4.
The multiple currencies of Sweden-Finland 1534–1803[1]

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4.1. Introduction

This chapter discusses the currency system of Sweden-Finland in 1534–1803. What characterises most of the period was the perplexing parallel use of several domestic currencies. Exchange rates fluctuated not only on foreign currencies (see Chapter 5) but also between these domestic currencies. Such a monetary system is here termed a multi-currency standard, in contrast to the mono-currency standard with a single domestic currency (see Chapter 2) that is typical of the modern age.

The axiomatic law of identity says that 'A' is always equal to 'A'. The modern capitalist economy presumes such an identity, so that any two 'American dollars' are always equal. However, such identities cannot automatically be assumed for the pre-industrial era, since the meaning of a monetary term could differ between contexts and periods, creating confusion and occasionally also disputes about how to interpret contracts. Over time, a monetary term could bifurcate, multiplying the number of monetary units in use that shared the same name. Rationalisation of monetary relations was part of the transformation from a pre-industrial to an industrial, capitalist economy.

From the 16th century, Sweden-Finland had two silver currencies, the main one based on the mark, which was equal to 8 öre or 192 penningar (pennies), and the other one based on the silver daler (dollar), with a floating exchange rate between them. The silver daler was an international coin and was minted in Sweden-Finland from 1534 (see Chapter 5). Additional currencies, based on silver, copper and gold, came into use in the following centuries.

1 For many insightful comments and suggestions, I want to thank especially Göran Ahlström, Claes Berg, Bo Franzén, Klas Fregert, Göran Hansson, Lars Jonung, Lars O Lagerqvist, Håkan Lobell and Johan Söderberg.

Figure 4.1 shows how the term 'daler' went through several semantic bifurcations in 1534–1873, giving rise to multiple types of monetary units with a historical origin in the silver daler of the 16th century. The first bifurcation occurred in the late 16th century between the silver daler as a coin with a stable silver content and the daler as a unit of account equal to 4 marks or 32 öre. The silver daler was termed slagen daler and later riksdaler (rix-dollar) and riksdaler specie, which continued to exist as a stable monetary unit up to 1873, with about the same fine silver content as the reichstaler according to the Leipzig convention of 1566 and later the Hamburger reichstaler banco. In the 17th century further bifurcations occurred for the terms daler and riksdaler.

In 1777 the riksdaler became the sole currency unit (if one disregards the gold ducat) but after only twelve years this mono-currency standard gave way to two different currencies, one based on the riksdaler banco and the other on the riksdaler riksgälds. When the riksdaler riksgälds was fixed at 2/3 riksdaler banco in 1803, the period of multiple currencies was essentially over. The riksdaler specie [i silver] and the ducat did continue to exist as separate currencies at a floating exchange rate but they were of minor importance as domestic currencies. However, it was not until 1873, when the gold standard was introduced and the riksdaler riksmynt was replaced by the krona as the main unit of account, that Sweden finally got a true mono-currency standard.

The geographic spread of Swedish currency is a challenging issue. The boundaries of the kingdom of Sweden changed during the period studied here (see map below). Finland was a part of Sweden until 1809, when it was conquered by Russia, so Finland's monetary history coincided with Sweden's in this period. The term Sweden-Finland is sometimes used to describe the kingdom of Sweden from the Kalmar Union up to the Napoleonic wars. Scania, Blekinge, Halland, Jämtland, Härjedalen and Gotland belonged to Denmark-Norway in the 16th century, but were conquered by Sweden during the course of the 17th century and are part of Sweden today. Sweden also had other possessions in this period, mainly in northern Germany and the Baltic region. The German possessions (for example, Swedish Pomerania, which is further discussed in Chapter 5) had their own monetary systems and did not usually use Swedish currencies. In 17th century Estonia, coins were minted according to the Swedish standard. Livonia, Estonia and Ingria were transferred to Russia in 1721.[2]

The main disposition of the chapter is chronological. Section 4.2 examines the period 1521–1624, section 4.3 the period 1624–1719, the first period with the copper and silver standard, section 4.4 the period 1719–76, and section 4.5 the period after 1776 when riksdaler became the main currency unit in Sweden-Finland. Section 4.6 summarises the main results.

Since the same monetary label could have different meanings in different circumstances and in different periods, most of the monetary terms in this chapter are not

2 Lagerqvist and Nathorst-Böös (1968, pp. 186–207).

translated into English because that could be misleading. For example, the Swedish currency unit 'daler silvermynt' could be translated into 'dollar silver coin' or 'dollar silver specie', which would give the impression of a dollar existing in the form of a silver coin. However, daler silvermynt was a unit of account in which copper plate coins were denominated as well. Furthermore, after around 1665, actual silver coins were counted in daler courant and daler carolin rather than in daler silvermynt (see Figure 4.1).

Both primary and secondary sources are used to estimate exchange rates between currencies.

Wallroth's *Sveriges mynt 1449–1917* (1918) presents data on the minting, fine metal content and exchange rates between monetary currencies in Sweden from the late Middle Ages to the First World War. Its data on the legally fixed relations between currencies in Sweden are readily accessible and have been used in this study. Its data on the market exchange rate for the riksdaler are used only when there are gaps in other sources. A problem with Wallroth's exchange rate data is that he does not always present his sources. For some periods he calculates the exchange rate between two coins on the basis of their fine silver contents. However, circulation by weight (i.e. in accordance with the coins intrinsic metal value) cannot simply be assumed (see Chapter 2).

Sveriges Riksbank (1931) presents annual exchange rates from 1740 onwards. The annual figures are calculated as averages of the daily market exchange rates in *Stockholm stads priscourant*[3] and *Post- och Inrikes tidningar* (some of these primary sources are missing today). These daily exchange rates were never published by the Riksbank, but are available in handwritten form at the Riksbank archive. This material also provides information on the daily market exchange rates in the period 1705–36.[4]

In his study on copper minting in 1624–1714, Wolontis (1936) presents monthly market exchange rates for the 17th century.

The Sandbergska samlingen at the Riksarkivet contains some important information on the exchange rates from the Middle Ages to the 19th century.[5] The material varies in quality but a check with other sources suggests that it is quite reliable.

Other sources have also been used and are discussed below.

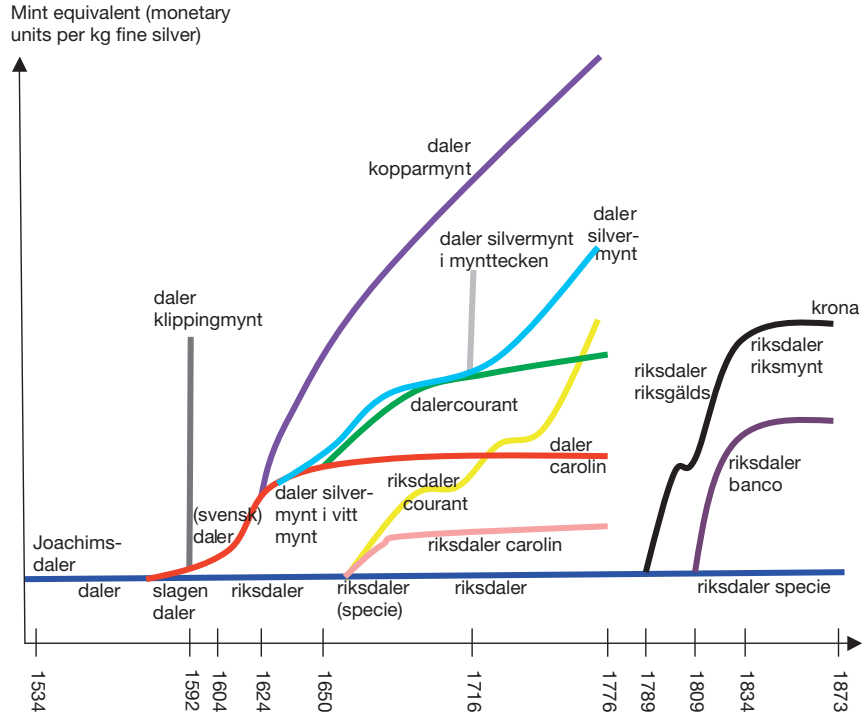
The further back in time one goes, the less reliable are the exchange rates. One

3 *Stocholms stads priscourant* were published weekly from the early 18th century. The first known issues are from 1705. Initially the prices were handwritten on pre-printed formulas, but from March 1740 the price courants were published as a numbered paper. See *Svenska folket genom tiderna: vårt lands kulturhistoria i skildringar och bilder. 5, Den karolinska tiden* (1939, p. 33).

4 Riksbankens arkiv, 'Växelkurser å Stockholms börs. Primärtabeller (1705–)/1740–1803' and untitled volume with exchange rates 1804–89.

5 Sandbergska samlingen, vol. O:1, O:2 and OO (Riksarkivet).

Figure 4.1. *The bifurcations of the term 'daler' 1534–1873.*



Note: This type of figure of semantic bifurcations has been proposed by Klas Fregert. The left scale is ordinal, and the differences between levels should not be interpreted as exact measures. Each colour denotes a particular monetary unit, though its name could change over time:
- Dark blue: Joachimsdaler/daler/slagen daler/riksdaler/riksdaler specie (1534–1873).
- Red: (svensk) daler/daler silvermynt i vitt mynt/daler carolin (1576–1776). Bifurcated from daler.
- Dark grey: Daler klippingmynt (1591–93). Bifurcated from (svensk) daler.
- Purple: Daler kopparmynt (1624/1633–1776). Bifurcated from (svensk) daler.
- Light blue: Daler silvermynt (1624/1633–1776). Bifurcated from (svensk) daler.
- Green: Daler courant (1650s–1776). Bifurcated from daler silvermynt i vitt mynt.
- Pink: Riksdaler carolin (1660s–1776). Bifurcated from riksdaler (specie).
- Yellow: Riksdaler courant (1660s–1776). Bifurcated from riksdaler (specie).
- Light grey: Daler silvermynt i mynttecken (1716–19). Bifurcated from daler silvermynt.
- Brown: Riksdaler banco (1789/1809-1855/1873). Bifurcated from riksdaler (specie).
- Black: Riksdaler riksgälds/riksdaler riksmynt/krona (1789–present). Bifurcated from riksdaler (specie).

