the house had much more than their counterparts in 1462. In the sixteenth century middling groups and elites were most prominent in cash holdings, although lowering groups were not completely absent. When we look at the total quantity of coins reported, the year 1514 was clearly a slump: that year the inhabitants of Edam and De Zeevang reported 16.647 guilders. In 1462 this had been 33.190 guilders, in 1563 it was 24.851 guilders. Interestingly, this development does not sit well with claims of a bullion famine during c. 1440-1470.<sup>40</sup> In 1462 the population of Edam held more cash than in our two other sample years – including 1563, when silver from the America's had caused a 'price revolution' in Europe, and the quantity of coins in circulation should have been relatively large. Also, by that time the economy of Edam flourished as never before.

### *Money and economy*

How are we to understand all of this? Assuming our figures are correct, is it possible that Edam did not experience bullion famine when most other parts of northwest Europe did? If we follow the Cambridge cash balance formula ( $M.V=P.y$ ), supply of money (M) multiplied by velocity (V) should

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<sup>39</sup> Today, c. 93% of the households in the Netherlands has savings in the bank ([www.statline.cbs.nl](http://www.statline.cbs.nl)).

<sup>40</sup> J.H. Munro, 'Coinage and monetary policies in Burgundian Flanders during the late-medieval 'bullion famines', 1384-1482' University of Toronto Department of Economics working paper 361 (2009). Accessible at: <http://repec.economics.utoronto.ca/files/tecipa-361.pdf>

equal price level (consumer price index) multiplied by real net national income (y).<sup>41</sup> Assuming that velocity was constant, the relatively high supply of money in 1462 means that either the price level, or real net national income must have been relatively high compared to 1514 and to a lesser extent also 1563. In the fifteenth century the price level, expressed in the consumer price index, was low (figure 1). It starts off at c. 100 in 1462 and rose to c. 300 in 1563, which would mean that the large quantity of coins reported in 1462 cannot be explained by a high price level.

This leaves us with real net national income. Historians often refer to the period c. 1440-1470 as a 'golden age of Burgundy', and contemporary sources also indicate this was a time of prosperity. The magistrates from towns and villages that were interviewed in 1494 and 1514, during a large-scale operation to make new tax assessments, are all very positive of the reign of Charles the Bold (r. 1467-1477) and negative of the following period. As many historians have already pointed out, we should be cautious in using these interviews: magistrates may have tried to make it seem that their towns and villages had impoverished, and thus escape high taxation.<sup>42</sup> Already in 1964 T.S. Jansma criticized this view of a 'golden age of Burgundy', pointing to unreliable contemporary sources, and revolts and trade conflicts that should have harmed the economy.<sup>43</sup> Yet, many prominent historians seem to agree to a 'golden age of Burgundy' from c. 1440-1470. Henri Pirenne writes of a peaceful era since the ascent of Philip the Good in Holland (r. 1433-1467) in his *Histoire de Belgique*. Wim Blockmans and Walter Prevenier speak of the Burgundian territories as *The promised lands*, enjoying good government and great prosperity.<sup>44</sup> This 'good government' was for instance visible in Philip's monetary policy: the duke refrained from the usual debasement policies, and rather strove to create a stable coin.<sup>45</sup> Bas van Bavel and Jan Luiten van Zanden spoke of a late-medieval 'jump-start' of

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<sup>41</sup> See John Munro's review of J. Bolton, *Money in the medieval English economy* [http://eh.net/book\\_reviews/money-medieval-english-economy-973-1489](http://eh.net/book_reviews/money-medieval-english-economy-973-1489).

<sup>42</sup> Boschma-Aarnoudse, *Tot verbeteringe*.

<sup>43</sup> T.S. Jansma, 'Het vraagstuk van Hollands welvaren tijdens hertog Philips van Bourgondië' in idem, *Economisch-historische herdrukken* (1964) 55-73, aldaar 55-57.

<sup>44</sup> W. Blockmans & W. Prevenier, *De Bourgondiërs. De Nederlanden op weg naar eenheid 1384-1530* (Amsterdam/Leuven 1997) 193.

