
The Rate of Exchange on Amsterdam in London: 1590-1660

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Fundamental to the commercial and financial relations between England and the Netherlands was the rate of exchange between their two currencies. Recent studies have increased our understanding of the negotiation of bills of exchange and the exchange rate for several places in Europe during the sixteenth, seventeenth, and eighteenth centuries.¹ These have opened up to more detailed examination a variety of topics concerned with both the internal and external economic history of the several countries involved. Important additions to the data base, especially when they extend it backwards into the early modern period, expand the scope of such exploration significantly. This is particularly

¹ There are graphs showing the Bruges-London rate, 1388-1411, and the Antwerp-London rate, 1315-1588, in HERMAN VAN DER WEE, *The Growth of the Antwerp Market and the European Economy (fourteenth - sixteenth centuries)* (The Hague, 1963), III, nos. 32 and 33. Van der Wee did not publish his data but he has shared some of them with John D. Gould and, based on them and on other data uncovered by his own researches, Gould, in *The Great Debasement: Currency and the Economy in Mid-Tudor England* (Oxford, 1970), p. 89, compiled his Table 9 showing the London-Antwerp rate, 1544-1563. JOHN J. MCCUSKER, *Money and Exchange in Europe and America, 1600-1775: A Handbook* (Chapel Hill, N.C., and London, 1978), pp. 52-55, relied almost exclusively for his data before 1660 on N[icolaas] W. POSTHUMUS, *Inquiry into the History of Prices in Holland* (Leiden, 1946-1964), I, 590-591, who, in turn, took his figures from the published official price currents of Amsterdam. A full list of the materials that Posthumus used, of additional copies found since he did his work, and of other, similar materials, giving the location of surviving copies of them all, is to be published in John J. McCusker and CORA GRAVESTIJN, *A Survey of Extant European Price Currents, Money Currents, and Exchange Currents to 1776* (forthcoming).

true when the additions concern such a critical period in the history of England and of the United Provinces as the years 1590 through 1660.

While it should be obvious that the rate of exchange by itself will not answer the many questions about these years that have attracted the attention of historian, new data are always welcome. Indeed the absence of information about exchange rates, and thus the lack of insights that series like the ones presented below could offer, has explicitly been lamented by writers on such subjects as the depressed state of the English economy during the early 1620s. Barry Supple's is the most detailed of such analyses. Based on the evidence available to him, he expected that the unfavourable English balance of trade over those years drove the rate of exchange down.² Yet the tables below show just the reverse to have been the case: the pound sterling bought more rather than fewer guilders each year from 1619 through 1625. This information does not on its own negate Supple's work, of course. What it might merely be saying is that the guilder was in even worse shape than the pound, that the Dutch balance of payments (because of the renewal of the Franco-Dutch war) was even worse than the English, the depression in Amsterdam even worse than in London. All that these new data can do is suggest new ideas worth investigating — and, additionally, make the comparative aspects of such research more possible by allowing the economic historian to reduce values in one currency into the other.

The Notariële Archieven (Notarial Archives) in the Gemeente Archief, Amsterdam, though incomplete still contain approximately twenty-five thousand volumes covering the years 1569-1895.³ Among the large variety of documents

² Our reference is to Supple, *Commercial Crisis and Change in England, 1600-1642: A Study in the Instability of a Mercantile Economy* (Cambridge, 1959), 94-96, and *passim*. See also [John] D. GOULD, "The Trade Depression of the Early 1620's", *Economic History Review*, 2d Ser., VII (August, 1954), 81-88.

³ Usually abbreviated (as hereinafter) N.A. and G.A.A. For the period of this paper, 1590-1660, there are about 2,500 volumes. One of the authors of this paper, Hart, retired in 1976 as the director of the G.A.A. Both he and McCusker wish to acknowledge the cooperation of the current director, Mevr. Dr. Wilhelmina C. Pieterse. Hart also wants to thank Mevr. A. Bosma and those who assisted her in helping him to extract the data from the N.A. McCusker expresses his appreciation to Mevr. Dr. C. Gravesteyn, the librarian of the Economisch-Historische Bibliotheek, Amsterdam, for her many good offices and to the Committee on Research in Economic History for helping to fund research trips to Amsterdam.