Picture. The kingdom of Sweden around 1661.
Source: *Cambridge Modern History Atlas* (1912).

specific problem is that the reported exchange rates were not always relevant for the whole of Sweden and the regional differences could be considerable.[6]

Various methods are used to calculate central measures of exchange rate data.[7]

4.2. The period 1534–1624

Up to 1624, Sweden-Finland had a de facto mono-metallic silver standard (see Chapter 2), albeit with some deviations. Most notably, individuals did not possess the right to turn bullion into coins, i.e. free minting was restricted (see Chapter 2).[8] This was used by the Crown in attempts to raise the value of coins above their intrinsic metal value, and thus to increase seignorage from minting. These attempts could succeed only if the quantity of minted coins was restricted, which was done only in some periods and with limited success. The 16th century thus saw elements of an inconvertible currency, although it was not until the 18th century that such currencies were introduced on a larger scale.

In the period 1534-1624 there were two major debasement cycles: 1561–76 and 1590–93. Both coincided with a need to finance a war effort by increasing seignorage. Some of the inferior coins were called clippings because they were cut into a square form to speed up minting. After some delay, the value of the debased coins fell towards their intrinsic metal value. The two debasement phases were followed by recoinage and the reintroduction of better coins (with the same, or nearly the same, fine silver content as before the debasement). The face value of the debased coins was reduced.

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6 Hegardt (1975, p. 222).

7 When data are reliable, the geometric average is used, especially when annual averages are calculated from monthly data. The geometric average of data expressed as a percentage (mainly various premiums) is calculated by transforming the data into ratios, then calculating the geometric average of the data in ratio form, and finally transforming the average ratio into a percentage.

The advantages of a geometric average as opposed to an arithmetic average are the former's symmetry and the fact that exchange rates tend to change geometrically rather than arithmetically. For example, if an annual geometric average is calculated from the monthly data on *one pound in dollars*, the inverse of this value would be the same as the annual geometric average calculated for the monthly data of *one dollar in pounds* using the same data set. The arithmetic average does not gurantee such automatic equality. For example, say that during a year one pound is variously worth one and two dollars, respectively, during equal lengths of time. The arithmetic average exchange rate is 1.5 dollars per pound, and the inverse value is 0.667 pounds per dollar, which expresses the value of one dollar in pounds. However, calculating the arithmetic average of the exchange rate of one dollar in pounds (one dollar is worth one pound and half a pound, respectively), is 0.75 pounds per dollar. The geometric average is 0.707 pounds per dollar.

When data are less reliable, the median is used. The median is especially effective to eliminate extreme values. Occasionally, the arithmetic average is also used.

8 Heckscher (1935, vol. I:1, p. 202).

There were also two minor debasements in this period, in 1540 and 1604, but they were not followed (within the next 1–2 decades) by further debasements or recoinage and were therefore not part of a debasement cycle.

The two major debasement cycles followed the pattern in other countries. During the Great Debasement in England 1542–51, seignorage rose to as much as 57 per cent of government revenue, whereas the typical level under normal circumstances was less than two per cent.[9] Sussman and Zeira stress that in time people found ways to protect themselves from the consequences of debasement and debasement policy became less effective.[10] There was a limit to the extent to which the fineness of coins could be reduced. The lower the fineness, the greater the probability of recoinage. Expectations rose that the debased coins would be soon worth only their fine metal content. As a result, minting often declined towards the end of a debasement cycle.

Rolnick, Velde and Weber (1996) write that the profitability of debasement is still a puzzle. From empirical evidence that lags in prices and exchange rates due to debasement were, at most, only a matter of weeks, they concluded that gold coins circulated by weight (i.e. in accordance with their intrinsic metal value) and that silver coins did so, too, at least some of the time. However, they also find that minting and seignorage increased dramatically in the wake of debasement, which would be illogical if coins did indeed circulate by weight (at least under free minting). Peter Spufford similarly upholds, in relation to Medieval Europe, that when 'the debasements or strengthenings of a currency were very large, the exchange rates, as with modern devaluations, altered radically within weeks or even days'.[11]

In their study of the debasement cycles in France during the 14th and 15th centuries, Nathan Sussman and Joseph Zeira maintain that debasement was an effective instrument of public finance.[12] In everyday life, debased coins circulated by tale (i.e. in accordance with their face value), not by weight. This was so because determining fineness required the specialised assistance of silversmiths, which was costly.[13] As Sussman and Zeira put it: 'people did not go to an expert before each transaction at the marketplace, but they did go to an expert after a debasement to check which coins to remint'.[14] According to them, there was a lag of up to several years before the price level adjusted to debasement. While the mint price was disclosed, the mint equivalent (the nominal value minted from a fixed weight of a metal) was not necessarily known to the general public. This could be used in the short term to increase the mint equivalent much more than the mint price, and thus to increase the rate of

9 Velde, Weber and Wright (1999, p. 293).

10 Sussman and Zeira (2003).

11 Spufford (1988 p. 293).

12 Sussman (1993) and Sussman and Zeira (2003).

13 In his study of the Swedish Middle Ages, Hans Hildebrand (1983, p. 935) also argues that the general public was well informed about the weight of coins but not so about the percentage of fine silver.

14 Sussman and Zeira (2003, p. 1776).

seignorage (the ratio of the profit from minting to the mint price). Despite the high seignorage, merchants voluntarily provided the mint with more bullion than previously. The price level tended to follow the mint price rather than the mint equivalent, at least in the short term.[15]

In her study, Angela Redish concludes that the effect of undervaluation was ambiguous.[16]

The high seignorage rate during a debasement (which was typical[17]) partly constitutes a temporary deviation from free minting in the proper sense and introduces elements of a fiat standard. If debasement policy is successful, the debased coins, at least temporarily, de facto function as token coins. For example, assuming a gross seignorage rate of 300 per cent, when coins are converted into bullion, only 25 per cent of their nominal value is recovered.

In Sweden-Finland, there were periods when the fine silver content per unit of value of coins of lower denomination was lower than that of coins of larger denomination, which opened up for the possibility of a fluctuating exchange rate between coins of various denominations (so that one mark in coins of higher denomination could temporarily be worth more than 8 öre in coins of lower denomination, even though officially 1 mark = 8 öre). Such a multi-currency standard (see Chapter 2) probably existed temporarily in the early 1570s, early 1590s and a few years after 1604, but was more common later, in the 17th and 18th centuries.

Better coins minted earlier continued to circulate after the mint equivalent had been increased. The coins of King Gustav Eriksson (Vasa) (minted up to 1560) and King Erik XIV (minted 1561–8) continued to circulate in the last two decades of the 16th century. However, these older coins did not necessarily circulate by weight.[18] Loans were often paid back in the same coins (for example, silver daler or gold coins[19]) as those in which they were originally made, thus safeguarding the creditor from inflation. These are clear examples of a multi-currency standard and an economy where money was not fully a generalised unit of account.

15 Sussman (1993, pp. 55 and 61).

16 Redish (2000, p. 33).

17 Velde, Weber and Wright (1999, p. 292).

18 In 1576, 1.25–1.625 marks in the coins of King Erik XIV (Wallroth, 1918, p. 23) were exchanged for one mark in new coins. The exchange rate, 1.625 marks in coins of King Erik XIV for one mark in new coins, is also reported for 1583 (see *Vadstena stads äldsta tänkeböcker 1577–1610* (1952, p. 79). Coins of King Gustav Eriksson (Vasa) circulated after 1576 at their nominal value, despite having a higher silver content than the coins minted after 1576. According to one source, marks of King Gustav Eriksson (Vasa) were exchanged at half their nominal value in 1598 (*Vadstena stads äldsta tänkeböcker 1577–1610* (1952, p. 271), which was significantly below their intrinsic metal value.

19 One example of a loan in engelots can be found in *Stockholms stads tänkeböcker 1568–1575* (1941, p. 624).

Riksdaler coins from 1542 (top left), 1631 (top right), and 1829 (bottom). The silver daler minted in the 16th century was still valid as a means of payment three centuries later. Its fine silver content was stable but the purchasing power of metallic silver fell over time. In terms of what a male unskilled labourer could earn in Stockholm, one silver daler represented wages for around 12 days in 1542, around 6½ days in 1631 and around 3½ days in 1829. Photo: The Royal Coin Cabinet, Stockholm.

4.2.1. The first silver daler coins

It was during the 16th century that the first larger silver coins were minted, an indication that trade in larger volumes was becoming more common. So-called gyllen coins were minted in the 1520s but were superseded later by the daler coins.

The first daler coin was minted in 1534[20] after the German taler, which had been introduced in the late 15th century.[21] At first the fine silver content of one daler was 28.06 grams. From 1540 it was reduced to 25.6 grams, after which, with some minor changes, it had this stable silver content up to 1873 (when the krona was introduced).

From 1593 the slagen daler was also called riksdaler[22] (earlier the term riksdaler mainly referred to foreign coins) and this became the only label for these coins from the early 17th century.

The minted daler or riksdaler must be distinguished from the daler as the unit of account, which was set equal to 4 marks from the 1570s onwards. The daler as the unit of account depreciated continually relative to the riksdaler during the 17th and 18th centuries.

Later the term riksdaler also came to refer to various currency units of different values. A riksdaler with a stable silver content was named riksdaler specie.

The daler with a stable silver content is referred to here as a silver daler (daler/slagen daler in the 16th century, riksdaler/riksdaler specie in the 17th, 18th and 19th centuries). Since the fine silver content of a silver daler was stable over time, it provides a reference for prices to be expressed in grams of silver.

