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CGEH Working Paper Series

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March 2014

Working paper no. 53

www.cgeh.nl/working-paper-series/

What did retirement cost back then?

The evolution of corrody prices in Holland, c. 1500-1800

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Abstract: The cost of retirement has a strong impact on social processes. We study the prices individuals in Holland paid for corrodies: contracts providing elderly lifelong accommodation and care in hospitals. Around 1500 corrodies were relatively inexpensive, and within reach of those people able to raise the equivalent of c. 250 day wages of a skilled labourer if they wished to stay in a nursing hall and c. 500 day wages if they preferred an apartment of their own. In later centuries the real costs of retiring at least doubled. We argue that in the late Middle Ages spending old age in a retirement home was open to a relatively large part of the population, and that access to this type of care declined in the centuries that followed. We claim the later Middle Ages were a ‘golden age for the pensioner’ and discuss this finding in terms of the development of family ties.

Keywords: corrodies; Holland; pre-industrial period.

JEL Codes: D91; N23; N34.

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Acknowledgements: the author thanks colleagues from the financial history group at Utrecht University, the economic and social history group at Nijmegen University, and Maarten Prak for comments on earlier drafts, and René van Weeren and Bart Holterman for their research assistance.

¹ The research for this paper was made possible by funding from the European Research Council under the European Community’s Seventh Framework Programme (FP7/2007-2013/ERC Grant Agreement n. 240928) as part of the project “United We Stand. The dynamics and consequences of institutions for collective action in pre-industrial Europe.” See also www.collective-action.info.

In 1541, Cornelis Meynertsz., a shipbuilder living just outside the town of Leiden, went on record saying: ‘if he would be able to do so, he would buy boarding for the remainder of their lives [i.e. for himself and his wife]’. Cornelis, aged c. 52 at the time, was thinking of retiring together with his wife. The reason to do so may be found in him explaining ‘that he has no children’ who could take care of Cornelis and his wife during old age.² Perhaps Cornelis’ ambition stemmed from public announcements such as that from 1526, in which the town crier of Leiden advertised a new retirement community. St. Hiëronymusdal, located right outside of Leiden, would provide commercial care for the elderly, as well as good fresh air and expert medical service.³ St. Hiëronymusdal (or Lopsen as it was also called) was a former monastery, which had been abandoned in 1526 due to financial problems.⁴ The town government apparently decided to use the monastery buildings to create a retirement community for people willing to pay for lifelong care – the directors of St. Catherine’s would run affairs. There is no evidence indicating the aforementioned shipbuilder Cornelis Meynertsz. was among the customers of St. Hiëronymusdal, and we are unaware of any other arrangements he might have made. However, our analysis of the evolution of corrody prices does answer the question whether Cornelis could realistically hope to retire, and how likely a member of social middling groups would have been to realize a carefree old age.⁵

² ...indien hijs vermochte, soude gaern mit sijn huysvrouwe haer leven lanck coopen haeren cost... ... ende seyt, dat hy geen kinderen en heeft... (N.W. Posthumus (ed.) ‘Een zestiende-eeuwsche enquête naar de buitenneringen rondom de stad Leiden’, *Bijdragen en mededeelingen van het historisch genootschap* 33 (1912) 1-95, there nr. 30).

³ Resp. *goede open lucht and goet bescheyt* (C. Ligtenberg, *De armezorg te Leiden tot de 16^e eeuw* (the Hague 1908) 78).

⁴ J. Smithuis, ‘Lopsen en de Moderne Devotie. Een Leids klooster nader bekeken’, *Jaarboek Dirck van Eck* (1996) 13-34, pp. 30-31. In 1531 St. Hiëronymusdal came to resort *de facto* under Leiden’s St. Catherine’s hospital, a poor relief institution, although it took until 1540 until the town government officially granted the buildings to St. Catherine’s (Ligtenberg, *De armezorg*, 78-79).

⁵ In Leiden, in 1543 ten shipbuilders were on average taxed 8,4 guilders for real property, which was slightly below the average of the town as a whole, at 9,3 guilders (calculations based on A. van der Tuijn (ed.), ‘Tiende penningkohieren van Leiden 1543’). Other research indicates that the socioeconomic position of shipbuilders ranged from modest to quite good: according to the historian Niemeijer, shipbuilders in Haarlem, a center of shipbuilding, were not necessarily wealthy (A.F.J. Niemeijer, ‘Op de helling aan de dijk. Ruimtelijke en andere aspecten van de scheepsbouw en de sloopshandel te Haarlem in de jaren 1274-1572’ *Nederlandse historiën* 22 (1988) 3-12, 43-49, pp. 46-47). However, this author also indicates expansion and scale enlargement in the shipbuilding industry after c. 1530, which must have contributed to the shipbuilders’ wealth (A.F.J. Niemeijer, *Van accijnsbrief tot Zuidam. Scheepsbouw in Haarlem van 1274 tot heden* (Haarlem 1990) 20). In Edam, another center of shipbuilding, they ranked among the wealthiest citizens (C. Boschma-Aarnoudse, *Tot verbeteringe van de neringe deser stede. Edam en De Zeevang in de late Middeleeuwen en de 16de eeuw* (Hilversum 2003) 159, 175).

Retirement practices have a great impact on social relations. In the event the state or employers help individuals to prepare for old age by means of pension schemes, and large pension funds help to reduce the cost of retirement, individuals can emancipate themselves from the family. However, where pension schemes are unavailable and costs of retirement are high, individuals continue to depend on the family during old age. Under such circumstances the question arises how to make sure family members will provide ample support. The answer depends heavily on family structures: who are supposed to cohabit, who are the decision makers, and who own the assets? Historians have observed some general developments with respect to historical family structures. Since the late Middle Ages ties between family members in the Northwest of Europe were relatively weak. This area was characterized by a family structure called ‘European marriage pattern’: households usually only consisted of a couple and their children, and the latter left the parental home when they married. The latter characteristic, neolocality, was especially crucial with respect to old age provisions. In Northwest Europe, aged couples, widows and widowers did not have in-living children to take care of them. If they were lucky they had children or other relatives that had not strayed too far, and were capable of helping out; if not, they had to find an alternative.⁶ English evidence suggests that the latter prospect was far from imaginary: in the seventeenth century 35% of the elderly did not have kin living nearby.⁷ Peter Laslett has rightly pointed out that this family system made households vulnerable: individuals may have had trouble dealing with the death of a spouse, unemployment, sickness or senility – problems that are likely to have occurred during old age.⁸ In this respect Laslett spoke of ‘nuclear hardship’: ‘difficulties imposed upon individuals when social rules require them to live in nuclear families’. These difficulties could be sorted out in different ways: remarriage, appealing to the extended family, and relying on the ‘collectivity’ for support: friends and neighbours, the

⁶ This was not straightforward because of the composure of the households of the various generations under the European marriage pattern. This family system was also characterized by late age at first marriage, which meant that children had to combine care for their own children and their ageing parents (R.M. Smith, ‘Ageing and well-being in early-modern England: pension trends and gender preferences under the English Old Poor Law c. 1650-1800, in: P. Johnson and P. Thane (eds.) *Old age from antiquity to post-modernity* (London/ New York 1998) 64-95, pp. 67-68).