There are other, similar notarial record collections in the city archives of Rotterdam, Haarlem and Enkhuizen. Those of Middelburg were destroyed in World War II. Hart made extensive use of the N.A., G.A.A., for his article "Amsterdam Shipping and Trade to Northern Russia in the Seventeenth Century", *Mededelingen van de Nederlandse Vereniging voor Zeegechiedenis*, XXVI (March, 1973), 5-30, 105-116, and there printed 40 examples of the rate of exchange at Archangel on Amsterdam, 1606-1710, from the protests of bills of exchange. This has been translated as "Amsterdamse scheepvaart

that Amsterdam notaries copied into their record books were the protests for non-payment of bills of exchange drawn against Amsterdam merchants. An integral part of each protest was a verbatim copy of the text of the bill itself. It was the custom during this period that London bills on Amsterdam record in their text the rate at which they were drawn.⁴ Extracted, copied and compiled for the years 1591 through 1660 these rates of exchange become the basis of the tables below. As such they supplement printed materials found elsewhere and thus constitute the beginnings of a series that now can run from the late sixteenth century to the present.⁵

The bill of exchange drawn in London on Amsterdam was a convenient means of transferring funds from the one country to the other. In the standard manner the bill of exchange involved four participants. A merchant in London (the payer) who wanted to send money to someone in Amsterdam (the payee) approached another merchant in London (the drawer) and asked him to order his own correspondent in Amsterdam (the drawee) to make the required payment. The drawer's instructions were sent through the post to the payee in Amsterdam by means of a signed document written according to a standard formula: a bill of exchange. The drawee, following those instructions, gave the payee a sum in Dutch currency for which the payer had given the drawer a sum in English currency. The ratio between the two sums of money in the two different countries was the rate of exchange.⁶

en handel op Nord-Rusland in de zeventiende eeuw", and printed in Hart, *Geschrift en Getal: Een keuze uit de demografisch-, economisch- en sociaal-historische studien op grond van Amsterdamse en Zaanse archivalia, 1600-1800*, Hollandse Studiën, 9 (Dordrecht, 1976), 267-314. See also Jan Kupp, "Dutch Notarial Acts Relating to the Tobacco Trade of Virginia, 1608-1653", *William and Mary Quarterly*, 3d Ser., XXX (October 1973), 653-655.

⁴ This was not always the case. See McCUSKER, *Money and Exchange*, p. 124n. The other major source of quotations of the exchange rate — besides the bills themselves and printed price currents such as Posthumus used — is the correspondence of merchants. See, e.g., the rate at Rotterdam on London included regularly at the foot of Brian Ball's letters of 1641 to George Warner of London, printed from State Papers Domestic, Supplementary, S.P. 46-84, Public Record Office, in Joan Thirsk and [John] P. COOPER, eds., *Seventeenth Century Economic Documents* (Oxford, 1972), pp. 497-499.

⁵ The three tables in this paper have been compiled so as to be compatible with Table 2.7, 2.8, 2.9, and 5.1 in McCUSKER, *Money and Exchange*, pp. 52-55, 56-57, 58-60, 305-312. Table 2.9 can be extended by going to *The Course of the Exchange* and its continuation, *The Stock Exchange Daily List*. Table 2.7 can be extended through 1914 by reference to POSTHUMUS, *Prices in Holland*, I, 606-638.

⁶ The explanation in this paragraph (and in much that follows) is expanded upon in McCUSKER, *Money and Exchange*, *passim*. The most authoritative contemporary English-language discussion of the negotiation of bills of exchange is GERARD DE MALYNES, *Consuetudo vel Lex Mercatoria; or the Ancient Law-Merchant* which was first published in London in 1622, was reprinted in 1629 and 1639, and had a second and third edition in

Our London payer in the above example probably proceeded through an exchange broker who operated on the Royal Exchange in the building that Sir Thomas Gresham constructed in the 1560s.⁷ The broker acted as an intermediary between drawer and payer, blunting the competitive disadvantage either would have been under in initiating any such transaction. The market was more efficient for his presence because the rate of exchange was the result of bargaining and as such was subject to a variety of short term and long term pressures among which the changing balance of payments between the two countries was probably the most important.⁸ Since we have little other information on this subject during the era, the exchange rate series presented here

1656 and 1686. "He was almost certainly a Fleming whose real name was Geraart van Mechelen, which he translated into French", according to Raymond [A.] DE ROOVER, "On the Authorship and Dating of 'For the Understanding of the Exchange'", *Economic History Review*, XX (April 1967), 150n. As was typical of such books during this period, Malynes borrowed from others; one important source, especially appropriate for any investigation of the London-Amsterdam exchange, was a Dutch work. Originally published by (and perhaps authored by) HARMAN JANSZON MULLER, this book, *Tresoir van de Maten van Gewichten van Coorn, Lande, van Elle ende natte Mate, Oock van de Gelde en Wissel...* (Amsterdam, 1590), was subsequently reprinted in 1615, 1647, and 1668 to our knowledge, and perhaps more frequently; the title varied a bit each time. Herman van der Wee thinks that "the author was probably an Antwerper". "Monetary, Credit and Banking Systems", in *The Cambridge Economic History of Europe, V: The Economic Organization of Early Modern Europe* (Cambridge, 1977), p. 328.