Several sources are used to estimate the exchange rate of the silver daler in marks in the period 1534–1624 (see Figure 4.3). When values differ in the course of a year, a median value has been calculated.[23] Some interpolations are made for years when no reliable sources are available, although most years could be covered.

In the 1530s, one silver daler was worth between 3 and 4 marks (see Table A4.7), which was in accordance with the theoretical exchange rate based on the silver contents of the two coins. In 1540 the silver content of both coins was reduced, but more for the mark coins.

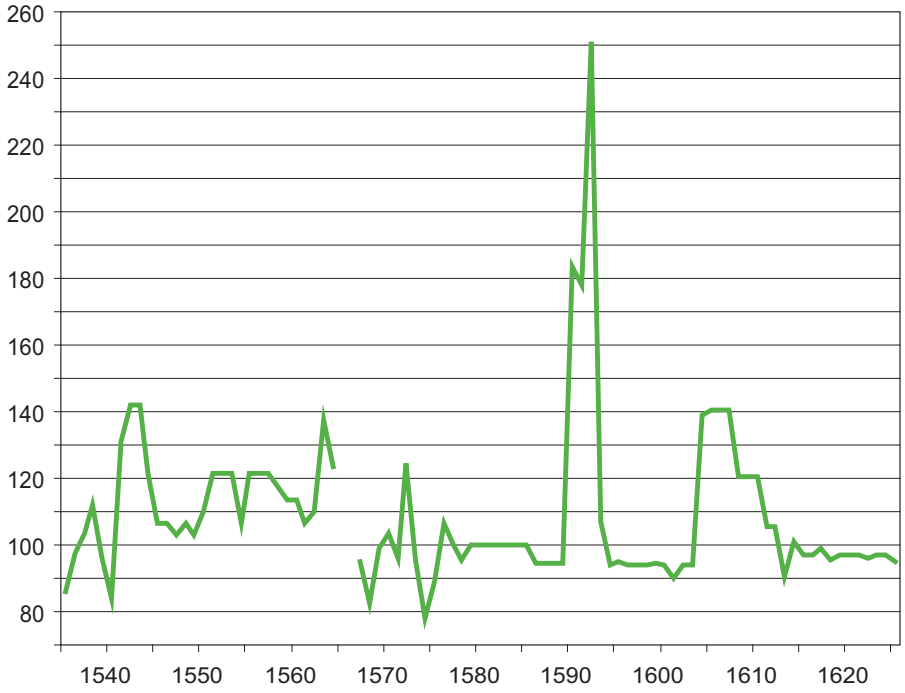
The Crown wanted the mark coins to circulate at the old exchange rate, but initially this failed. The exchange rate of the silver daler rose to 4–4.5 marks in the latter half of the 1540s (the theoretical exchange rate was 4.25 marks). King Gustav Eriksson complained about this. According to him, the exchange rate should have been 3 marks for one silver daler. A deliberate attempt was made to reduce minting. The mint in Svartsjö was closed in 1550 and in 1551–5 it seems that no coins were

20 Wallroth (1918).
21 Shaw (1895, p. 363).
22 Heckscher (1935, vol. I:1, p. 219).
23 Sandbergska samlingen, Riksarkivet, Heckscher (1935, pp. 211–2), Odén (1955), Odén (1960) and Wallroth (1918).

minted in Sweden-Finland.[24] The reduced quantity of minted coins partly had the desired effect. The exchange rate of the silver daler fell to 3.5–3.75 marks in the latter half of the 1550s, although not as low as the 3 marks desired by the king.

Figure 4.2 presents the value ratio (in per cent) of one gram fine silver in mark coins to one gram fine silver in silver daler coins. A value of 100 per cent denotes that the actual exchange rate of the mark was equal to the theoretical rate. A value above 100 per cent indicates that mark coins were overvalued in relation to silver daler coins, and that the seignorage rate was higher for mark coins than for riksdaler coins. Under circulation by weight, the value could fall somewhat below 100 per cent, as can be observed for some periods, since mark coins were more exposed to wear and tear and silver daler coins were used in international trade. Seignorage could be positive at a level slightly below 100 per cent, since the unminted silver was worth some-

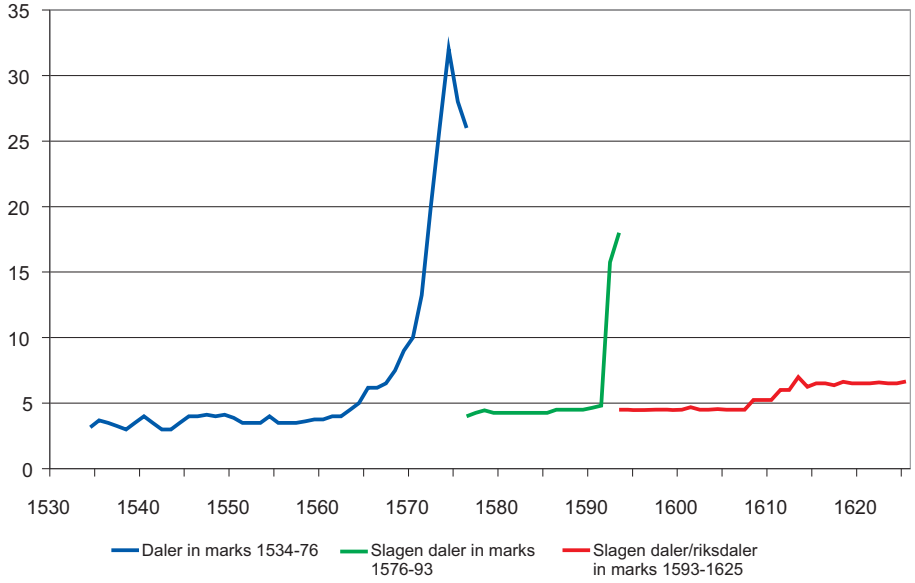
Figure 4.2. *Value ratio (in per cent) 1535–1625 of one gram fine silver in mark coins to one gram fine silver in riksdaler coins.*



Sources: Based on Table A4.7 and Wallroth (1918).

24 Lagerqvist (1995, p. 142).

Figure 4.3. *Daler/slagen daler/riksdaler i marks 1534–1624, market rate.*



Sources: See Table A4.7. Two breaks occur. In 1575/6, one new mark was exchanged for 6.5 debased mark coins. In 1593, one new mark was exchanged for 4 debased marks.

what less than silver in the form of silver daler coins. The figure shows that the amount of seignorage was significant in the periods 1541–60, 1590–92 and 1604–10, which coincided with debasements. However, the debasement in the early 1570s was probably not as successful in generating substantial seignorage to the Crown.

4.2.2. *The debasement cycle of 1561–76*

During and after the Northern Seven Years' War 1563–70 there was a continuous depreciation of the mark, causing rampant inflation. In 1561–62, one silver daler stood at 4 marks. In 1563 the rate stood at 4.5 marks, in 1566–67 at 6–7 marks, and in 1568 at 7–8 marks. The depreciation was worst after the war. Sweden had to pay a ransom of 150,000 daler for the Älvsborg fortress. The price of one silver daler was at most 32 marks, in 1574.[25]

Various measures were taken to enforce the face value of the coins and prevent the older, better coins from being melted down into bullion by others than the Crown. Although the Crown was initially able to exchange debased coins at par with the old coins (or at least at a better rate than suggested by their intrinsic metal content),[26]

25 Wallroth (1918, pp. 28–9 and 36–7).
26 Heckscher (1935, vol. I:1, p. 205).

prices and exchange rates quickly adjusted in response to debasement. The annual Consumer Price Index presented in Chapter 8 closely followed debasement.

A decision on 12th May 1575 enabled the public to exchange the debased coins for new, better coins. However, the exchange rate varied. While the official price of one silver daler was 4 marks in new money, it was 9.5–11 marks in coins of 1569, 13 marks in coins of 1570, and 26 marks in coins of 1571–74 (somewhat better than the market exchange rate in 1574).[27] Hence, at least towards the end of the debasement cycle, the various coins seem to have circulated by weight, not by tale.

Since coins were minted in 1571–74 on a much larger scale than in the previous period, it can probably be assumed that it was the coins of 1571–74 which dominated domestic trade (the Crown's exchange operations also reduced the supply of older coins). The value of the mark klipping-coin was later reduced to one öre (1/8 of a mark), i.e. below its official exchange rate in 1575 as well as its intrinsic metal value.

4.2.3. The daler becomes two different monetary units

The distinction between money as a unit of account and as a commodity (intrinsic value coins) increases the likelihood of terminological bifurcations of monetary units (see Figure 4.1).

After the inflation episode in the first half of the 1570s, King Johan III wanted the silver daler to equal 4 marks, but that could not be maintained. The fine silver content of one silver daler was 4.25 times the fine silver content of the mark coin. According to Birgitta Odén, it was in this period that the daler came to refer to two different currencies: the unit of account equal to 4 marks and the silver daler. Odén argues that Heckscher was wrong in claiming that these two different meanings of daler did not arise until the 1590s. Still, it was not until the 1590s that a substantial difference can be observed between prices expressed in slagen daler (minted daler) and in räknedaler (daler as unit of account).

In the second half of the 1570s and the early 1580s the silver daler stood at 4.25 marks (hence, 1 silver daler = 1.0625 räknedaler); the rate then increased to 4.5 marks in the late 1580s.[28]

4.2.4. The debasement cycle of 1590–93

The Northern Seven Years' War was followed almost immediately by a war with Russia, which continued up to 1595. After the introduction of the new mark, there was a period when the currency was quite stable. In the closing years of the reign of Johan III the value of the Swedish mark then deteriorated rapidly. The rampant

27 Wallroth (1918, p. 23).
28 Odén (1955, p. 241).

inflation caused much confusion and confidence in money weakened. The exchange rate between the silver daler and marks was probably varied, depending on the coins in which the mark was counted.