<sup>45</sup> Spufford; Zijderdijn, 'De schuldvraag'.

Holland's economy, in the late fourteenth and fifteenth centuries – largely coinciding with the reign of Philip the Good.<sup>46</sup>

Only few quantitative sources are available to test whether this was indeed a prosperous era. Jan Luiten van Zanden and Bas van Leeuwen have recently suggested that Holland experienced a slow but steady growth between 1347 and 1810. However, for the late Middle Ages they cannot do more than present an educated guess with respect to economic development.<sup>47</sup> A study into the volume of the markets for land and capital in Haarlem, 1471-1605, suggests that there is evidence for prosperity in the mid-fifteenth century: in 1471, and also in 1485, the number of transactions was higher than in twelve later sample years.<sup>48</sup> With respect to Edam, Boschma-Aarnoudse, in her study of the Edam economy, sees economic growth until c. 1480, when an economic crisis set in.<sup>49</sup>

If we accept that Edam experienced a *hausse* between c. 1440-1470, including relatively large market activity, this may explain the relatively large quantity of coins reported in Edam in 1462. *Real* net income (*y*) was surely high during this *hausse*, which is why supply of money (*M*) was high. The supply of money in 1514 was low because Holland at that time was recovering from a severe economic crisis. It was almost at the 1462 level again in 1563, although it should also be noted that by then fewer householders reported cash holdings. In 1462 this had been much more egalitarian, which is in line with literature on the increase of inequality in the course of the sixteenth century. To conclude: the quantity and distribution of cash in 1462 can best be comprehended in the context of a 'golden age of Burgundy', of which a relatively large part of the population was able to profit.

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<sup>46</sup> Bavel, B. van and Zanden, J.L. van (2004) 'The Jump Start of the Holland economy during the late Medieval Crisis, c 1350-1500'. *Economic History Review* 57, 2004, pp. 503-532.; B. van Bavel, J. Dijkman, E. Kuipers and J. Zuijderduijn, 'The organization of markets as a key factor in the rise of Holland, fourteenth-sixteenth centuries. A test case for an institutional approach, *Continuity & change* 27 (2013) 347-378. Van Zanden and Van Leeuwen suggest a steady economic growth for Holland between 1347 and 1810 (J.L. van Zanden and B. van Leeuwen, 'Persistent but not consistent. The growth of national income in Holland 1347-1807, *Explorations in economic history* 49 (2012) 119-130).

<sup>47</sup> Van Zanden and Van Leeuwen, 'Persistent'.

<sup>48</sup> Zuijderduijn, 'Conjunctuur'.

<sup>49</sup> Boschma-Aarnoudse, *Tot verbeteringe*, 166-167.

### *Hoarding*

A considerable proportion of the population reported cash to tax assessors. Their number was largest in 1462, when 350 out of 1162 households in Edam had money around the house, a remarkable 30,1%. This proportion declined over time: in Edam hoarding was much more common in the fifteenth century than in the sixteenth. As said, this may be due to increased participation in financial markets.<sup>50</sup> The question is to what degree this difference is also reflected in archeological findings of coin hoards.

We are unaware of the social distribution of the cash holdings in 1462 (due to problems linking our two main sources) but it is likely the pattern was about the same as in 1514 and 1563: c. 5-10% of the households from lowering groups possessing cash, and c. 20-30% from middling groups and the elite. This is in itself not very surprising, but again, it begs the question whether archeological findings can confirm this pattern.

Average sums were considerable, so it may be assumed that many of the cash-holding households required a safe place for their coins. Burying them in the ground was one way to prevent theft, but keeping coins in a strongbox was another. We do not know a great deal about this – the goldsmith David Wijntsz., who kept his money in his cash register, is the only one explaining where and how he kept his cash – but here again archaeologists and art historians may help us out with data on findings of strongboxes as well as their value and perhaps cultural expressions on these objects.