Appropriately, WYNDHAM BEAWES, *Lex Mercatoria Rediviva; or, the Merchants Directory* (London 1751, and numerous subsequent editions) is the standard eighteenth-century authority. See also PAUL EINZIG, *The History of Foreign Exchange* (New York, 1962; 2nd ed., 1970).

⁷ RAYMOND [A.] DE ROOVER, *Gresham on Foreign Exchange: An Essay on Early English Mercantilism with the Text of Sir Thomas Gresham's Memorandum for the Understanding of the Exchange* (Cambridge, Mass., 1949), p. 8. The only thing wrong with this otherwise very fine book is DE ROOVER's attribution of the memorandum to Gresham; most seem now to agree that he was not its author. See M[ary] Dewar, "The Memorandum 'For the Understanding of the Exchange'; Its Authorship and Dating", *Economic History Review*, 2d Ser., XVIII (April 1967), 476-487; Daniel R. Fusfeld, "On the Authorship and Dating of 'For the Understanding of the Exchange'", *ibid.*, XX (April 1967), 145-150; Gould, *Great Debasement*, 161-164.

⁸ Another was the par of exchange based upon the comparative legal valuations in the two countries given to the same amount and the same quality (fineness) of precious metal. See the discussion in DE ROOVER, *Gresham on Foreign Exchange*, pp. 129-131 *et seq.* In 1590 the par of exchange was 33 *schellingen* 6 *grooten* (33.50) per pound sterling. *Tresoir van de Maten van Gewichten*, p. 156. Cf. DE ROOVER, *op. cit.*, 136. According to M[ATTHIJS] VAN VELDEN, *Fondament vande Wisselhandelinge* (Amsterdam, 1629), p. 117, par was 33 *schellingen* 4 *grooten* (33.33) in the year that he wrote. Cf. DE ROOVER, *loc. cit.* In 1700 par was 37 *schellingen* 4-9 *grooten* (37.05) according to a reference in SAMUEL RICARD, *Traité général du commerce* (Amsterdam, 1700), pp. 379-380.

will, other things being equal, reflect some of the changes in the Anglo-Dutch balance of payments. It will do so more reliably because of the smoothing in the fluctuations of the exchange rate implicit in the workings of exchange brokers.

The bill of exchange had a set format; as an example, here is the text of one (see also Figure 1):⁹

Laus Deo in London le 14th December 1609 100 li star[ling] at 35s-7d
Att dowble uzerance pay by this our seacond bill of ex[chang]e our first
nott payed unto Sir Isacke Poulle or the bringer hercof One hundreth
seaventy & seaven powndes eighteene shillings and fower pence for
the vallew heere rec[eive]d of Mr Michael Verhaghen. Att the day make
good payment & putt ytt to acco[unt] etc.

Your M[ast]rs Rich[ar]d Bowdler & F[ranci]s Grenowes

There are in this example one or two things worth commenting upon. The rate of exchange at the top, "35s-7d" is the sum in Dutch currency to be paid for each pound sterling, here 35 *schellingen* and 7 *grooten vlaamsch*. There were 12 *grooten* per *schelling*, and 40 *grooten* or $3\frac{1}{3}$ *schellingen* per *gulden* or *florijn* (in English, the guilder). The "uzerance" (usance) of the bill specified the customary period after sight at the end of which a bill was to be paid. In the Amsterdam-London trade, one usance equalled one calendar month and "att dowble uzerace" signified, obviously, two months.¹⁰ What this all meant is that Poulle could reasonably have expected to collect 177 *ponden* 18 *schellingen* and 4 *grooten vlaamsch* (or 593 *gulden*) sometime shortly after 14 February 1609/10 old style, 4 February 1610 new style, provided the payer accepted the bill.

Not all bills of exchange drawn in London on Amsterdam were accepted and paid. The drawee in Amsterdam could refuse to honor the bill of exchange, most frequently because the drawer had insufficient funds to his credit on the drawee's books. If, when the payee presented the bill for acceptance, the drawee said no, then the payee instituted a formal protest. The central document in these proceedings, itself called the protest, was sent back to the payer in London, there to be filled with the appropriate authorities in an attempt to get the drawer to repay the money given him there. Before sending the original

⁹ "Wissels uit de 17^e, 18^e, en 19^e eeuw", Verzameling Velle, Economische-Historische Bibliotheek. While this bill was in fact sent to George Morgan and Isaac Grenowes in Middelburg, it duplicated the format of bills drawn on Amsterdam and has the advantage as an illustration of being in English. The authors wish to thank Prof. J. S. COCKBURN for help with the transcription of this bill of exchange. See also the text of the bill printed in *Tresoir van de Maten van Gewichten*, pp. 148-149; and the 1611 and 1650 bills illustrated and discussed in DE ROOVER, *Gresham on Foreign Exchange*, pp. 123-127, and Figure III.