According to Wallroth, in 1592 the exchange rate for one silver daler rose to 38 marks in one-mark coins and to 84 marks in ¼-öre coins.[29] The difference can be explained by the much lower silver content of the ¼-öre coin per unit of value relative to coins of higher denominations. However, Wallroth does not refer to any empirical sources. His exchange rates for 1592 rather seem to be based on the fine silver metal contents of the minted coins (a method he uses elsewhere in his work), not on prevailing market rates.[30] In the present study, no empirical sources have been found to support such high exchange rates. Therefore, Wallroth's assumptions for 1592 are not used.

The empirical material gives a somewhat confusing picture of prices and exchange rates in the early 1590s.

The price material, for example in *Handlingsräkenskaperna*, often indicates a remarkable stability in the early 1590s, which suggests that the debased coins were accepted at their face value and did not cause any substantial inflation. However, Birgitta Odén argues that the prices in *Handlingsräkenskaperna* in 1591–93 are fictitious, since they were used as the basis for barter trade to register relative prices between goods.[31] The old price level could, therefore, be retained, in spite of the rampant inflation when it came to actual monetary transactions.

Although minting shows that the debased coins dominated circulation compared to coins minted earlier,[32] according to Eli Heckscher, most trade during the height of monetary disarray in the early 1590s was probably conducted by barter or was discontinued, since people no longer trusted the coin as a means of exchange. Barter trade was also common under normal circumstances.[33]

In 1593 and 1594 the inferior coins were exchanged for new coins. As in 1575, the rate varied between different debased coins (see Table 4.1). However, whereas in the mid-1570s debased coins were exchanged largely in accordance with their intrinsic metal value, in 1593–94 they were exchanged at a much better rate than their fine silver content implied. The fine silver content of the most inferior klipping-mark in 1592 was almost one-tenth of that of the new silver mark minted in 1593, but it was devalued to ¼ of the face value. It was not until May 1594 that the klipping mark

29 The minting statistics show that mark coins probably dominated circulation over coins of the lowest denomination.

30 Wallroth (1918, pp. 44–5). The fine silver content of the round one-mark coin was 0.6758 gram, the one-mark klipping coin 0.6473 gram, and the ¼-öre coin 0.0095 gram. Since the fine silver content of the one-daler coin was 25.5957 grams, the exchange rate based on relative silver contents would be 37.9 marks in round one-mark coins, 39.5 marks in mark klipping coins and 84.2 marks in ¼-öre coins.

31 Odén, (1960, p. 207).

32 Wallroth (1918, p. 42–7).

33 Heckscher, (1935, vol. I:1, p. 82).

was devalued further, to ¾ öre (=3/32 mark), in accordance with its fine silver content.[34]

In 1593, confidence in money had not yet been restored. According to *Stockholms stads tänkeböcker,* klipping coins as well as proper coins were often rejected as payment.[35]

The debasement in the early 1590s could be seen as an attempt, in an emergency, to de facto introduce token coins that were supposed to circulate by tale. The attempt to de facto introduce a fiat currency was initially successful. Price regulations were imposed to ensure this. In January 1591, King Johan III solemnly promised that one year later the debased coins would be exchanged at their full nominal value in better coins.[36] According to Eli Heckscher, arguing against a 'metallic viewpoint' that the value of money is completely determined by its intrinsic metal content, the attempt only failed because too many of the inferior coins were minted. He therefore insists that the quantity theory of money is of some relevance for explaining inflation in the 16th century.[37]

There was a time lag before debasement affected prices and exchange rates. *Stockholms stads tänkeböcker* is filled with reports of high prices and exchange rates in 1592, but there are none in 1590 or 1591.

At a meeting between the King's representatives and the commons on 5th June 1592, it was announced that the mark klipping coin would be reduced to two öre (¼ mark), in accordance with the prevailing market rate, and that prices would be freed. Next day, however, the decision was revoked and it was decreed that the mark coin must be accepted at its full face value. A few days later traders were urged to sell at better prices and prices were imposed on beer and bread but the traders refused to conform.[38]

It is likely that during the second half of 1592 the exchange rate stabilised at four debased marks for one mark in proper (older) coins, and that inflation during the debasement cycle in the early 1590s amounted to not more than 300 per cent, not 800 per cent (or more) as suggested by the silver content of the debased coins. For example, there is a report from July 1592 that iron was sold for 24 daler per ship pound in debased coins, but would be paid for at 6 daler per ship pound in older, better coins.[39]

Since the exchange rate of the debased coins, even at its lowest in 1592, was more than twice their intrinsic metal value, they continued to de facto function as token coins up to 1593 or early 1594. This is a clear difference from the debasement cycle of 1561–76. One explanation could be that the earlier debasement cycle was more

34 *Stockholms stads tänkeböcker från år 1592* (1939, part I, 1592–95, p. 218).
35 *Stockholms stads tänkeböcker från år 1592* (1939, part I, 1592–95, p. 118).
36 *Stockholms stads tänkeböcker 1589–1591* (1948, p. 239).
37 Heckscher (1935, vol I:1, p. 227).
38 *Stockholms stads tänkeböcker från år 1592* (1939, part I, 1592–95, pp. 51–3 and 63).
39 *Stockholms stads tänkeböcker från år 1592* (1939, part I, 1592–95, p. 72).

Table 4.1. *The official conversion rates for various domestic currencies 1534–1624.*

Date	Official conversion rates	Assumption in this study
1568	1 ungersk gyllen = 1.5 slagen daler 1 krongyllen = 1.25 slagen daler	
12/5 1575	1 daler = 4 marks in new money (valid up to 1589) 1 new mark exchanged for 6.5 marks in coins of 1571–74 1 new mark exchanged for 3.25 marks in coins of 1570 1 new mark exchanged for 2.375–2.75 marks in coins of 1569 1 new mark exchanged for 2.125 marks in coins from Vadstena of 1568 1 new mark exchanged for 1.25–1.625 marks in coins of King Erik XIV 1 mark of coins of King Gustav Eriksson (Vasa), no change in nominal value* After 6/3 1576, for klipping coins not exchanged previously: 1 new mark = 8 marks in klipping coins	1 new mark = 6.5 old marks
12/1 1593	1 new mark = 4 marks in 1-mark- and 2-öre coins of 1591 and 1592 (1-mark klipping reduced to 2 öre already on 8/12 1592) 1 new mark exchanged for 2 marks in ½-öre coins of 1591 and 1592 1 new mark exchanged for $1^1/_3$ mark in coins of 1590 (including gold coins), and 2-mark and 1/2-mark coins of 1591 and 1592 1 new mark = 1 mark in coins minted before 1590 1 (Swedish) daler = 4 marks (unit of account used up to 1776) 1 silver daler (slagen daler) = 4.5 marks = 1.125 Swedish daler 8/5 1594, 1 mark klipping further devalued to ¾ öre.**	1 new mark = 4 old marks
22/3 1604	1 (Swedish) daler = 4 marks (valid up to 31/12 1776)	
1607	1 riksdaler = 4.5 marks = 1.125 daler	
7/9 1619	1 riksdaler = 52 öre = 6.5 marks = 1.625 (Swedish) daler (valid up to 16/8 1633)	

Sources: Wallroth (1918), *Kulturhistoriskt lexikon för nordisk medeltid från vikingatid till reformationstid* (1956–78), Sandbergska samlingen (Riksarkivet), Lagerqvist and Nathorst-Böös (1968) and Franzén (2006).

* According to a royal decree in January 1575. See *Stockholms stads tänkeböcker 1568–1575* (1941, p. 544).

** *Stockholms stads tänkeböcker från år 1592*, part 1 (1939, p. 218).

protracted, so that agents had more time to come to terms with the true value of the inferior coins.

4.2.5. The minor debasement in the early 17th century

In the period 1593–1604 one silver daler was roughly equal to 4.5 marks. In 1604 the silver content of the mark coin was reduced. According to Wallroth,[40] this led to the exchange rate of one riksdaler being 6 marks from 1604 onwards. However, according to the Sandbergska samlingen, one riksdaler was worth 4.5 marks as late as 1610. Wallroth's 'metallistic' assumptions must again be questioned. In 1607, the official value of the riksdaler was fixed at 4.5 marks.[41] The exchange rate probably rose gradually from 4.5 marks to 6 marks in this period. For example, in *Stockholms stads tänkeböcker*, an exchange rate of 5 marks and 2 öre for one riksdaler is reported for early 1608.[42] Such a rate suggests circulation neither by weight nor by tale, but something in between. Rather than being immediate, the adjustment of the exchange rate was probably a drawn-out process lasting several years.

In this study it is assumed that the exchange rate of the riksdaler was 4.5 marks up to 1607, 5.25 marks in 1608–10, and 6 marks in 1611 (see Table A4.7).

One reason for the exchange rate's slow adjustment after 1604 was that the new, lighter two-öre and one-öre coins did not come into circulation on a sizeable scale until 1608 and 1609.[43] It is possible that in the period 1605–9 the exchange rate for a riksdaler in mark coins differed from that in öre coins. It must be borne in mind that it was the öre coins which dominated money supply. It is also possible that the new mark coins were accepted initially at the same or almost the same face value as the older mark coins and thus at significantly above their intrinsic metal value.

4.2.6. Gold coins

The circulation of gold coins in Sweden-Finland in the period 1534-1624 implied that there was not a pure silver standard. However, since domestic transactions were overwhelmingly conducted in mark silver coins, the monetary standard should be described predominantly as a monometallic standard in this period (see Chapter 2).