Finally, we must address the question of saving behaviour. As explained, the cash savings reported in Edam may either have been *accidental* or *intentional*. The latter would have been an

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<sup>50</sup> Zijderduijn and De Moor, 'Spending, saving or investing?'. It should be noted that possibilities for deposit banking did not emerge in Holland until the seventeenth century. Investing in financial instruments may thus have caused problems with respect to liquidity – although these could be circumvented by means of a secondary market where financial instruments could be resold to third parties.

expression of saving behaviour: a strategy aimed at dealing with future expenses. Our sources cannot tell us much about whether people had such intentions. Again, here archaeologists and art historians may be able to help out, particularly with respect to the history of piggy banks.<sup>51</sup> These served only one purpose, namely to store coins. What is more important, they put a premium on tapping into stored coins: this meant breaking the piggy bank, and thus incurring expenses. The piggy bank must thus be regarded as a helpful tool for people struggling to find the self-discipline to save: their existence and social distribution is a sign of *intended* saving behaviour, of a strategy. It is difficult given the state of research to quantify the use of money boxes in the late Middle Ages, but the availability of several types in museums in the Netherlands indicates that saving may well have been common (see image 1). Ceramics may thus provide unexpected, but important clues to financial and economic historians.

## **Conclusion**

Our study of cash holding in Edam suggests a considerable proportion of households in the fifteenth and sixteenth centuries possessed savings. Judging on our taxation sources, cash savings were widespread in the fifteenth century, and then slowly gave way to investments in financial markets. Both types of savings were predominantly found among the elite and middling groups, although households from lowering groups also held cash. Finally, reported savings were considerable, at 160-200 day wages of a skilled worker. Future research should indicate whether these findings should be interpreted as the exponent of saving behaviour, or not.

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<sup>51</sup> In the Netherlands, piggy banks are found since the sixteenth century; other money banks existed earlier as well (A. Ufkes, 'Een middeleeuws leerbewerkerkwartier in Sneek. Een archeologische opgraving aan het Martiniplein te Sneek, gemeente Sneek' ARC publicaties 17 (Groningen 2008) 49-50).

**Table 1. Cash reported in Edam 1462, 1514, 1563**

	<b>N</b>	<b>Average/ median</b>	<b>Value</b>
<b>1462</b>			
Edam	350	82,7/ 45	27959
Oorgat	31	59,6/ 30	1849
Villages	76	45,1/ 23	3382
<b>1514</b>			
Edam	201	84,7/ 49	13376
Oorgat	2	28,5/ 28,5	57
Villages	58	55,4/ 35,5	3214
<b>1563</b>			
Edam	143	227,4/ 120	22508
Oorgat	1	120/ 120	120
Villages	31	71,7/ 70	2223

1462: in 'average' and 'value' categories excluded are 13 combinations of money and other assets

(such as 'money and merchandise'); 1514: excluded are 48 combinations of money and other assets;

1563: excluded are 46 combinations of money and other assets.

**Table 2. Explicitly money**

	<b>N</b>	<b>Average/ median</b>	<b>Value</b>
<b>1462</b>	-	-	-
<b>1514</b>	6	26,8/ 27,5	161
<b>1563</b>	5	258,7/ 250	1293,5

**Table 3. Origins money**

	<b>1462</b>		<b>1514</b>		<b>1563</b>	
	<b>N</b>	<b>Av.</b>	<b>N</b>	<b>Av.</b>	<b>N</b>	<b>Av.</b>
Commerce	7	124,1	35	345,5	21	1079
Sale real estate	2	22	9	45,2	2	330
Inheritance/dowry	6	63,7	7	44,4	17	254,6
Other	-	-	3	511,3	1	800
Unknown	442	76,2	155	85,6	135	250,8

Commerce: also included mentioning of cash in combination with merchandise

Inheritance: also included 'coming from NN goods'