¹⁰ *Tresoir van de Maten van Gewichten*, p. 146.

protest on to London, the prudent payee made certain that a copy was first inscribed into the book of one of Amsterdam's notaries.

Five hundred and fifty-six London bills of exchange entered the Amsterdam notarial records as protested between 1592 and 1660. These are the ones of which we have a surviving record and the ones used for this study. But they are only a fraction of all such London bills because the Notarial Archives are not complete for all notaries for all year. And, of course, protested bills made up only a small part of all bills drawn in London on Amsterdam. These warnings are but the most important caveats to be entered in any discussion of the data. The impact of all of this is to force us to use these and similar data with caution. The potential problems will be treated below. Suffice it to say that none of these problems is severe enough to stop the reader from doing the most obvious calculations based upon the rates of exchange here compiled, i.e., converting a sum in one currency into its equivalent in the other. Table 3 below makes this a bit easier by giving on an annual basis the number of guilders equal to £ 100 sterling between 1590 and 1660 (see also Figure 2).

Using the rates only of protested bills might result in a distorted picture if we have reason to believe that the rates were somehow related to the fact of protest. If, for instance, there was reason to believe that bills that had been sold at a "cheap" rate were more prone to being protested, the drawer being somehow less secure financially, then this would indicate a bias in the rates quoted here. But where we have the opportunity of comparing these data with data drawn from other sources, there is no suggestion of such a pattern (see Table 2). We are reasonably safe in the inference that the rates of protested bills of exchange were representative of the going rate at the time they were drawn.

There are, however, other factors which could influence and perhaps distort these data. A bill of exchange once received through the post by the payee was presented by him to the drawee who, willing to pay the bill, marked it as accepted. Accepted did not mean paid, however, and the reason was the obvious one: some time had to be allowed for the drawee to assemble the money. The time to be allowed to pass was a combination of the usance mentioned above and a small, additional period of grace. Thus even "at sight" bills were not in fact paid the very day presented. The usance or sight stipulated in the bill was an object of negotiation between payer and drawer and the difference in price between one period and another was effectively the difference in the interest payable at the going rate on a loan of that duration. The bills in the notarial records ranged in usance from "at sight" to three usance plus four days, about ninety-five days. There is a clear pattern of lengthening usance over the seventy-year span we are dealing with; one usance was the mode until 1612 and two usances afterwards.¹¹

¹¹ Before 1612 more than two-thirds of all bills were drawn at one usance; afterwards some seventy percent were drawn at two usances. The change is sudden and sharp

It is difficult to decide how to account for differences in usance when compiling the rates of exchange. In theory we would expect the rate in London to have risen as the usance increased.¹² The payer in London who waited longer for his money to be paid at Amsterdam should have received more *schellingen* per pound sterling than the payer who had a shorter wait. Yet differences in usance were not the only reason why one bill cost more or less than the next one.¹³ Indeed the several cross-pressures on the rate of exchange could resolve themselves in either direction. In our data we have eleven instances of bills drawn within two days of one another; all other things being equal, the rates at which they were drawn should have varied directly with the usance. Yet it worked that way less than three-quarters of the time. In the remaining instances some other factor intervened to cause the payer and the drawer to agree to a rate that we would not otherwise have expected.

What this means in practice is that it would be rash to compute much less to implement any systematic "correction" based on the implicit premise that exchange rates varied only with the usance.¹⁴ We have not attempted to reduce all rates to the same usance. We have simply averaged together all the rates available to us to arrive at the monthly and annual means in the following tables. Basically, then, we think of our data as showing the usual commercial rate of exchange in London or Amsterdam. Our feeling in adopting this convention is that, during this period, fluctuations in the rate of exchange caused by factors other than usance were at least as important as differences based on usance. We risk smoothing out too much of the former by presuming to correct only for the latter without knowing for certain what it was that caused any particular variation in the rate of exchange.¹⁵

but we know of no reason for it. Nor does there appear to have been any equivalent change at Amsterdam, at least in the rates as quoted by Posthumus, *History of Prices in Holland*, I, 586, 590-592. See also DE ROOVER, *Gresham on Foreign Exchange*, p. 109.

¹² "The exchange rate for bills payable at double usance was always above the rate for usance bills..." DE ROOVER, *Gresham on Foreign Exchange*, p. 149.

¹³ Probably the most important of these factors were the reputations of the drawer and the drawee for honesty and financial soundness. It is clear that some individuals were willing to pay more than the going rate for bills they were certain would be paid. It is equally clear that a market existed, presumably at less than the going rate, for bills the pedigree of which was uncertain or even doubtful MCCUSKER, *Money and Exchange*, pp. 12, 122, 159, 180.