⁷ Smith, ‘Ageing’, 70.

⁸ P. Laslett, ‘Family, kinship and collectivity as systems of support in preindustrial Europe: a consideration of the “nuclear hardship” hypothesis’, *Continuity and Change* 3 (1988) 153-175, pp. 153.

church, charitable institutions, authorities.⁹ ‘Nuclear hardship’ was therefore certainly not the inevitable result of living in nuclear families.

In contrast, in areas where family ties remained stronger, the elderly could be surer to be taken care of by family members. Such assistance could be a matter of coercion: in this respect Hans Medick, in his classic study of the household economy, spoke of ‘the iron chain of reproduction and inheritance’. To make sure they would be looked after during old age, peasants used real property as a ‘bargaining chip’, making inheritance conditional on support during old age, and thus tied their children to the parental household.¹⁰ In fact, several medieval authors suggested their readers do exactly this, and warned them not to transfer property to their children *inter vivos* ‘thereby becoming dependent upon them, and their kindness’.¹¹ Apart from coercion, there were other ways to tie children to the parental household: parents could also teach them to become care takers, and formulate what they expected in terms of care during old age.¹²

As an alternative to the aforementioned strategies individuals could also turn to the market to prepare for old age. According to Tine de Moor and Jan Luiten van Zanden the European marriage pattern was only viable where individuals had sufficient access to labour and capital markets, the latter among others because of possibilities to make preparations for old age.¹³ This was not unheard of:

⁹ Laslett, ‘Family’, 154; A. Blaikie, ‘Nuclear hardship or variant dependency? Households and the Scottish Poor law’, *Continuity and Change* 17 (2002) 253-280. In Southern Europe provisions for the elderly were often implicitly made in marriage contracts, and in Central and Northern Europe more formally in retirement contracts (D.S. Reher, ‘Family ties in Western Europe: persistent contrasts’, *Population and development review* 24 (1998) 203-235, pp. 211).

¹⁰ H. Medick, ‘The proto-industrial family economy. The structural function of household and family during the transition from peasant society to industrial capitalism’, *Social history* 1 (1976) 291-315, pp. 303; T. Lambrecht, ‘English individualism and continental altruism? Servants, remittances, and family welfare in eighteenth-century rural Europe’ *European Review of Economic History* 17 (2013) 190-207, pp. 202.

¹¹ S. Shahar, *Growing old in the middle ages. ‘Winter clothes us in shadow and pain’* (London 1997) 93. Shahar in this respect mentions authors such as Paolo da Certaldo (c. 1320-1370) and Petrarch (1304-1374) and also suggests that ‘warnings and tales’ not to become dependent on children abounded across medieval Europe (ibidem, 95-96).

¹² Reher, ‘Family ties’, 215.

¹³ T. de Moor and J.L. van Zanden, ‘Girl power: the European marriage pattern and labour markets in the North Sea region in the late medieval and early modern period’, *The economic history review* 63 (2010) 1-33, pp. 23-24. The objective, to save in order to ensure quality of life, is perhaps best captured in Franco Modigliani’s permanent income hypothesis, which predicts that households try to stabilize consumption, by saving when they could, and using savings when they had to (F. Modigliani, ‘The life cycle hypothesis of saving, the demand for wealth and the supply of capital’, *Social research* 31 (1966) 160-217). Cf. applications in historical research: T. de Moor and J. Zuijderduijn, ‘Preferences of the poor: market participation and asset management of poor households in sixteenth-century Holland’, *European review of economic history* 17 (2013) 233-249 ; U. Pfister,

according to Shulamit Shahar, already in the middle ages ‘didactic literature encouraged people to save for their old age’.¹⁴ This could be done not only by hoarding coins, but also by investing in financial markets. Although our knowledge of the investment behaviour of various social groups has improved the past decade,¹⁵ we still know little of saving for old age. We are particularly ignorant about how people used savings or financial instruments to acquire necessities of life and care during old age. Savings and financial instruments provided the elderly with money, but this still meant they had to buy food, drinks, fuel, perhaps rent a place to live and to hire help in case of sickness or disability. Apart from the practical problems this involved, elderly relying on a monetary income were exposed to ‘market risk’: a decline in the real value of money due to inflation or fluctuations in the exchange rate.¹⁶ One solution was to invest in an income in kind, such as the corrody. In the words of Adrian Bell and Charles Sutcliffe:

under a corrody, an individual or couple was provided by a religious institution such as a monastery, priory, abbey or hospital with some agreed mixture of food, drink, heat, light, accommodation, clothing, laundry, health care, maybe a small monetary allowance and even stabling and grazing for their livestock.¹⁷

A corrody guaranteed the recipient of a carefree old age and guarded him against market risk. An additional advantage was the relatively low price: the corrody provided care for as long the recipient lived (in the event the corrody was purchased by a couple it provided care until the surviving spouse

‘Rural land and credit markets, the permanent income hypothesis and proto-industry: evidence from early-modern Zurich’, *Continuity & change* 22 (2007) 489-518; L. Di Matteo, ‘Wealth accumulation and the life-cycle in economic history: implications of alternative approaches to data’, *Explorations in economic history* 35 (1997) 296-324.

¹⁴ Shahar, *Growing old in the middle ages*, 9, 93.

¹⁵ Cf. participation of lowering and middling groups in financial markets, in the late middle ages and early modern period: De Moor and Zuijderduijn, ‘Preferences of the poor’; S. Ogilvie, M. K pker and J. Maegraith, ‘Household debt in seventeenth-century W rttemberg: evidence from personal inventories’, *The journal of economic history* 72 (2012) 134-168; J.L. van Zanden, J. Zuijderduijn 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; Pfister, ‘Rural land and credit markets’.

¹⁶ R.C. Coppes, *Credit and market risk: an analysis of capital requirements for banking institutions* (Capelle aan den IJssel 1997) 22-35.

¹⁷ A. Bell and C. Sutcliffe, ‘Valuing medieval annuities: were corrodies underpriced?’, *Explorations in economic history* 47 (2010) 142-157, pp. 142-143. Annuities in kind, usually wheat or rye, are also known to have been sold in the late middle ages. Such annuities may also have served to protect the beneficiary against market risk. Cf. C.J. Zuijderduijn, *Medieval capital markets. Markets for ‘renten’, state formation and private investments in Holland (1300-1550)* (Leiden/Boston 2009) 64-65.

passed away). When he passed away, the corrody ceased to exist. This construction resembles the medieval life annuity: an individual purchased a lifelong annual monetary return, which ceased to exist when he passed away. The life annuity's principal was not repaid to his heirs. The life annuity is known to have yielded a relatively high return: in Holland, in the sixteenth century, returns to life annuities were c. 10% per annum, whereas those to heritable redeemable annuities were c. 5-6%.¹⁸ Of course this difference was due to life annuities being terminated when the (final) beneficiary had passed away: the seller could thus be sure that his financial obligations would disappear over time, and that this did not require repayment of the principal. As a result, individuals looking for an investment that allowed them a sufficient monetary income during old-age paid the least when they invested in a life annuity: c. 40-50% less than when they invested in a redeemable annuity. The same applies to corrodies: the life-long, non-hereditary character of these financial instruments reduced the cost of retirement.