The first gold coin minted in Sweden-Finland was the ungersk gyllen. It was struck in 1568-1573.[44] Another gold coin, minted in 1569-1573 and 1598-1599, was the krongyllen.[45] The fine gold content of one ungersk gyllen was 4.1245 grams

40 Wallroth (1918, p. 60).
41 Sandbergska samlingen (Riksarkivet), O:1 , folio 1434.
42 *Stockholms stads tänkeböcker från år 1592* (1963, vol. VI, 1605–08, p. 302).
43 Wallroth (1918, pp. 62–3). The 2-öre coins were minted on a small scale in 1605 and then annually from 1608 onwards. The lighter one-öre coins were not minted until 1609.
44 Tingström (1972, p. 77).
45 Forssell (1872, pp. 84–8).

and of one krongyllen 3.0395 grams. One ungersk gyllen was equal to 1.5 silver daler and one krongyllen to 1.25 silver daler. Since the fine metal content of one silver daler was 25.5957 grams, this would imply that the gold-silver (value) ratio during the 1570s was 9.31:1 based on the ungersk gyllen and 10.53:1 based on the krongyllen. According to one source, one ungersk gyllen was equal in value to 1⅔ daler in 1570 or the late 1560s,[46] implying a gold-silver (value) ratio of 10.3, which is closer to the estimated value ratio based on the krongyllen.

Alongside the ungersk gyllen and krongyllen, various other foreign gold coins circulated in Sweden-Finland in the second half of the 16th century.[47] The rosenobel was valued at around 4 silver daler, the engelot around 2.25 silver daler, the crona around 1.25 silver daler, the ducat 1.4–1.7 silver daler, the double ducat around 3.25 silver daler, the Rhine golden (rhensk gyllen) 0.75–1 silver daler, and the portugalös 12–15 silver daler.

In 1589–92, 1603 and 1606–26 gold coins were minted in the mark denomination, some of them as clippings since they were clipped in square form. The round gold coins struck in 1606–24 had a fine gold content of 0.303 grams per mark, and the klipping gold coins 0.285 grams per mark in 1610–11 and 0.273 grams per mark in 1626.[48] Since the silver mark at the time had the fine silver content of 4.05 grams, this would imply a gold-silver (value) ratio of 13.4-14.2 to 1 in 1606–24 and 14.8:1 in 1626. In comparison, the ratio was around 1:15 in the second half of the 17th century and the 18th century. Also the international gold-silver (value) ratio (see Chapter 2) shows a significant increase between the late 16th century and the mid 17th century.

4.3. The period 1624–1719

In 1624 the first copper coins were minted in Sweden-Finland. These were intrinsic value coins, since their face values were supposed to follow the values of their copper contents. From then on, Sweden-Finland had (to a greater or lesser extent) a combined copper and silver standard. This ended in 1777, when the sole silver standard was reintroduced. One reason for introducing copper coins was to manipulate the price of copper. Sweden was the dominant international producer of copper. When copper prices were low, it was thought that they could be increased by reducing copper exports and minting a large amount of copper coins for domestic circulation.

When the copper coins were introduced in 1624, the price of copper was high. After a few years, the price fell. In the late 1620s, copper coins were minted on an extremely large scale, so that they tended to fall towards their intrinsic metal value. However, the öre minted in silver also depreciated relative to the riksdaler, while the mark coin did not fall as much.

46 *Stockholms stads tänkeböcker 1568–1575* (1941, p. 96).

47 See Forssell (1872, pp. 86–7) and Sandbergska samlingen (Riksarkivet), O:1, folio 61.

48 Wallroth (1918).

During the first two decades of the copper standard, all copper coins were denominated in öre. Copper plates were struck in higher denominations from 1644 onwards.

A decision on 26th August 1633 reduced the official value of the öre copper coins by 50 per cent.[49] This gave rise to two different counting systems: one in daler silvermynt (daler silver coins), abbreviated d.s.m., and the other in daler kopparmynt (daler copper coins), abbreviated d.k.m. In 1633 the relation was: 1 d.s.m. = 2 d.k.m. 1 daler = 4 marks = 32 öre in the respective system.

In 1643 the copper öre coins were devalued by a further 20 per cent (for example, the one-öre copper coin from before 1633 was devalued to 2/5 öre silvermynt, while the copper coin minted as one öre silvermynt in 1635–41 was devalued to 4/5 öre silvermynt). Hence, 1 d.s.m. = 2.5 d.k.m.

In 1665 the copper coins were devalued by a further 1/6, so that 1 d.s.m. = 3 d.k.m. This was the last reduction, which lasted until 1776.[50]

The disinction between daler/mark/öre silvermynt and daler/mark/öre kopparmynt constituted a system of account and did not necessarily indicate whether the payments were made in coins of copper or of silver. In fact, some petty copper coins were minted in the denomination of öre silvermynt, while all copper plates were minted in the denomination of daler silvermynt.

When payment was made in actual silver coins, the terms 'daler/mark silvermynt in specie' or 'daler/mark vitt mynt' (daler/mark white coins) were often used initially.[51] From the 1660s, the term carolin came to refer to actual silver coins in mark denomination and the term courant to actual silver coins in öre denomination. One carolin was equal to two marks in actual silver coins, and one daler carolin to 4 marks in actual silver coins or to two carolins. One öre courant was the same as one öre in actual silver coins, and one daler courant was equal to 32 öre courant. In some periods, the öre courant was in fact equal to öre silvermynt, but in other periods the equality could not be upheld.

4.3.1. The currency units in Sweden-Finland 1624–1776

From around the mid-17th century up to 1776, Sweden-Finland de facto had five or six different currencies, three based on silver, one or two based on copper and one based on gold. There were some periods when additional currencies were in use.

From the 16th century there were three different types of currency based on silver: 1) silver daler/slagen daler/riksdaler (specie), 2) mark/carolins (1 carolin = 2 silver marks) and 3) öre.[52] Although 1 mark = 8 öre was maintained as an accounting identity, it was not valid between coins for all periods. Moreover, the fine silver con-

49 Stiernstedt (1863, p. 109).
50 Wallroth (1918, p. 57).
51 Hegardt (1975, p. 226).
52 Wolontis (1936, p. 183).

tent of 8 öre in silver coins in öre denomination was normally lower than the fine silver content of one mark in silver coins in mark denomination. In 1681 the mark coins were revalued relative to öre coins and this put an end to the equality between one daler carolin and one daler courant.

Copper coins also de facto formed two different systems, one in petty coins of lower denominations (termed 'slantar') and the other in copper plates of higher denominations.[53] After 1680, the mint equivalent became higher for petty coins than for copper plate coins. The difference was quite small in the late 17th and early 18th centuries (most likely motivated by the petty copper coins' higher production costs per unit of value), but became significant from 1719 onwards. Before 1719, both petty copper coins and copper plate coins (disregarding the coin tokens of 1716–9) could be described as intrinsic value coins, but after 1719 this was true only for copper plates.[54]

Alongside copper and silver coins, there were coins minted in gold. In a sense, there was a monetary standard based on three metals (trimetallism, at least de jure). The main minted gold coin after the mid 17th century was the ducat (imported ducats were already circulating in Sweden in the Middle Ages). The ducat was minted in Sweden in the period 1654–1868 (in foreign provinces also in earlier years). The legal value of the ducat was fixed in the mid-1660s. The exchange rate between the ducat and the riksdaler fluctuated but roughly followed the change in the gold-silver (value) ratio. Throughout the period, one ducat was worth about twice as much as one riksdaler.[55] The total amount of ducats minted was quite small. In the 18th century ducats probably did not account for more than a tiny fraction of the total minted stock.[56]

In addition, foreign coins were still used in domestic transactions, but their role declined in the course of the 17th century.[57]

How could this multi-currency system exist for so long and why did not one of the currencies replace the others, as suggested by Gresham's law?

Milton Friedman and Anna Schwartz point out that 'Gresham's law, that cheap money drives out dear money, applies only when there is a fixed rate of exchange between the two', and that the law has been misunderstood and misused because this requirement is often forgotten. For example, because greenback and gold dollars in the 1860s were not interchangeable at a fixed rate, the former did not drive out the

53 Davidson (1919, p. 121).

54 Stiernstedt (1863, pp. 418–9) and Talvio (1995, p. 203).

55 Wallroth (1918). The main source for the ducat's exchange rates before 1740 used in this study is the Sandbergska samlingen. In Wolontis (1936, p. 167), monthly exchange rates are available for 1686.

56 Own calculations based on Wallroth (1918).

57 Heckscher (1936, vol. I:2, pp. 638–9).

A one-ducat coin from 1668, the year in which the Riksbank was founded. One ducat contained 3.4 grams of fine gold and was equivalent in 1668 to a male unskilled labourer's pay for around 12 days' work in Stockholm; it could buy around two hectolitres of grains or 14 kg of butter.
Photo: The Royal Coin Cabinet, Stockholm.

latter and they could coexist for a time.[58] A premium (agio) on dear money allows it to stay in circulation.

Arthur Rolnick and Warren Weber go further and argue that while Gresham's Law relies on the 'existence of a fixed rate of exchange that is different from the market price', they 'have found no evidence that such a fixed rate of exchange ever existed, and that is not surprising since it is hard to believe it ever could exist'.[59] According to them, this does not imply that cheap money never drives out dear money, but it cannot constitute a law. There are transaction costs involved in using the dear money at a premium. Rolnick and Weber's hypothesis is that cheap money drives dear money out of circulation when the transaction costs involved in using the dear money as a means of payment at a premium are significant. Without such transaction costs, cheap money would never drive out good money. Since coins of small denominations are more expensive to use at a non-par premium than money of large denominations, it is often petty coins that are driven out of circulation, not coins of higher denominations.[60]

The relation between market and legal values is somewhat complicated. For example, a premium can reflect the costs involved in the exchange market. That is

58 Friedman and Schwartz (1963, p. 27).
59 Rolnick and Weber (1986, p. 186).
60 However, it should be taken into account that hoarding petty coins is more costly per unit of value than hoarding coins of higher denominations.

why exchange rates should be calculated as the average of the buying and selling rates, but information on these two types of rate is seldom available for earlier times. The premium on better coins could reflect other circumstances than the value relations of various currency units. For example, in Sweden-Finland in the 18th century, the high cost of transporting copper plates as means of payment resulted in a discount (negative premium) on copper plates. Copper plate coins, which were of higher denominations, therefore tended to be driven out of circulation (exported) when undervalued due to high copper prices.