¹⁴ Contrast GOULD, *Great Debasement*, p. 88, who reduced the rates of all bills not drawn at sight by an annual rate of 10 percent.

¹⁵ This is one difference between rates derived from actual transactions and those quoted, in a later period, by foreign exchange dealers. Edward J. Perkins could indeed state with some certainty concerning the rates quoted by dealers after 1878 that "the price difference between a 60-day bill and the more expensive short [3-day or sight] bill represented solely the interest component". In his article: "Foreign Interest Rates in Ame-

A final point, saved until last because of its importance. In 1609 the *Wisselbank van Amsterdam* was established as the first exchange bank in northern Europe. All exchange transactions were cleared through it and it performed other functions as well. Starting in the 1620s, a difference began to develop between "bank money" — (*banco*) — the money of exchange — and current money — the money of the market place. The difference between the two, called the *opgelt* or the *agio*, was expressed as the percentage premium paid in current money to equal a given sum in bank money. An *agio* of 5% meant that one had to give 105 guilders in current money to get 100 guilders in bank money. There are only a few quotations of the *agio* before 1660 and what there are suggests a normal rate of between 1% and 4% with a high of at least 10% in the mid-1640s.¹⁶ For the economic historian, this means in practice that Dutch commodity prices must first be reduced from current money to bank before they can be converted into sterling and vice versa.

What we have then is a fairly satisfactory series giving some monthly and complete annual figures of the rate of exchange in London between English currency and the exchange or bank money of Amsterdam from 1590 through 1660. It complements and supplements other published series in that it compares well with an expanded series of the rate at Amsterdam (published here as Table 2) and links up with a series of the rate in London that begins with 1660 and carries on through 1775. As a result we are able to trace the fluctuations in the London-Amsterdam rate of exchange for nearly two hundred years — and beyond.

rican Financial Markets: A Revised Series of Dollar-Sterling Exchange Rates, 1835-1900", *Journal of Economic History*, XXXVIII (June 1978), p. 396. Even so, the firm the records of which he examined, "for reasons not fully understood", never bought bills at the quoted rates (*ibid.*, 409). L[ance] E. Davis and J[onathan] R. T. Hughes, working on a series for earlier in the same century, decided that their data before 1831 were such as not to allow them to correct for differences in usance. See "A Dollar-Sterling Exchange, 1803-1894", *Economic History Review*, 2d Ser., XIII (August 1960), 56. Data in McCUSKER, *Money and Exchange*, *passim*, were compiled in much the same way as herein with the difference that when they were so plentiful as to have more than one quotation for the same date, a preference was always shown for rates with the shortest usance.

¹⁶ In 1629 van Velden talked of "eenighe differenite... van $\frac{1}{4}$ a $\frac{1}{2}$ ten hondert tusschen loopend' ghelt en Wissel-ghelt... de *aggio*..." *Fondamentant vande Wisselhandeling*, p. 3. See also McCUSKER, *Money and Exchange*, pp. 43-44, and Table 2.6, pp. 46-51. See also POSTHUMUS, *Prices in Holland*, I, lvii-lx, cx, 651-654.

TABLE 1

RATE OF EXCHANGE: LONDON ON AMSTERDAM, 1590-1660
(Schellingen Banco per £ 1 Sterling)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average
1590					33.93								33.93
1591											34.33		34.33
1592									35.00				35.00
1593						36.08	36.08	36.08	36.92	37.12			36.52
1594		36.17		36.33				36.62	36.08	36.50		35.62	36.23
1595		34.42					33.33	33.50			33.81		33.88
1596	34.33			34.67	34.58	34.50		35.00	34.58	35.00	35.33		34.72
1597	34.67	34.58			34.33	34.17			33.83				34.24
1598						33.62							33.62
1599				33.75					33.69		35.00		34.15
1600	34.25	34.67	34.25		34.83				34.67	35.00	35.08		34.73
1601	35.00	35.50		35.50							36.67		35.81
1602					36.58	36.54					36.67		36.62
1603	36.00	37.00		36.58			37.00			37.17	37.50	37.50	36.87
1604	37.17		37.00				36.96		37.25	36.83			37.01
1605		36.00	35.50	35.46	35.67		35.25	35.75	36.00				35.66
1606	35.00	34.75		35.38			35.75					35.50	35.38
1607	36.83	36.17	36.25	36.00	36.33				36.33		36.71		36.40
1608	36.17			36.58	36.42			35.42	35.08		34.50		35.60
1609			34.04			34.27	34.67			35.83	35.83		34.70

The Rate of Exchange on Amsterdam in London: 1590-1660

(Continued)