Corrodies thus offered a twofold advantage: they protected the beneficiary against market risk, and did this at a relatively low price. The main drawback was the inability to pass the investment on to next-of-kin: individuals choosing this type of old-age provision spent their savings on a commercial care package that was only of use to them. In this paper we study the costs of corrodies in Amsterdam and Leiden from c. 1500 to 1800. We begin with corrody prices in two late-medieval hospitals: St. Pieters in Amsterdam and St. Hiëronymusdal in Leiden. Here we encounter two types of corrodies: relatively inexpensive *commensalen* contracts aimed at lowering middling groups of society, and more expensive *proveniers* contracts aimed at middling groups (II). We then go on to calculate corrody prices. We demonstrate that individuals could purchase basic corrodies for the equivalent of 250 day wages of a skilled labourer, and more luxurious corrodies for c. 500 day wages. We then move on to the early modern period, discussing our data from the not-so-luxurious hospitals of St. Catherine and St. Cecilia in Leiden, and the rather classy 'corrodians home' St. Jorishof in Amsterdam. Based on a dataset of almost 1400 corrody contracts we argue that real prices of corrodies at least doubled between 1500 and 1800, in the end amounting to c. 500 day wages for a *commensalen* contract and c.

¹⁸ J. Zuijderduijn and T. de Moor, 'Spending, saving or investing? Risk management in sixteenth-century Dutch household', *The economic history review* 66 (2013) 38-56, pp. 43-46.

2000 day wages for a *proveniers* contract (III). We discuss reasons for the doubling of the real cost of retirement, demonstrating that the rising cost of living, combined with declining interest rates, are most likely to have forced directors of institutions to adjust entry sums. Since wages did not increase at the same rate, in the eighteenth century retirement had probably become something for people from higher social strata (IV). Next we discuss the social implications of the late-medieval ‘golden age of the pensioner’, as well as the early-modern rise in the cost of retirement (V).

II

Our analysis of corrody prices is based on 1383 observations from Amsterdam and Leiden between 1476 and 1799. We have used registers of corrody contracts from two institutions in Amsterdam and three in Leiden:

Period	Institution	N
1476-1538	St. Pieter hospital Amsterdam	36
1538-1558	St. Hiëronymusdal and St. Catherina hospitals Leiden	39
1600-1799	St. Jorishof Amsterdam	388
1665-1799	St. Catherina and St. Cecilia hospitals Leiden	920

To study late-medieval prices, we first of all use data from the hospital of St. Pieter in Amsterdam. It was founded by a religious confraternity called St. Pietersgilde¹⁹ and is first mentioned in a document from 1395; the next year the hospital issued a letter promising pilgrims an indulgence of 40 days if they visited the hospital to take care of the sick, or donated money for the building of the hospital.²⁰ This was a sizeable hospital: in 1486 it could accommodate 200 individuals.²¹ In 1492 it was united with another hospital, St. Elisabeth,²² in spite of this, in the mid-sixteenth century the

¹⁹ J. Vis, *Onder uw bescherming. De katholieken en hun ziekenzorg in Amsterdam* (Amsterdam 1998) 22.

²⁰ Vis, *Onder uw bescherming*, 28-29.

²¹ Vis, *Onder uw bescherming*, 29.

²² J. Vis, *De poort. De Oudemanhuispoort en haar gebruikers 1602-2002* (Amsterdam 2002) 15.

enlarged St. Pieters hospital held only c. 90 individuals.²³ According to a contemporary observer this was ‘a magnificent building, the most famous hospital in all of Holland’.²⁴ Whether this was entirely true is doubtful because there are also indications St. Pieter did not do very well. In 1486 its directors complained it ‘was very poor and had little revenues’. To resolve their financial problems, they asked the pope for permission to sell indulgences.²⁵ Arguably, selling corrodies to the elderly also allowed the directors a way out of their financial problems. In our analysis we use a register that contains, among other contracts, 36 corrodies St. Pieter hospital sold between 1476 and 1538.

A second late-medieval register we use comes from St. Hiëronymus hospital in Leiden which we already mentioned at the beginning of this paper. This used to be a convent and is first mentioned in a document from 1404.²⁶ It was located outside the town walls to the southwest of Leiden. The monks specialized in book production, and it has been suggested that the introduction of the printing press contributed to the convent’s demise in the sixteenth century.²⁷ However, it seems that the convent experienced problems before: for instance, the town government took custody over St. Hiëronymusdal’s troubled finances, in 1471.²⁸ On one hand this was a relatively poor convent with structural financial problems; on the other, according to the historian P.J. Blok it was also ‘well-known’ and ‘quite sizeable’.²⁹ As explained before, the convent was dissolved and turned into a retirement home. In our analysis we use the oldest register of corrodies St. Hiëronymusdal issued that is available, covering 1538-1558 and containing 28 contracts. Additionally, we have collected eleven corrody contracts issued by St. Catherina hospital – this institution governed St. Hiëronymusdal – in the first half of the sixteenth century; combined this yielded 39 corrody prices.

²³ I.H. Van Eeghen, ‘Van gasthuis tot academisch ziekenhuis’, in: D. de Moulin, I.H. van Eeghen and R. Meischke (eds.) *Vier eeuwen Amsterdams Binnengasthuis* (Amsterdam 1981) 54.

²⁴ J.I. Pontanus, *Rerum et urbis Amstelodamensium historia* (Amsterdam 1611) 114-115. Cf. J. ter Gouw, *Geschiedenis van Amsterdam. Derde deel. Vervolg van het tweede tijdperk. De ontwikkeling van Amsterdam* (Amsterdam 1881) 230.

²⁵ Vis, *Onder uw bescherming*, 29.

²⁶ Smithuis, ‘Lopsen’, 18-19.

²⁷ Smithuis, ‘Lopsen’, 30-31.

²⁸ Smithuis, ‘Lopsen’, 20-21.

²⁹ P.J. Blok, *Geschiedenis eener Hollandsche stad. II. Eene Hollandsche stad onder Bourgondisch-Oostenrijksche heerschappij* (The Hague 1912) 159, 161. Cf. similar observations: Ligtenberg, *De armenzorg*, 78.