The Swedish multi-currency standard was based on different systems of account. Debts in one type of currency had to be paid back in the same currency. Stockholm Banco, and later the Riksbank, had to be liquid in all domestic currencies.[61] Eli Heckscher argues that this was so because the monetary system was not fungible, an example of an economy based on self-subsistence and payments in kind.[62] Money existed as several types of commodity, and was not fully all-purpose money. Even when undervalued, various coin currencies were not driven out of circulation, since they could not be substituted within their sphere of circulation by other coin currencies.

In Sweden-Finland, it was during this period of multiple currencies circulating alongside each other that the fiat standard arose. The existence of several currencies based on the same precious metal presupposes a large 'fiat component' of the coins' face value (see Chapter 2). A very small fiat component, due to free minting, would in effect lead to fixed exchange rates between monetary units based on the same metal.

For the 1620s and '30s, annual exchange rates between domestic currencies are presented in Swenne (1933), although the figures are not very reliable for every year. Monthly exchange rates for the riksdaler exist for the period 1640–86[63] and are presented in Table A4.1. Monthly exchange rates for carolins and öre courant exist for the period 1670–81 and for 1686;[64] they are presented in Table A4.2 and Table A4.3.

4.3.2. The relation between copper and silver

While there is constant pressure for depreciation under a mono-metallic standard, in some respects the pressure is even greater under a bimetallic standard. With the latter, changes in the relative prices of the two metals imply that after some time, coins of one of the metals become undervalued. Angela Redish points out 'that undervaluation in a bimetallic standard could be removed either by depreciating the undervalued metal or by appreciating the overvalued metal. Yet in virtually all instances it was

61 Heckscher (1936, vol. I:2, p. 607) and Davidson (1919, pp. 117–20).
62 Heckscher (1936, vol. I:2, p. 638).
63 Wolontis (1936, pp. 167 and 310–1), and Sandbergska samlingen, O:1, folios 1475–88.
64 Wolontis (1936, pp. 167 and 313–4).

the former that occurred.'[65] This is especially relevant when analysing the double copper and silver standard in Sweden-Finland 1624–1776. There are also stabilising factors underpinning bimetallism. For example, when gold became cheaper relative to silver in the 1850s and 1860s, France, which was on a bimetallic standard at the time, absorbed more than half of world's total production of gold, thus counteracting the fall in the gold-silver (value) ratio.[66]

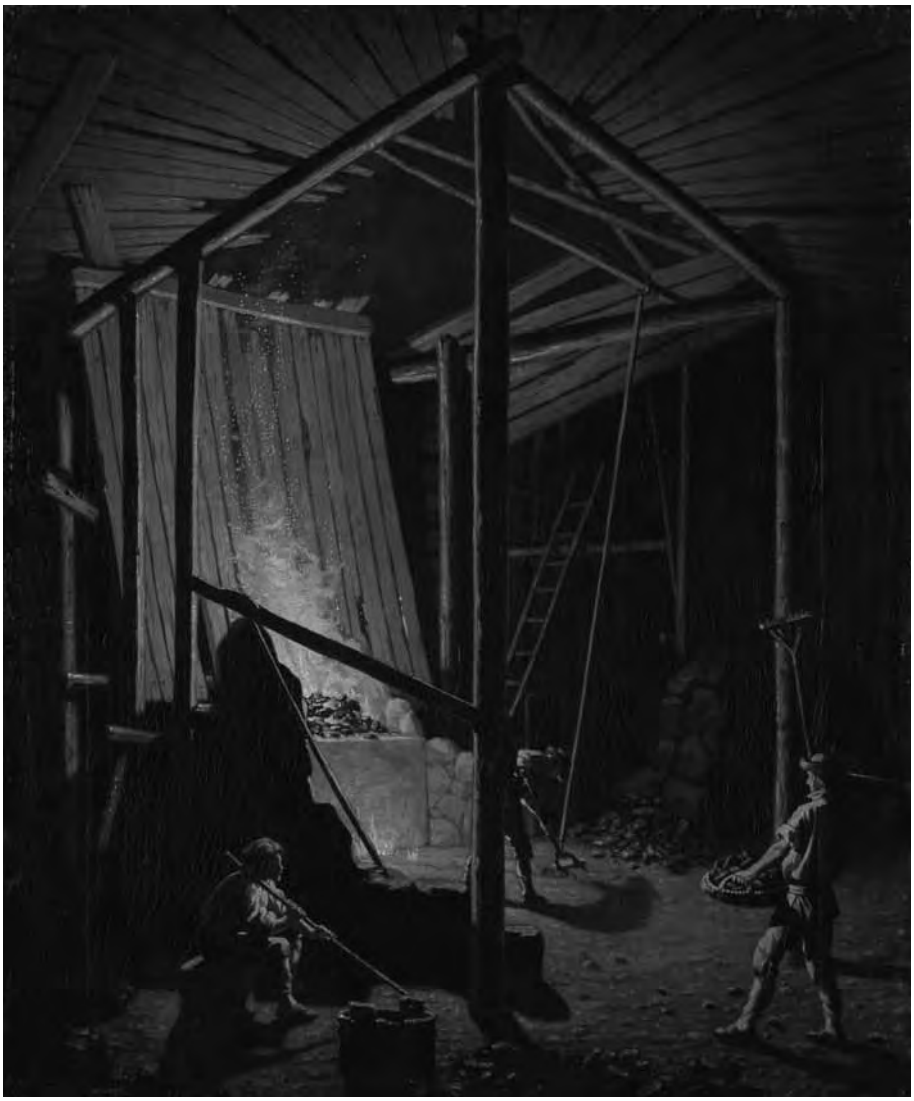
Although both silver and copper coins circulated widely in trade, in the period 1624–1776 the metals alternated as the official basis of the main currency unit. It was copper in 1624–33, silver in 1633–44, copper in 1644–64, silver in 1664–74, copper in 1674–81, silver in 1681–1709, copper in 1709–66 and silver in 1766–76.[67] In 1716–19 and 1745–76 there was de facto a fiat standard. See Chapter 2.

Wolontis questions the view that the alternation between the official silver and copper standards in the period 1624–1714 can be attributed to changes in the price of copper relative to silver, i.e. that high copper prices brought about a silver standard (since copper coins would then be driven out of circulation) and low copper prices brought about a copper standard (since silver coins would then be driven out of circulation). Other factors were also at work, according to him.[68]

The exchange rate between silver and copper coins was not fixed and it fluctuated during most of the period. Sweden's monopoly position in the copper market entailed that the price of copper could be affected by policy measures (not necessarily always profit maximising in the short-term) and was therefore not an independent variable. The relation between different currencies changed not only because the price of copper fluctuated relative to silver but also because the mint equivalent (the nominal value minted from a ship pound of copper or silver) of various coin currencies changed, too. In the 17th and 18th centuries, the mint equivalent of copper plates was increased on numerous occasions, mostly as a consequence of temporary increases in the price of copper. When the copper price subsequently fell, copper plates became overvalued, which was adjusted by increasing either the mint equivalent of silver coins (mainly öre coins) or the official value of existing silver coins relative to copper coins.

Minting was to a large extent conducted on government account.[69] Free minting did not apply to copper, so no upper bound existed for the price of copper money. The minting volume of private copper could be large but its maximum quantity was always predetermined.[70] In 1660, the (net) seignorage tax (slagskatt) on the minting of private copper was increased significantly, almost to the level of various charges on

65 Redish (2000, p. 33).
66 Friedman (1990, pp. 89–91), and Jevons (1875, Ch. xii).
67 Wallroth (1918, pp. 59 and 93).
68 Wolontis (1936, pp. 185–9).
69 Davidson (1919, pp. 125–6).
70 Heckscher (1936, vol. I:2, p. 606).



Copper Foundry at the Falun Mine*, by Pehr Hilleström the Elder (1732–1816).*
Source: Nationalmuseum.

shipping copper abroad.[71] Because free mining was restricted, there were periods when the face value of copper plate coins was significantly above their intrinsic metal value.

Free minting did apply, at least in some periods, to some silver and gold coins. To stimulate minting of silver and gold coins, in 1664 the (net) seignorage tax (slag-

71 Wolontis (1936, p. 133).

skatt) was abolished for them (except for silver coming from the Sala silver mine). No written permission was required to deliver silver and get silver coins in return. This did not apply to 1-öre and 2-öre silver coins, which contained less fine silver per unit of value than the carolins. In 1709, a restriction was imposed so that only one third of the silver delivered to the mint would be minted into 5-öre silver coins, while the other two-thirds would be seen as a loan to the Crown at 6 per cent interest.[72]

One problem is the existence of more than one market price for copper. There are also many gaps in the time series of the various copper prices.

Most notably, free and unfree copper differed in price and did so substantially after 1655. Their quality did not differ, only their legal status. Unfree copper that was shipped abroad was subject to various duties, while free copper was exempt from these taxes. Private copper was usually unfree.