TABLE 1

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
1610			34.75	34.75	34.96	34.67						35.00	34.65
1611	35.04	35.17			35.50				36.00	37.00		34.67	35.61
1612	35.83			36.00	35.62				35.46	36.00			35.78
1613	35.17				35.50				35.38		35.58	35.00	35.34
1614	34.83		34.67					34.83		35.71	35.00		34.98
1615	34.94	35.25			34.75							35.17	35.00
1616	34.83	34.92	34.84	34.75	34.96	35.17	35.00	35.12	35.25	35.00	35.17	35.21	35.02
1617	35.25	35.25		35.25			35.33		35.83			34.92	35.25
1618	35.33	35.50	35.67	35.67			35.33				35.75	35.58	35.54
1619	35.67	35.58	35.50	35.75	35.58	35.54	35.39	35.25	35.10	35.33	34.91	34.50	35.34
1620	34.08		34.42							34.67		34.33	34.38
1621	34.29	34.33			34.50	34.08				34.62			34.41
1622		34.00	34.00	34.50				35.58	35.67	35.52			34.91
1623					35.50		35.75		36.42	36.75	37.00	36.96	36.16
1624	36.92		36.75				36.17	36.17			36.92		36.64
1625			36.50		36.88	36.33	36.50		36.67	37.00			36.67
1626		36.58	36.58	36.50					36.17		36.00		36.31
1627			35.58				36.67		36.62	36.58	36.83	36.83	36.32
1628	36.50	36.08	36.33	36.33	36.25	36.16	36.08	36.22	36.36	36.50	36.75	37.00	36.38
1629	36.50	36.42	36.33	36.16	36.00	36.46	36.92	36.88	36.83	36.92	37.00	36.67	36.59

(Continued)

TABLE 1

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
1630	37.00	37.08	37.25	37.17	37.33	37.17							
1631	36.50	36.67	37.00	36.88	36.75	36.58	36.88	37.17	37.50	37.83	38.17	37.75	37.43
1632	37.33	37.42	36.50	37.42	37.50	37.44	37.39	37.33	37.50	37.67	37.42	37.38	37.05
1633	37.67	37.50	37.42	37.50	37.67	37.70	37.72	37.75	38.00	37.67	37.67	37.67	37.40
1634	37.78	37.75	37.58	37.75	38.17	38.03	37.89	37.75	37.83	38.25	37.83	37.80	37.73
1635	37.33	37.58	37.67	37.50	37.14	36.78	36.42	36.38	36.34	38.00	37.75	37.54	37.82
1636	35.58	35.58	35.58	35.67	36.17	37.00	37.11	37.22	37.33	36.29	36.25	35.92	36.80
1637	36.92				37.31	37.00				37.83	37.83		37.30
1638			37.00	36.79				36.58	36.67		36.58	36.33	36.72
1639	36.33	37.17	36.67	37.33	36.75	37.58				37.33			37.09
1640		37.25	37.29	37.29									
1641			39.75				39.42	40.17	39.17	38.12		39.50	37.79
1642	38.62	38.62			38.79						38.92	38.58	39.36
1643		38.42		39.67	40.42				39.00	38.50		38.50	38.64
1644	40.42	40.58	40.33	40.17			39.42			40.00		40.08	39.38
1645		39.83	39.00	39.17	38.92	38.75	38.62	38.50		40.25			40.07
1646			38.17	37.75		37.33	37.42	37.33			36.79	36.25	38.97
1647	36.42	35.92			35.58	35.29						36.25	37.40
1648	33.83			33.33	33.17	32.50					34.42	34.25	35.31
1649				33.29	33.00	33.17	33.25	34.25		35.33	35.42	34.00	33.92
											33.75		33.55

The Rate of Exchange on Amsterdam in London: 1590-1660

(Continued)

TABLE 1

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
1650	34.25	34.08	34.42					35.33	35.67	36.67	37.50	38.42	35.76
1651	37.50	37.88	37.50				36.67			37.25		37.08	37.15
1652	37.42	37.17			36.92	36.67	36.33				37.00	36.33	36.77
1653	36.25		35.92	35.67					35.92	36.17			35.96
1654	36.33		37.00			37.08		36.83				37.12	36.92
1655	37.00					36.86		37.08		37.21		37.08	37.02
1656	36.50	36.46	36.42	36.17	35.42	35.51	35.60	35.51	35.42	35.54	35.67	35.42	35.80
1657	35.16	34.67	34.88	34.59	34.29	34.00	34.79	34.90	35.00	34.96	34.92	35.58	34.81
1658	34.67	35.00	34.92	34.75	34.58	34.66	34.75	34.79	34.83	34.75	34.67	34.75	34.76
1659	34.67	34.58	34.75	34.58	34.67	34.83	35.67	35.50	36.83	37.17	37.08	36.50	35.57
1660	37.67	37.50	37.67	38.08	38.25	38.29	38.33	37.92	38.10	38.27	38.67	38.75	38.12

Notes and Sources:

1590: *Tresoir van den Maten van Gewichten van Coorn, Lande, van Elle ende natte Mate, oock van den Gelde en Wissel...* (Amsterdam 1590), pp. 148-149.
 1591-1660: *Notariële Archieven, Gemeente Archief, Amsterdam*. See text.