To study price developments in the early-modern period we use data from a late-eighteenth-century register of St. Jorishof Amsterdam. Initially a leprosarium, this probably became a ‘corrodians house’ (*proveniershuis*) in the late fifteenth century. It was moved to its present location in 1579.³⁰ St. Jorishof had 56 small houses for *proveniers* (the institution did not admit *commensalen*).³¹ Prices are known for contracts of 197 males and 291 females; the register gives 388 corrody prices.

For early-modern Leiden we cannot use data from St. Hiëronymusdal because this institution did not survive the Dutch Revolt: it burnt down in 1572. To trace corrody prices beyond this point, we use data from the closely affiliated hospitals of St. Catherina and St. Cecilia. As we have already seen, St. Catherina was the main hospital that exploited St. Hiëronymusdal before the Dutch Revolt, and it did the same with St. Cecilia, an institution located *intra muros*, after. These institutions sold *proveniers* and *commensalen* contracts: the former were not very often agreed (53 in St. Catherina and 38 in St. Cecilia), presumably because both hospitals only had a limited number of small houses and apartments on their premises.³² Their core business clearly was to be found in large nursing halls where customers of *commensalen* contracts were to be found: 648 in St. Catherina, and 295 in St. Cecilia. Altogether the registers contain prices of 1034 corrody contracts.

In our analysis we distinguish two categories of corrodians: recipients of basic care (*commensalen*) and of more luxurious old-age provisions (*proveniers*). The former are referred to in our sources as paupers (*arm mensch*) or as *conventualen* or *commensalen* – in this paper we will use the latter term to refer to this category.³³ They were entitled to a ‘basic’ care package,³⁴ including a

³⁰ St. Jorishof was moved to the location of a convent, the Paulusbroedersklooster. This was dissolved after Amsterdam had joined the Dutch Revolt in 1578 (W. Jeeninga, *Het Oost-Indisch Huis en het Sint Jorishof te Amsterdam* (Zwolle 1995) 56).

³¹ Jeeninga, *Het Oost-Indisch Huis*, 67.

³² Many institutions had *proveniershuizen* built on their premises, or even outside. Cf. W.Th.M. Frijhoff, ‘Food patterns of the middle classes: the Proveniershuis at Rotterdam, c. 1720-1840’ in: *"Proeve 't al, 't is prysselyck" : verbruik in Europese steden (13de-18de eeuw) = Consumption in European towns (13th-18th century) : liber amicorum Raymond van Uytven. Bijdragen tot de geschiedenis, in het bijzonder van het hertogdom Brabant* 81 (1998) 191- 206, pp. 194.

³³ Cf. Erfgoedhuis Leiden (EL) Archief gasthuizen, inv. nr. 33 f. 6, 7, 9v. In St. Pieters in Amsterdam basic corrodies are also described as ‘under the lamp’ (*onder de lampe*) probably referring to the lantern above beds in the nursing hall (SA, Archief Gashuizen, inv. nr. 82 f. 4v, 5, 6v, 10v, 12v, 13. Cf. this distinction between luxurious and basic corrodies: Van Eeghen, ‘Van gasthuis tot academisch ziekenhuis’, 50; L.C. Kersbergen, *Geschiedenis van het St. Elizabeth's of groote gasthuis te Haarlem* (Haarlem 1931) 38-39.

³⁴ In England we encounter the distinction between proper corrodies and ‘liveries’, which were ‘minor corrodies’ (Bell and Sutcliffe, ‘Valuing’, 144 note 5).

simple diet and a bed in the nursery hall (*ziekenzaal*).³⁵ We must stress that these people were paying customers: they paid a sum up front, and sometimes also agreed to work for the institution, and must therefore be regarded as corrodians, who stayed at the nursery hall for the remainder of their lives. They must be distinguished from people who were temporarily taken into the nursery halls of hospitals, paying a small sum per week, or not at all in case they were poor.³⁶

Those who could afford this could also arrange for a more luxurious corrody – in this paper we will refer to them as *proveniers*. They inhabited small houses or apartments. In St. Hiëronymusdal *proveniers* inhabited the cells the monks had used prior to the convent's shutting down in 1526,³⁷ as well as one room that previously had belonged to a lord Reijer,³⁸ one 'near the gate',³⁹ and a 'private room'.⁴⁰ These more luxurious corrodies also differed in other respects: the contract of Pieter Ghijsbrechtz. van de Hoegeveen and his wife, IJsenburch Claesdr. stipulates the couple was entitled to 'a good piece of beef' on Sundays.⁴¹ The aforementioned *commensalen* are unlikely to have received such a Sunday meal. A distinction is also visible in the contract of Jacob Symonsz., a former official of the town of Leiden, and his wife Katrijn Jansdr., who were to be treated 'according to their social prestige' (*na hoeren state*).⁴² These and other examples show that people entering St. Hiëronymusdal could be cautious to guard their social status during retirement. This was achieved by paying a relatively high sum to become *proveniers*, rather than mere *commensalen*, or by negotiating certain privileges. Therefore, on average *proveniers* contracts were twice as expensive as *commensalen* contracts; unsurprisingly, the latter were much more common. In our analysis of the long-term development of corrody prices we distinguish these two categories.

³⁵ EL, Archief gasthuizen, inv. nr. 33 f. 4v-5.

³⁶ Cf. Williams, who mentions a strand in the English literature dismissing poor corrodians 'as not being true corrodians at all' (D.H. Williams, 'Tudor Cistercian life, corrodians and residential servants', *Citeaux* 34 (1983) 77-91, 284-310, pp. 83).

³⁷ EL, Archief gasthuizen, inv. nr. 33 f. 4v-5; idem, f. 7, 7v.

³⁸ EL, Archief gasthuizen, inv. nr. 33 f. 6v.

³⁹ EL, Archief gasthuizen, inv. nr. 33 f. 8.

⁴⁰ EL, Archief gasthuizen, inv. nr. 33 f. 33.

⁴¹ EL Archief gasthuizen, inv. nr. 33 f. 24. We encounter similar 'substantial corrodies' in England: Williams comments that these 'were not very many, no more probably than one or two in most houses' (Williams, 'Tudor Cistercian life', 83).

⁴² EL Archief gasthuizen, inv. nr. 33 f. 13v; EL, Archief gasthuizen, inv nr 34, f 38. Cf. several examples of English corrodies also stipulating the recipients should be treated according to their social status: Williams, 'Tudor Cistercian life', 83-84. Furthermore, it was not unusual for authorities to have a right to send retiring servants to an institution where they received a corrody (Williams, 'Tudor Cistercian life', 80-81).

III

For several reasons it is difficult to arrive at precise corrody prices for the late-medieval period.