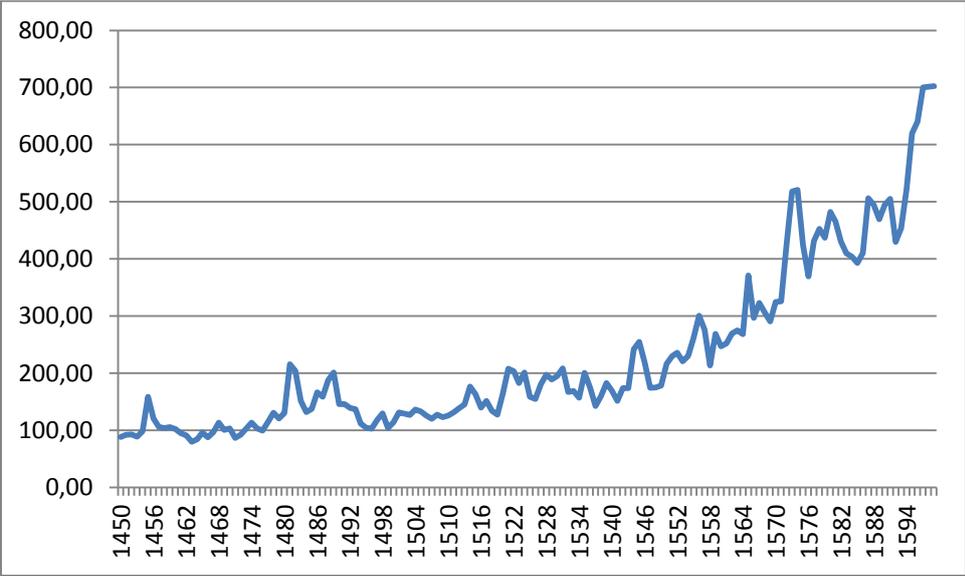
Other: also included 'ommeslach' (damages received after civil procedure)

**Table 4. Cash holdings per wealth group**

	<b>N (cash and merchandise)</b>	<b>% all</b>	<b>Av. sum</b>	<b>Total sum</b>
<b>1462</b>				
0,25	3 (0)	1,4	36,7	110
>0,25-1	3 (0)	0,8	19,3	58
>1-4	9 (1)	2,7	98,9	791
>4	3 (0)	8,3	220,0	660
<b>1514</b>				
0,25	25 (1)	4,0	47,6	1143
>0,25-1	79 (7)	15,6	49,9	3593
>1-4	75 (22)	30,5	91,5	4847
>4	10 (5)	35,7	160	800
<b>1563</b>				
0,25	33 (2)	3,9	101,6	3150
>0,25-1	52 (9)	9,3	130,0	5589,5
>1-4	56 (18)	15,6	262,6	9977
>4	17 (7)	28,8	274,5	2745

Average sum and total sum: excluded are combinations of cash and merchandise

Figure 1. Consumer price index Netherlands 1450-1599



Source: dataset wages and prices, [www.iisg.hpw.nl](http://www.iisg.hpw.nl)

**Image 1.**



Money box in the shape of an onion or breast, found in Dordrecht and dated c. 1450-1500 (Dordts Archeologisch Centrum ; <http://cms.dordrecht.nl/dordt?waxtrapp=qjsboDsHaKIPzBaBHPwB>).

### Appendix 1. Value of cash reported in probate inventories

Year	Name	Profession	Residence	Value
1591	Catharina van Hoochstraten		Leiden	>79 guilders
1583	Pouwels Adriaensz.	Merchant/ shopkeeper	Leiden	670 guilders
1586	Liesbeth Arys	Apple saleswoman	Amsterdam	2088 guilders
1585	Joost Jacobsz.	<i>Wantsnijder</i>	Leiden	1326 guilders
1590	Jan Dircoen	<i>Leertouwer</i>	Leiden	136 guilders
1588	Jan van Brouhoven	Councillor <i>Hof</i> <i>van Holland</i>	Leiden	4728 guilders
1594	Marten Koster	Medician	Amsterdam	3747 guilders

Source: H.E. van Gelder, *Gegevens betreffende roerend en onroerend bezit in de Nederlanden in de 16<sup>e</sup> eeuw. Deel 1. Adel, boeren, handel en verkeer* (The Hague 1972), 238, 436, 529, 592; H.E. van Gelder, *Gegevens betreffende roerend en onroerend bezit in de Nederlanden in de 16<sup>e</sup> eeuw. Deel 2. Industrie* (The Hague 1973) 83, 218, 256.