The data in these tables were compiled in ways comparable to the methods used in JOHN J. MCCUSKER, *Money and Exchange in Europe and America 1600-1775: A Handbook* (Chapel Hill, N.C., and London, 1978). They were assembled according to the date of the bill of exchange; the bills, drawn in London, were dated there in the English fashion according to the old Julian calendar and they are here grouped in the same order. The United Provinces had adopted the new Gregorian calendar in 1583. Prior to February 1600 there were nine days difference between the two calendars; in the seventeenth century there were ten days. When there was more than one rate available for a given month, a mean was calculated for each third of the month (1-9, 19-19, 20-31) and then a monthly mean computed. Figures in italics are straight-line interpolations based on the figures for the preceding and following months. Annual averages are the mean of the twelve months but when they were fewer than twelve monthly figures, the year was first divided into its four quarters and quarterly averages calculated from the available monthly figures. Annual averages are then the mean of the available quarterly averages. The idea in all of this is to avoid weighting the averages by what has simply chanced to survive.

TABLE 2

RATE OF EXCHANGE: AMSTERDAM ON LONDON, 1593-1623
 (Schnelling Banco per £ 1 Sterling)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
1593									35.83	35.79			35.81
1594													
1595	33.67					32.17					32.25		32.70
1596													
1597							33.58						33.58
1598													
1599										33.42			33.42
1600					33.75						34.12	34.17	33.95
1601													
1602													
1603					35.83								35.83
1604		36.25											36.25
1605					34.52	34.67	34.62						34.61
1606			34.35	34.50					35.33				34.73
1607					35.58							35.42	35.50
1608	35.58									34.42			35.00
1609		33.67				33.75			34.33		34.67		34.10

The Rate of Exchange on Amsterdam in London: 1590-1660

(Continued)

TABLE 2

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
1610					34.33								34.33
1611													
1612													
1613													
1614		34.00											34.00
1615		34.08											34.08
1616													
1617													
1618								35.00					35.00
1619			34.85									34.67	34.76
1620				33.50									33.50
1621													
1622					33.83								33.83
1623								34.83					34.83

Notes and Sources:

1593-1623: Notariële Archieven, Gemeente Archief, Amsterdam.

1609, 1619: N[ICOLAAS] W. POSTHUMUS, *Inquiry into the History of Prices in Holland* (Leiden, 1946-1964), I, 590.

These data in the N.A. come from official statements made by brokers or merchants about the current rate of exchange at Amsterdam, usually in connection with a protest. The dates are the dates of the attestation and are usually close to or the same as the date of the entry of the protest. The rates were compiled as for Table 1.

The Rate of Exchange on Amsterdam in London: 1590-1660

TABLE 3
ANNUAL AVERAGE RATE OF EXCHANGE, LONDON ON AMSTERDAM,
1590-1660

(Gulden or Florijns Banco per £ 100 Sterling)

1590	1017.90	1626	1089.30
1591	1029.90	1627	1089.60
1592	1050.00	1628	1091.40
1593	1095.60	1629	1097.70
1594	1086.90		
1595	1016.40	1630	1122.90
1596	1041.60	1631	1111.50
1597	1027.20	1632	1122.00
1598	1008.60	1633	1131.90
1599	1024.50	1634	1134.60
		1635	1104.00
1600	1041.90	1636	1093.90
1601	1074.30	1637	1119.00
1602	1098.60	1638	1101.60
1603	1106.10	1639	1112.70
1604	1110.30		
1605	1069.80	1640	1133.70
1606	1061.40	1641	1180.80
1607	1092.00	1642	1159.20
1608	1068.00	1643	1181.40
1609	1041.00	1644	1202.10
		1645	1169.10
1610	1045.50	1646	1122.00
1611	1068.30	1647	1059.30
1612	1073.40	1648	1017.60
1613	1060.20	1649	1006.50
1614	1049.40		
1615	1050.00	1650	1072.80
1616	1050.60	1651	1114.50
1617	1057.50	1652	1103.10
1618	1066.20	1653	1078.80
1619	1060.20	1654	1107.60
		1655	1110.60
1620	1031.40	1656	1074.00
1621	1032.30	1657	1044.30
1622	1047.30	1658	1042.80
1623	1084.80	1659	1067.10
1624	1099.20		
1625	1100.10	1660	1143.60

Notes and Sources:

These figures are the annual averages from Table 1 multiplied by a factor of 30. E.g., since in November 1591 34.33 *schellingen* equalled £ 1, then £ 100 equalled 3433 *schellingen*. At 3-1/3 *schellingen* to 1 *guilder*, 3433 *schellingen* equalled 1029.90 *gulden*. The same result can be achieved more easily by multiplying 34.33 times 30 (since $100 \div 3-1/30 = 30$).