Corrodians did not merely pay cash, but also in kind, or by promising to bequeath their possessions to the institution.⁴³ To give an example of payment practices: when he purchased a *commensalen* contract from St. Hiëronymusdal, the man Michiel Andries Voller was able to hand over two life annuities, one issued by the town of Leiden, and another issued by a private party. Combined, these yielded 24,25 guilders per annum; their value may be estimated at 242,5 guilders. Michiel, or possibly his parents, had purchased these life annuities at an earlier point. He eventually used these financial instruments to purchase a corrody in St. Hiëronymusdal. Furthermore, while at St. Hiëronymusdal, Michiel would also continue to receive the rent of his house; the directors stipulated he would be allowed to do so, provided he would use this revenue to pay for clothing and bed clothes.⁴⁴ Eventually, this house, as well as all his other possessions, would go to the institution after he passed away.⁴⁵ As a result of the practise of making payments in kind, some of the corrody prices we report may have been slightly understated.⁴⁶

When we look at the entry sums paid in St. Hiëronymusdal, these ranged from 15 guilders the man Pieter Claesz. paid in 1547 for a *commensalen* contract,⁴⁷ to 517 guilders the couple Pieter Ghijsbrechtsz. van de Hoegeveen and IJsenburg Claesdr. paid for a *proveniers* contract in 1551.⁴⁸ We already discussed the latter couple: they were to live in a ‘proper place’ where they would receive luxurious food such as wheat bread, cheese and beef on Sundays.⁴⁹ These large differences are due to several variables: apart from the type of corrody, the number of recipients, their ages and possibly also

⁴³ For a discussion of the use of real estate, financial instruments and labour services to pay for corrodies see: J. Zuijderduijn, ‘St. Hiëronymusdal. A retirement home in late-medieval Leiden’ (working paper 2013 available at <https://leidenuniv.academia.edu/JacoZuijderduijn>) and J. Zuijderduijn, ‘Herfsttij der middeleeuwen. Oudedagsvoorzieningen in Amsterdam, einde vijftiende, begin zestiende eeuw’ (working paper 2013 available at <https://leidenuniv.academia.edu/JacoZuijderduijn>). A variety of ways to pay for corrodies is also visible in late-medieval England (P. Thane, *Old age in english history. Past experiences, present issues* (Oxford 2000) 81-82.

⁴⁴ EL, Archief gasthuizen, inv. nr. 33 f. 27.

⁴⁵ With the exception of his best cloak, which was to go to the Church of St. Mary.

⁴⁶ However a comparison of average prices for corrodies including an unknown payment in kind, and those not involving this, for St. Hiëronymusdal Leiden, did not reveal significant differences (Zuijderduijn, ‘St. Hiëronymusdal’).

⁴⁷ EL, Archief gasthuizen, inv. nr. 34 f. 27.

⁴⁸ EL, Archief gasthuizen, inv. nr. 33 f. 24.

⁴⁹ EL, Archief gasthuizen, inv. nr. 33 f. 24.

their health are all likely to have played an important role. In St. Pieter hospital Amsterdam we encounter similar differences: prices ranged from 9 guilders for a *commensalen* contract in 1493 to 440 guilders for a *proveniers* contract in 1482.

In table 1 entry sums have been used to calculate late-medieval corrody prices.⁵⁰ Individuals entering St. Pieters hospital Amsterdam on average spent 54 guilders for *commensalen* contracts, and 103 guilders for *proveniers* contracts. Prices in Leiden were higher: 91 and 132 guilders respectively. To allow for a comparison with our early-modern data, the table also gives the average corrody price expressed in day wages of a skilled worker. In the late middle ages, a *commensalen* contract cost 258 day wages on average, and a *proveniers* contract 418 day wages. Even though we base our data on a limited number of observations, we believe these averages to be accurate: they are in line with the early-modern development of corrody prices in Amsterdam and Leiden, as well as the long-term development of prices and wages (section V). Although we focus on one-person corrodies in this paper, it may be instructive to briefly look at two-person contracts as well. We have less data of these: for St. Pieter hospital the average price of four of these contracts was 246 guilders, and for St. Hiëronymusdal the average price of three of these was 504 guilders.⁵¹ In the latter hospital there was also a three-person contract issued for 436 guilders. It is clear that two-person contracts were more expensive than one-person contracts: in the early seventeenth century two-person contracts also cost twice as much as one-person contracts and this was also the case in the remainder of the early-modern period.

Calculating early-modern corrody prices can be done in a relatively straightforward way, since these are expressed in a monetary value in the contracts; the payments in kind that were so common in the late middle ages had largely disappeared, except for the inheriting of the possessions of the corrodians to the institution. Corrody prices in St. Catharina and St. Cecilia are processed in tables 2 and 3; again, these prices are expressed in day wages of a skilled worker. We have excluded the limited number of observations for couples, and focus on prices paid by individual men and women. In

⁵⁰ The method used is explained in Zuijderduijn, ‘St. Hiëronymusdal’ and Zuijderduijn, ‘Herfsttij der middeleeuwen’.

⁵¹ One of these contracts may have been a two-person *commensalen* contract.

both hospitals prices increased between 1665 and 1799. When we focus on the period 1700-1799, for which we have most data, this increase in real prices expressed in day wages of a skilled labourer was 37% for males in St. Catherina and 56% for males St. Cecilia. For females this was respectively 46% and 40%. When we include the second half of the seventeenth century and compare this to second half of the eighteenth, the increase was 55% for males in St. Catharina and 89% for males in St. Cecilia. For women these figures were respectively 88% and 56%. Men and women looking to buy a corrody from either hospital were worse off as time. Corrody prices in St. Jorishof show a comparable increase as observed in Leiden. Average prices, given in table 4, indicate an increase of 35% for men and 51% for women between the second half of the seventeenth and second half of the eighteenth century. Interestingly, the increase between the first half of the sixteenth century and the second half of the eighteenth century is relatively large at respectively 120% for men and 166% for women; prices more than doubled in two centuries.

Early-seventeenth-century prices for *proveniers* contracts, for the decades 1600-1609 and 1610-1619, in St. Jorishof were c. 900 day wages of a skilled labourer for males, and c. 750 for females. This is much more than the average late-medieval prices we found in Amsterdam, which were c. 500 day wages. It does accord with a long-term trend of rising prices, ultimately reaching respectively c. 2500 day wages in the final two decades of the eighteenth century for males, and c. 2300 for females. Our data from Leiden suggest a comparable increase: *commensalen* contracts cost c. 250 day wages in the sixteenth century, and c. 500-600 day wages in the second half of the eighteenth century. The scarce data on *proveniers* contracts show a similar development: from c. 500 to c. 800-900 day wages.⁵² Overseeing our data from Leiden and Amsterdam, we may summarize the development of corrody prices as follows:

	<i>Commensalen</i>	<i>Proveniers</i>
Sixteenth century	c. 250 day wages	c. 500 day wages
Seventeenth century	c. 350 day wages	c. 1000 day wages

⁵² We only have *proveniers* prices for six individuals, four in St. Catherina and two in St. Cecilia, on average paying 1150 guilders.

IV.