Furthermore, the price of Swedish garcopper in Amsterdam was usually substantially higher than the free copper price in Stockholm, which can be explained by the high costs of transportation and the risks involved (which could account for 10–15 per cent of the price in Amsterdam). The difference varied. The higher the international price relative to the price of free copper, the stronger was the incentive to export copper from Sweden-Finland. Copper plate coins were usually exempt from duties when exported, except in the periods 1655–62 and 1666–73 (although the duties on copper plate coins were then lower than for unfree copper). There were also periods when the export of copper plate coins was banned, which led to additional transaction costs if copper plate coins were smuggled abroad.[73]

Furthermore, a fourth copper price could be estimated based on copper plate coins. For the period 1624–1715, such a price in riksdaler per ship pound of copper plates is calculated by Josef Wolontis from the exchange rate of the riksdaler and the mint equivalent of copper plates. This price is a measure of the value of copper plate coins as a means of exchange. For example, in 1677 the price of unfree copper was 36 riksdaler (specie) per ship pound, of copper plate coins 45.9 riksdaler per ship pound and of free copper 50 riksdaler per ship pound. The price of Swedish garcopper in Amsterdam in that year was 64.9 riksdaler per ship pound.[74] The price difference in Amsterdam between Swedish copper coin (plates) and Swedish garcopper was insignificant.[75]

In theory, the price of copper plate coins should be highly correlated with the prices of free copper in Sweden and garcopper in Amsterdam (with a deduction for transaction costs, including duties and smuggling costs in some periods). In reality,

72 *Nordisk familjebok* (1913).

73 Wolontis (1936, pp. 26–8 and 199).

74 Wolontis (1936, pp. 234, 244, 319 and 325). The mint equivalent of copper plates was 100 daler silvermynt per ship pound, while the riksdaler stood at 26.16 mark kopparmynt or 2.18 daler silvermynt (see Table A4.7). 1 ship pound copper = 136 kilograms.

75 Wolontis (1936, p. 193).

the prices of free copper in Sweden and garcopper in Amsterdam fluctuated sharply compared to the price of copper plate coins in Sweden. For example, while the Amsterdam copper price was very low in the early 1650s, the price of copper plate coins in riksdaler did not fall, and copper plates became worth much more as means of payment than as copper metal for export.[76]

With the exception of the 1760s and '70s (during the fiat standard at the time), the price of copper plates as means of payment was probably never below the unfree copper price (which would have induced the melting down of copper plates for domestic use). Thus, when there was a de facto metallic standard, copper plate coins were always worth more as means of payment than as copper for domestic use. When taken out of circulation, copper plate coins were almost exclusively either exported or saved as treasure.

4.3.3. The period 1624–33

During the period 1624–33, the copper coin was officially the main currency unit, although there was de facto a multi-currency (copper and silver) standard since silver coins circulated alongside copper coins at a floating exchange rate.

Although initially at the par rate of 6.5 marks (52 öre) per riksdaler, the value of öre kopparmynt soon fell. The market exchange rate of one riksdaler rose from 6.5 marks in copper coins in 1624, 1625 and early 1626 to 8 marks in late 1626, fell back to 6.5 marks in 1627 and increased to 9 marks in early 1628, 10 marks in late 1628 and 1629, and 14 marks in 1630–33 (see Figure 4.5 and Table A4.7).[77] These fluctuations are too large to be explained by the fluctuations in the copper price. Although the price of copper was high in 1624–25, the market value of copper öre in those years was significantly above the intrinsic metal value. In other words, the copper coins initially circulated by tale rather than by weight.

The öre silver coin fell in value against both the riksdaler and the mark coin. The öre in silver metal fell far below its intrinsic metal value, which is somewhat puzzling. If the value of öre silver coins had fallen to their intrinsic metal value, one riksdaler would have increased to 7.9 marks in one-öre silver coins. Instead, the riksdaler increased to as much as 12 marks in one-öre silver coins in 1631.[78]

One reason for the fall in the value of öre coins in silver was that the towns of Kalmar, Göteborg and Norrköping were given permission to mint their own öre silver coins in 1623, 1625 and 1626, respectively. These coins contained less than the stated amount of silver and were therefore declared invalid as means of payment as of 1st February 1632.[79] Another explanation could be that the excessive minting

76 Wolontis (1936, pp. 194–209).
77 Wolontis (1936, pp. 66–76).
78 Swenne (1933, p. 193).
79 Tingström (1995, p. 185).

Sweden adopted a copper standard in 1624. In 1625, the 2 öre kopparmynt (left) weighed around 60 grams and was the equivalent of around two hours' wages for a male unskilled labourer in Stockholm. It could buy around 0.25 kg of butter or four litres of grains. Right, various copper coins minted in the late 1620s and recovered from the Vasa, a Swedish warship that sank in 1628.
Photo (left): The Royal Coin Cabinet, Stockholm.
Photo (right): Swedish National Maritime Museum, Stockholm.

of copper coins in particular overcame the previous shortage of means of payment, which also affected the value of öre silver coins.[80]

The mark silver coin also fell in value relative to the riksdaler but not as much as the öre silver and copper coins.

Two kinds of öre copper coins were minted: klippings and round coins. In the late 1620s the copper klipping fell into disrepute and there was a premium on the round copper coin relative to the klipping coin. A decision to withdraw the klipping coin from circulation was taken on 12th January 1629 but it was exchanged at par for round copper coins with a percentage reduction.[81]

The relation between öre silver and copper coins seems to have been one-to-one at least up to 1628. After that the value of the öre copper coin fell more than that of the öre silver coin. Already in 1629 there were fluctuations in the exchange rates between the four main currencies in Sweden-Finland: öre silver and öre copper coins, mark silver coins and the riksdaler.

80 Wolontis (1936, pp. 94–5).
81 Wolontis (1936, p. 71).

4.3.4. The period 1633–44

During the period 1633–44 the silver coins were officially the main currency unit. However, Josef Wolontis argues that it was the copper coins that de facto dominated money supply, not least since the minting of copper coins was much larger than the minting of silver coins.[82]

A decision on 26th August 1633 officially devalued the öre copper coins by 50 per cent. The official value of one riksdaler was reduced to 48 öre silvermynt, i.e. 6 marks silvermynt (or 12 marks kopparmynt), from 6.5 marks previously.[83] However, the market exchange rate for the riksdaler was higher than 12 marks kopparmynt, namely 13–14 marks in the period 1634–39 and 15 marks in 1640–44.

The source material is not entirely reliable concerning the market exchange rate between copper and silver coins in the 1630s and '40s. For example, 'mark silvermynt' could refer either to the accounting unit (equal to 2 marks kopparmynt or ½ daler kopparmynt) or to actual mark coins in silver.[84] The relation 1 daler silvermynt = 2 daler kopparmynt seems to have been upheld at least up to 1639,[85] implying a de facto bimetallic standard. Silver coins, especially mark coins, became undervalued.[86] However, in the early 1640s, it seems that silver coins circulated by tale in some meetings and with a premium in other meetings (although not necessarily in full proportion to their weight). It is also possible that öre silver coins were more likely to circulate by tale than mark silver coins, although this cannot be confirmed from any sources.

On 24th March 1643 the official value of one riksdaler was increased to 15 marks kopparmynt, in accordance with the market rate.[87] At the same time the value of one daler silvermynt was increased a second time, to 2.5 daler kopparmynt. Thus the official value of öre and mark silver coins increased relative to the copper öre coins, the purpose being to reestablish the fixed relations that in theory should underpin bimetallism.

82 Wolontis (1936, p. 98).

83 Stiernstedt (1863, p. 109).

84 This is not fully considered in Swenne (1933, p. 190), in his account of the exchange rate of the riksdaler in mark silver coins.

85 According to Sandbergska samlingen (Riksarkivet), OO, folio 612, one riksdaler in 1639 stood at 7.5 marks in 'hwit mynt' (white coins). In copper coins one riksdaler stood at 14–15 marks kopparmynt.

86 In the early 1640s the riksdaler stood at around 7.5 marks (60 öre) in silver coins. The fine silver content of the riksdaler coin was 6.12 times higher than the fine silver content of the one-mark silver coin. The theoretical exchange rate based on the fine silver content of öre coins was 6.84 marks (55 öre) per riksdaler.

87 Stiernstedt (1863, p. 119).

Queen Christina, portrait by David Beck in 1650.
Source: Nationalmuseum.

4.3.5. The period 1644–64

In 1644–64 the copper coins were officially the main currency.

The first copper plates, minted in 1644, had the denomination 10 daler silvermynt and weighed 19.7 kg. These plates were mainly exported and not used as means of payment in domestic trade. The minting of copper plates was suspended in 1645, only to be resumed in 1649.[88] From then on, copper plates were also minted in lower denominations (1, 2, 4 and 8 daler silvermynt) that could be used more effectively as means of payment in domestic trade. At the same time the mint equivalent of copper plate coins (but not round copper coins) was increased by 14 per cent, which led to an increase in the exchange rate of the riksdaler during the 1650s, especially towards the end of the decade.

The mark and öre silver coins seem to have been at par with the copper coins at least up to 1655, notwithstanding a large fall in copper prices 1650–2. Copper prices were quite high in 1654 and 1655. After the mid-1650s there was a premium on the öre and mark silver coins relative to the copper coins.[89] The premium for mark silver coins was probably somewhat higher than for öre silver coins, but no reliable source for this could be found for the 1650s. The de facto bimetallic standard was transformed into a de facto multi-currency standard.

Due to higher copper prices, the mint equivalent was further increased in 1660 for both copper plates and round copper coins. The increase was so large that it led to subsequent increases in the riksdaler's exchange rate as well as in the premiums on mark and öre silver metal coins. The old copper coins minted at a lower mint equivalent were exported and largely disappeared from circulation, creating a shortage of money. There was also a premium on these coins.

When Stockholms Banco was established in 1657, with Johan Palmstruch as its director, large amounts of old copper plates of the mint equivalent before 1660 were deposited there. In 1661–4 the Bank therefore clipped the deposited copper plates to accord with the new higher mint equivalent established in 1660 and made huge profits from this operation.[90] This rather unusal way of increasing seignorage from debasement is an interesting example of how money as an abstract unit of account needs to be distinguished from money as a physical object circulating as means of payment.