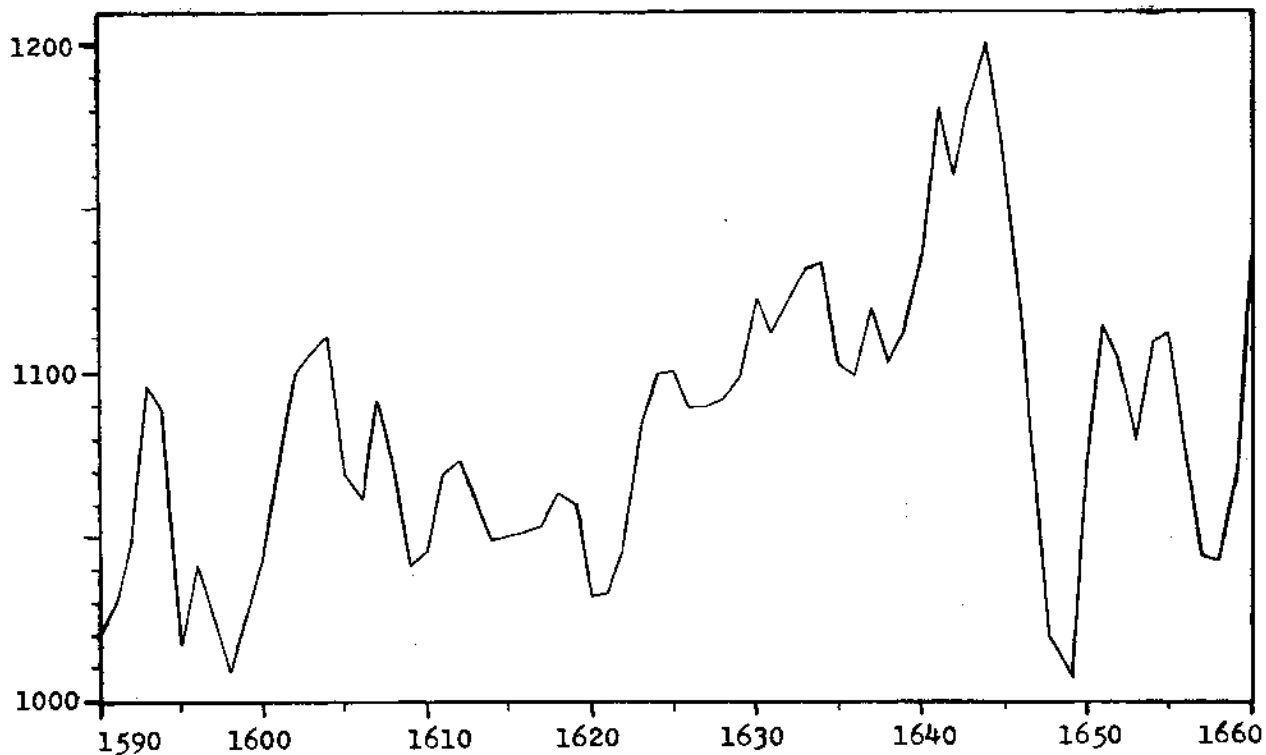
Figure 1 - Bill of Exchange drawn in London on Middelburg, 1609

Laid Dno in London 10-14^e September 1609. Et sum at 35-7^{1/2}
 De double payant par by this our Exchanged bill of exchange our first note payable unto *Edw. Doulton*
 or his assignes *Edw. Doulton* *Edw. Doulton* *Edw. Doulton* *Edw. Doulton* *Edw. Doulton* *Edw. Doulton*
 at the wallow *Edw. Doulton* *Edw. Doulton* *Edw. Doulton* *Edw. Doulton* *Edw. Doulton* *Edw. Doulton*
 =: You' m. *Edw. Doulton* & his Commis.

Notes and Sources:

"Wissels uit de 17e, 18e, en 19e eeuw," Verzameling Velle, Economisch-Historische Bibliotheek, Amsterdam. See the text for a transcription of this bill of exchange.

Figure 2 - Annual Average Rate of Exchange, London on Amsterdam, 1590-1660 (Gulden or Florijns Banco per £ 100 Sterling)



The Rate of Exchange on Amsterdam in London: 1590-1660

Notes and Sources:
See Table 3.