What can explain the observed price development? Corrody prices may have been affected by numerous variables: we discuss age at entry, pricing of corrodies, and opportunity costs. To begin with age at entry: did this variable change over time, for instance because people chose to ‘retire’ at an earlier age? To answer this question, we use data from St. Jorishof Amsterdam, which yields altogether 752 ages at entry covering 1600-1799. The average age at entry for single men was 57,6, for single women 59,8, and for couples 57,7. The long-term development shows a slight increase: in the seventeenth century the average age at entry for all categories was 56,1, in the eighteenth century this was 60,6. The age at entry was particularly low during the first half of the seventeenth century, at 54,3. Age at purchase thus increased over time; this should have caused prices to decrease – except in case life expectancy increased markedly between 1600 and 1800. If this were so, corrodians in the early seventeenth century could suffice with a relatively low entry sum, whereas their longer-living eighteenth-century companions had to compensate their relative longevity by paying more. According to the historian Shulamit Shahar, longevity did not change much until the nineteenth century,⁵³ and indeed, when we take a look at the years corrodians stayed in St. Jorishof, there is no reason to believe corrodians spent a longer time in the hospital: the average stay of *proveniers* in St. Jorishof Amsterdam does not show a rise in average stays. The opposite was rather true: the seventeenth-century average for all categories was 15,7 years, considerably higher than the eighteenth-century average of 11,4. Even when we exclude the final decades of the eighteenth century – which are biased because corrodians living past 1799 were not recorded – figures do not exceed thirteen years. We may conclude that age at entry and length of stay do not offer an explanation for the observed rise of corrody prices.

Can developments with respect to the pricing of corrodies explain what happened? Since the pioneering work by John Graunt (1620-1674) in constructing the first life tables, sellers of corrodies

⁵³ S. Shahar, ‘Who were old in the middle ages?’ *Social history of medicine* 6 (1993) 313-341, pp. 329.

and life annuities could calculate entry prices using methods based on early actuary science. In the Netherlands Johan de Wit (1625-1672) used these demographic data to advise a reduction in the interest rates the government paid on life annuities.⁵⁴ Did these new techniques allow directors of hospitals to increase entry prices, for instance because they were now able to convince customers of the profitability of corrodies? This seems unlikely.⁵⁵ Adrian Bell and Charles Sutcliffe already argued for the late middle ages that corrodies were not ‘underpriced’: in the absence of life tables, abbots in medieval England were perfectly able to demand corrody prices that did justice to the life expectancy of the customer – and would not put the abbeys’ finances to ruins.⁵⁶ Their conclusion seems plausible: if corrodies were underpriced, institutions selling these would not have been able to survive financially, and the practice of selling corrodies would either have been abandoned, or adjusted. In Holland corrodies were sold since the fourteenth century, so one would expect any adjustments to underpricing of corrodies to have happened in the late Middle Ages. The rise of corrody prices presented in this article, covering three centuries since 1500, cannot be comprehended as a very slow adjustment of a rudimentary pricing mechanism to a more modern pricing mechanism. Rather, already in the middle ages directors apparently used a rule of thumb that took into account practical knowledge of life expectancy to calculate entry prices that allowed the corrodies, and the hospitals, to survive for centuries.

That leaves us with the question of opportunity costs: did macro-economic development force directors of hospitals to adjust entry prices? It is a well-established fact that the cost of living increased markedly in the early-modern period. Figure 1 gives the consumer price index in Holland between 1450-1800. Prices increased by a factor of five between the mid-sixteenth and mid-seventeenth centuries. This means that retirement institutions made increasing expenses providing corrodians with the necessities of life; they had no other option than to raise entry sums. For their customers this created problems because wages did not increase at the same rate as prices. The gradual

⁵⁴ D. Houtzager, *Hollands lijf- en losrenteleningen vóór 1672* (Schiedam 1950) 96-110.

⁵⁵ Schmitz claimed that these new techniques were not immediately used by directors of hospitals. He added that life tables available in Holland, such as one created by Willem Kersseboom (1691-1771) were not fully reliable, because this author based himself on data of life annuity buyers for his calculations of life expectancy. These life tables tend to overestimate life expectancy (H. Schmitz, *Het proveniershuis te Schiedam. Vijf eeuwen instelling van weldadigheid* (Schiedam 1966) 40-41).

⁵⁶ Bell and Sutcliffe, ‘Valuing’.

decline in real wages in Holland between 1450-1800 is given in figure 2. The trends in the figures 1 and 2 gain even more weight when we consider that these are to a large extent based on data coming from the accounts of St. Catherine's hospital Leiden.⁵⁷ The consumer price index thus comes very close to the experience of several generations of directors who were responsible for keeping St. Catherine's in business. The combination of increasing cost of living and declining real wages is likely to have caused a rise in both nominal and real corrody prices.

A closely related conundrum of problems that may have contributed to rising prices concerns returns to capital. Institutions such as St. Catherine's received entry sums, which they used to provide life-long care for their customers. Ideally, the directors would invest these lump sums in such a way that the returns would cover the expenses of the corrodians.⁵⁸ This became increasingly difficult as interest rates, as well as returns to land, declined from c. 10% in the Middle Ages, to less than 4% in the eighteenth century.⁵⁹ To make matters even more complicated, the final decades of the eighteenth century directors were confronted with defaults on government debt – something hospitals had typically invested in.⁶⁰

V

These economic realities also affected (potential) corrody buyers: rising prices meant that in the seventeenth century fewer people were able to retire as *proveniers* or *commensalen* than in the centuries before. Although we can only speculate about the impact on social relations, it seems safe to state that low cost of retirement allowed late-medieval parents to be relatively independent from their children. Provided they could raise the equivalent of c. 250 day wages of a skilled labourer, they could

⁵⁷ N.W. Posthumus, *Inquiry into the history of prices in Holland* (Leiden 1946-1964).

⁵⁸ In such a scenario the life expectancy of corrodians did not really matter. Future research should indicate whether hospitals such as St. Catherine's managed to achieve returns to capital equivalent to the annual costs of their corrodians.

⁵⁹ Interest rates declined in most parts of Europe, see Zuijderduijn, *Medieval capital markets*, 243; G. Clark, 'The cost of capital and medieval agricultural technique', *Explorations in economic history* 25 (1988) 265-294; J.R. Ward, *The finance of canal building in eighteenth-century England* (Oxford 1974) 166; S.R. Epstein, *Freedom and growth. The rise of states and markets in Europe, 1300-1750* (London/New York 2000) 19-23.

⁶⁰ Schmitz, in his study of the *proveniershuis* of the small town of Schiedam, discusses the financial problems this retirement home had in the eighteenth century. He also identifies declining interest rates as a problem, as well as the increasing cost of living (Schmitz, *Het proveniershuis*, 44-45).

acquire a corrody. It is interesting to note that corrody prices were low in the centuries that witnessed the rise of the European marriage pattern in the Low Countries: in the late Middle Ages the nuclear family became more prominent, and ties with more remote family members became less important. It has been argued that this development was only possible due to increased possibilities for individuals to participate in labour markets to earn money, and in capital markets to invest savings, so they could prepare for old age.⁶¹ Our results suggest corrodies were much less expensive than in later centuries, and certainly within reach of (lowering) middling groups and elites. This provided elderly lacking support from relatives with the possibility to prevent ‘nuclear hardship’. It also improved the bargaining position of those elderly with relatives capable of supporting them: they could threaten to use their property to purchase a corrody instead of passing this on to relatives. While inexpensive pensions may have opened up possibilities for retirement in the late Middle Ages, rising corrody prices may have created problems for early-modern elderly. Some may have been unable to purchase a pension and would have lived off their savings and whatever income they could achieve. Others may have been forced to bargain with relatives, but now without the advantage of being able to threaten to take their money elsewhere. In this scenario ties between relatives are likely to have been restored. This links up nicely with a recent discussion about ‘the return of patriarchy’ in the early-modern Low Countries:⁶² when possibilities to make commercial arrangements for old age diminished, non-commercial arrangements inevitably became more important. For parents, this required a restructuring of relations with family members and this surely contributed to many fathers *and* mothers re-establishing parental control; in terms of rising pension prices one would not only expect a return of patriarchy, but also of matriarchy.

Like many other things in early-modern society, retirement also entailed questions with respect to social status. The elderly risked social descent due to their increasing incapacity to work;

⁶¹ De Moor and Van Zanden, ‘Girl power’, 23-24 and 28.

⁶² Perhaps these problems were in part countered by restoring some of the power of the *pater familias*. De Moor and van Zanden cautiously suggest the return of the patriarchate ‘to a certain degree’ in the Low Countries and England. They also indicate that this development was stronger in other parts of Western Europe (T. de Moor and J.L. van Zanden, *Vrouwen en de geboorte van het kapitalisme in West-Europa* (Amsterdam 2006) 99). See also the reaction by Manon van der Heijden, Elise van Nederveen Meerkerk and Ariadne Schmidt, rejecting this claim of a return of patriarchy (M. van der Heijden, E. van Nederveen Meerkerk and A. Schmidt, ‘Terugkeer van het patriarchaat? Vrije vrouwen in de Republiek’, *Tijdschrift voor Sociale en Economische Geschiedenis* 9 (2012) 61-72).

old-age provisions were therefore not only aimed at survival, but also at maintaining their social position. Wealthy elderly from the ranks of elites could probably afford to continue living at home, by hiring personnel. For middling groups this was probably too expensive: for them the *proveniershuis*, with its privacy and varied diet, provided a respectable alternative. For elderly from lowering middling groups there was the possibility to become *commensalen*. This was not much better than poor relief in terms of food, drink and clothing, and involved little privacy – although we should keep in mind that the latter concept cannot be easily projected on pre-industrial societies. Also, these crowded institutions were surely hazardous to one's health because of the risk of contamination with disease. It seems the main advantage was that it allowed elderly to abstain from charity. The latter was a means of last resort for those unable to provide for themselves during old age. Concerns with social descent may thus explain why thousands paid substantial sums to become mere *commensalen*. Future research should focus on contemporaries' perceptions of *proveniers*, *commensalen* and the elderly recipients of poor relief: which social and cultural implications did several care packages have? Was it for instance considered more honourable to be a *commensaal* than an old man or woman on charity, and if so, how did individuals make sure other people knew they were a *commensaal*? The latter question might have been particularly important considering that hospitals could be home to both *proveniers*, *commensalen* and people on charity.

We started this paper with the shipbuilder Cornelis Meynertsz. who in 1541 expressed his desire to purchase a corrody. Perhaps this desire was never fulfilled, but looking back, it has become clear he was much closer to retirement than most of his early-modern peers would be. Corrodies were affordable for (lowering) middling groups, and the same goes for pensions in the form of life annuities. As explained, the latter resembled the corrody, except for their payment in cash. An analysis of more than 700 life annuities the town of Haarlem issued between 1481-1497 shows that more than three quarters provided annual pensions that allowed recipients to stay above subsistence level. Such pensions sufficed to survive old age. To purchase such a 'bare bones subsistence pension',

individuals had to be able to raise the equivalent of 220 day wages of a skilled labourer.⁶³

Unsurprisingly, this is a lower price than observed for the one-person *commensalen* contract: the latter offered additional protection against market risk, as well as various services performed by the staff of hospitals. What is more important to point out is the popularity of these pensions: apart from Haarlem, all other towns in Holland sold a great many life annuities.⁶⁴ Such towns provided hundreds of people from (lowering) middling groups upward with pensions. This view is confirmed when we turn our view to the recipients: even in small towns such as Edam hundreds of households received pensions at a bare-bones level in the late Middle Ages.⁶⁵ Thus, a combination of life annuities and corrodies provided a substantial part of (lowering) middling groups with either a fixed income that could be used for support during old age, or life-long care. This amounted to a rudimentary pension system that allowed elderly from (lowering) middling groups to secure their old age with several public and private parties, and to choose from several types of old age provisions.

Concluding remarks

It has been suggested the past was a 'golden age for the elderly'. Supposedly, they were distinguished and respected for their wisdom, and therefore taken care of by their relatives.⁶⁶ This view has been opposed, most notably by Shulamit Shahar, who demonstrated there is no reason to believe the elderly were better off in the past than they are now. Our study shows that during some eras their prospects were better than during others though. The later Middle Ages were a 'golden age for the pensioner': a combination of high real wages and high interest rates allowed for low cost of retirement. This situation facilitated social developments associated with the rise of the European marriage system in the late middle ages: the emancipation of individuals from relatives. After the early seventeenth

⁶³ To this end we use the data R.C. Allen collected for England. These data indicate the price of a 'subsistence basket' per adult male per year increased from c. 80 grams of silver in 1500, to c. 290 grams of silver in 1800. When we assume a similar price for Holland in 1500, individuals looking for a 'bare bones subsistence pension' had to receive at least 80 grams of silver per annum, or 5,4 guilders. At prevailing interest rates of 10% for one-person life annuities, to achieve a 'bare bones subsistence pension', individuals paid 54 guilders, c. 220 day wages of a skilled labourer.

⁶⁴ Based on a dataset of 132 one-life annuities and 599 two-lives annuities.

⁶⁵ Van Zanden, Zuijderduijn and De Moor, 'Small is beautiful'.

⁶⁶ See Shahar's discussion of this concept in: Shahar, *Growing old in the middle ages*, 10-11, 171.

century this beneficial situation gradually came to an end: as the cost of retirement increased, fewer people could realize a care-free old age via the market. Those that still could continued to be in control of their lives; those that could not were again reduced to bargaining with relatives and charitable institutions.

Table 1. Average corrody prices in Amsterdam and Leiden (guilders)

	<i>Commensalen</i>	<i>Proveniers</i>
St. Pieter Amsterdam	54 (median 45)	103 (median 90)
St. Hiëronymusdal Leiden	91 (median 85)	132 (median 193)
Total	71	115
Total expressed in day wages	258	418

Sources: see Zuijderduijn, 'St. Hiëronymusdal' and Zuijderduijn, 'Herfstij der middeleeuwen'.

Data St. Pieter hospital based on 12 *commensalen* and 24 *proveniers* contracts.

Data St. Hiëronymusdal hospital based on 10 *commensalen* and 18 *proveniers* contracts.

Data St. Hiëronymusdal includes data from St. Catherina hospital (three *commensalen* contracts and eight *proveniers* contracts).

Day wages of a skilled labourer were c. 0,275 guilders between 1480-1550. Day wages 1480-1500 based on L. Noordegraaf, *Hollands welvaren? Levensstandaard in Holland, 1450-1650* (Bergen 1985) 70, for 1500-1550 based on 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.

Table 2. Corrody prices *proveniers* St. Catharina and St. Cecilia 1665-1799 expressed in day wages of a skilled labourer (guilders; N)

	St Catharina		St. Cecilia	
	Male	Female	Male	Female
1665-1699	478 (1)	373 (3)	594 (1)	551 (1)
1700-1749	568 (4)	486 (5)	613 (10)	619 (4)
1750-1799	796 (9)	730 (9)	980 (4)	889 (9)
1665-1799	622 (14)	542 (17)	691 (15)	684 (14)

Source: corrody dataset.

Wages skilled labourers based on De Vries and Van der Woude, *The first modern economy*, 610-611.

Table 3. Corrody prices *commensalen* St. Catharina and St. Cecilia 1665-1799 expressed in day wages of a skilled labourer (guilders; N)

	St Catharina		St. Cecilia	
	Male	Female	Male	Female
1665-1699	350 (55)	273 (34)	435 (31)	404 (20)
1700-1749	410 (148)	351 (173)	443 (86)	447 (70)
1750-1799	561 (92)	514 (82)	690 (34)	626 (35)
1665-1799	448 (295)	390 (289)	497 (151)	492 (125)

Source: corrody dataset.

Wages skilled labourers based on De Vries and Van der Woude, *The first modern economy*, 610-611.

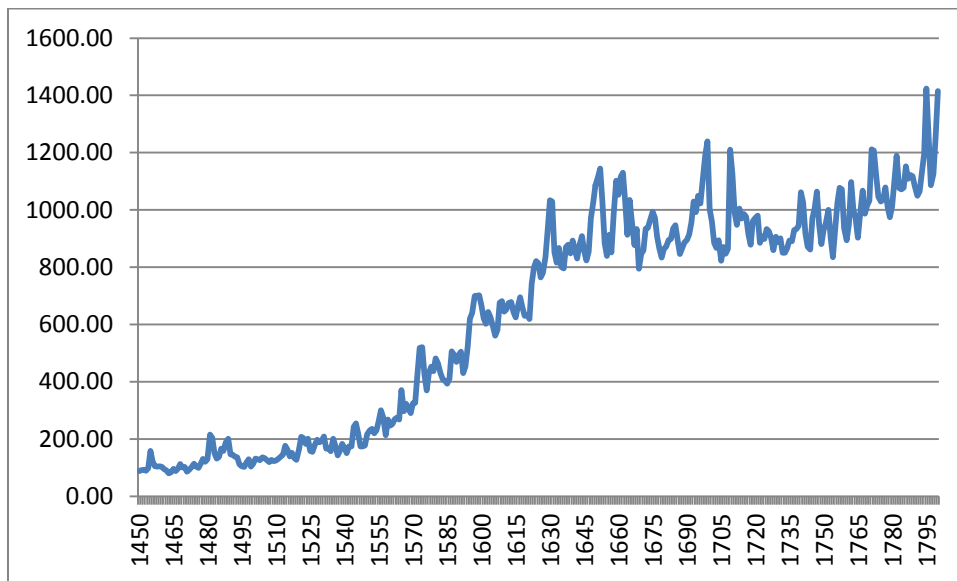
Table 4. Corrody prices *proveniers* St. Jorishof Amsterdam 1600-1799 expressed in day wages of a skilled labourer (guilders; N)

	Male	Female
1600-1649	1287 (58)	1123 (85)
1650-1699	1745 (50)	1537 (59)
1700-1749	2156 (41)	1784 (68)
1750-1799	2277 (48)	2144 (79)
1600-1799	1866 (197)	1647 (291)

Source: corrody dataset.

Wages skilled labourers based on De Vries and Van der Woude, *The first modern economy*, 610-611.

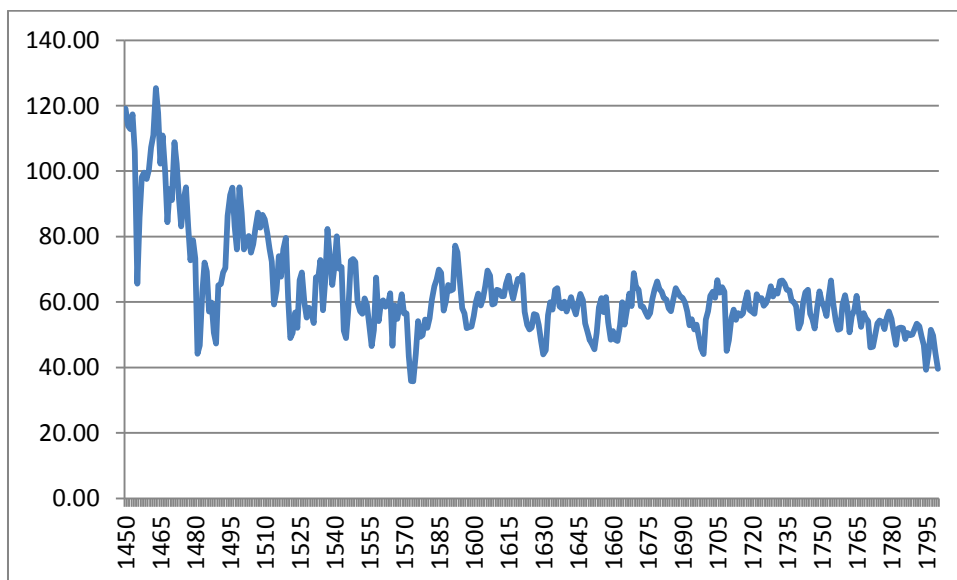
Figure 1. Consumer price index Holland 1450-1800 (1450=100)



Source: www.iisg.hpw.

Jan Luiten van Zanden based this dataset among others on data from N.W. Posthumus, who depended heavily on data from St. Catherine's hospital Leiden.

Figure 2. Real wages in Holland 1450-1800 (1450=100)



Source: www.iisg.hpw.