In 1661 Stockholm Banco began to issue the first bank notes, partly in order to overcome the shortage of money that resulted from the increased mint equivalent in 1660. Initially, the bank notes were quite popular with the public, since they were more convenient means of payment than the metal coins (in particular the heavy copper plates). There was even a small premium on the notes relative to metal coins. The notes probably did not account for more than 10–20 per cent of the total money supply (according to Palmstruch, the total amount of issued notes was 2.7 million

88 Wolontis (1936, p. 114).
89 Wolontis (1936, p. 108).
90 Wolontis (1936, pp. 126–130).

Stockholm Banco, forerunner of the Riksbank, issued the first bank notes in Europe in 1661. The picture shows a bank note issued five years later with the nominal value of 100 daler silvermynt. In 1666, 100 daler silvermynt was what a male unskilled labourer could earn in Stockholm for around 340 days' work (equivalent to half a million SEK in the early 21st century) and could buy around 360 kg of butter, 9 oxen or 47 hectolitres of grains, i.e., it was a very large sum of money.
Photo: The Royal Coin Cabinet, Stockholm.

daler kopparmynt), although the circulation velocity of notes was most likely higher than that of copper plates. This was sufficient to reduce the value of the notes, although the discount was never more than 8–10 per cent. When the bank continued to exchange notes at their par value, note-holders made a run on the bank. Notes then became inconvertible in 1664. The Riksdag (the Diet of the Estates of the Realm) decided to withdraw the notes. This was done at their full value. The Riksdag took over Stockholms Banco and re-established it in 1668 as the Riksbank, the world's oldest central bank. After that, no bank notes were issued in the rest of the 17th century.[91]

91 Heckscher (1936, vol. I:2, pp. 629–30), and Wolontis (1936, pp. 130–3).

4.3.6. The period 1664–81

In 1664–74 silver coins were officially the main currency, although there was de facto a multi-currency, copper and silver standard.

On 7th October 1665, the official value of one daler silvermynt was increased for the third time, now to 3 daler kopparmynt, which was in accordance with the market exchange rate. This was a consequence of the previous increases in the mint equivalent of copper coins. The official value of one riksdaler was increased from 48 öre (6 marks) to 52 öre (6.5 marks) in silver metal coins,[92] and from 15 to 19.5 marks kopparmynt, although that was still below the market exchange rate. The official value of one ducat was set to 100 öre silvermynt, i.e. 1 ducat ≈ 1.923 riksdaler. Since the fine silver content of one riksdaler was 25.2739 grams and the fine gold content of one ducat was 3.3966 grams, the derived value ratio of gold to silver would be around 1:15, which was in accordance with the prevailing ratio in the international markets.

Even before the riksdaler's appreciation to 52 öre in 1665, there was a difference between a riksdaler expressed in different types of silver coin, i.e. between a riksdaler in actual specie coins, in mark silver coins equal to 6 marks and in öre courant equal to 48 öre. For example, in 1662, when the riksdaler's official value was 15 marks kopparmynt, the market value of one riksdaler in specie was 18.25 marks kopparmynt, of one riksdaler in mark silver coins 17.25 marks kopparmynt and of one riksdaler in 'smått mynt' (petty coins or öre courant) 17 marks kopparmynt.[93] After 1665, the practice of counting a riksdaler in 48 öre or 6 marks in silver coins continued, even though the official value of the riksdaler specie was increased to 52 öre or 6.5 marks in silver coins. A riksdaler equal to 6 marks in silver coins, or 3 carolins, was termed a riksdaler carolin (1 riksdaler carolin = 1.5 daler carolin). The term riksdaler courant was also used but up to 1681 it could probably refer to either 48 öre courant or to 3 carolins (further investigation is needed on this issue). This can cause some confusion.

The mint equivalent of copper plates was further increased in 1674, following high copper prices in the previous years. In the period 1674–81 the plate copper coins became the official currency unit, but de facto a multi-currency standard was in place, since there was a premium on both carolins and öre courant. Copper prices began to fall from 1674. Since the mint equivalent of petty copper coins was not increased until 1680, in the second half of the 1670s there was also a premium on round copper coins relative to copper plates, at least in some regions.[94]

Very few riksdaler coins were minted after the reign of Queen Christina, which ended in 1654. Only 791 riksdaler were minted in 1676, 2344 in 1707 and 9943 in

92 Stiernstedt (1863, p. 153).
93 Sandbergska samlingen, O:1 , folio 262.
94 Wolontis (1936, p. 159).

1713,[95] i.e. altogether no more than 13,078 riksdaler during a 60-year period! No exact figures are known, but a guesstimate is that maybe up to one million riksdaler coins had been minted during Queen Christina's reign.[96] The riksdaler coins of Queen Christina contained less fine silver, 25.2739 grams, than the coins minted from 1676 onwards, which contained 25.6973 grams of fine silver. However, since the riksdaler coins of Queen Christina probably continued to dominate circulation in the late 17th and early 18th centuries, the assumption in this study is that the riksdaler coin contained 25.2739 grams of fine silver in 1639–1718, and 25.6973 grams in 1719–1830.

The exchange rate on Swedish riksdaler can be compared with the exchange rates on two other types of rix-dollar, the Hamburger reichstaler banco and the Amsterdam rijksdaalder courant, which were the most quoted foreign currencies in Sweden in the 17th and 18th centuries (see Chapter 5).

In the period 1660–81 the median price of one Amsterdam rijksdaalder courant (estimated spot price) was 0.961 Swedish riksdaler. Since one Amsterdam rijksdaalder contained 24.35 grams of fine silver and one Swedish riksdaler 25.27 grams, the theoretical price should have been 0.963 Swedish riksdaler for one Amsterdam rijksdaalder courant, i.e. only 0.2 per cent above the actual median price during the period in question. This is a clear indication of relatively efficient markets.

In the latter half of the 17th century, the Swedish riksdaler's exchange rate seems to have been almost equal to the exchange rate on Hamburg, which is not surprising since the silver contents of the two currency units were almost identical.

4.3.7. The period 1681–1709

The silver standard was officially reintroduced in 1681 and lasted until 1709. Silver coins de facto became the main means of payment. On 19th March 1681, the official value of one riksdaler was increased from 19.5 to 24 marks kopparmynt, of one ducat to two riksdaler, and of one carolin from 6 to 7 marks kopparmynt. On 15th May 1686 one carolin was further increased to 7.5 marks kopparmynt, in accordance with the prevailing market exchange rates. However, the market exchange rates of the riksdaler and the carolin against copper coins implied that the copper plates had become undervalued in relation to the international price of copper.[97] When the official relations between silver coins and copper plates were adjusted to the market exchange rates, the undervaluation of copper plates (in terms of the international bullion price) became legally fixed. Copper plates became dear money, and in the coming period were exported and disappeared from circulation. There are also

95 Wallroth (1918).

96 In the year 1652 alone, 117,908.5 riksdaler were minted in riksdaler coins. This level was not surpassed until 1769. See Wallroth (1918).

97 Wolontis (1936, p. 161).

reports of a premium on copper plates in the late 18th century (for example, 8 per cent in 1697).[98]

One öre silvermynt continued to be equal to three öre kopparmynt, implying that the official value of one carolin was increased from 16 to 18⅔ öre silvermynt in 1681 and to 20 öre silvermynt in 1686. It was further increased to 25 öre silvermynt in 1716. One daler carolin (equal to two carolins or 4 marks in carolins) was no longer officially equal to one daler silvermynt or one daler courant. Up to 1681, the fine silver content per unit of value of the öre courant was 15 per cent below the fine silver content per unit of value of the carolin. This was recognized in the market exchange rate between courant öre coins and carolins. The increase in the official value of the carolin in 1681 therefore simply recognized the market situation, ensuring a stable relation between the two silver currency units. When the official value of one carolin was increased to 20 öre silvermynt in 1686, the fine silver content of the öre silver coin was simultaneously reduced, in order to retain the relation 1 daler silvermynt = 1 daler courant = 3 daler kopparmynt.

In 1686 there was still a premium on öre silver coins; it was somewhat higher for the 4-öre silver coin than for the 2-öre silver coin.[99] This premium disappeared during the course of the next two decades as the fine silver content of the newly minted öre coins was decreased[100] and the silver coins replaced the copper plates as the main currency.

The widening difference between the two silver currencies, daler carolin and daler courant, from the 1680s onwards was a consequence of the bimetallic copper and silver standard, and the attempt to make öre courant follow the copper currency, while not debasing carolins.

After 1681, the riksdaler courant and the riksdaler carolin definitely became two different units of account. After the legal appreciation of the carolin to 7.5 marks in 1686, the difference between the two units became quite large.[101] In 1686–1716, one riksdaler carolin was legally fixed to 22.5 (3 times 7.5) marks kopparmynt or 60 (3 times 20) öre silvermynt. This was 25 per cent above the level of one riksdaler

98 See footnote 104.

99 Wolontis (1936, p. 167).

100 The 5-öre silver coin that was minted from 1690 had the same fine silver content as the previous 4-öre silver coin; 4-öre coins were also reminted into 5-öre coins. See Wallroth (1918) and Wolontis (1936, p. 168).

101 Wolontis (1936, p. 156) argues that the two units 'riksdaler carolin' and 'riksdaler courant' were the same, both equal to 3 carolins, but this can be questioned. For example, there are two examples in Sandbergska samlingen, one from 1690 (Sandbergska samlingen, O:1, folio 774) and the other from 1697 (Sandbergska samlingen, O:1 , folio 779) where 1 riksdaler courant is set equal to ¾ riksdaler specie and to 1.5 daler silvermynt. This presupposes that 1 riksdaler courant is equal to 48 öre courant (which also confirms that the market rate was at par with the legal rate in the 1690s). Wolontis (1936, p. 156) quotes the same source, stating that 'effter som här i landet gemeligen plägar förstås RD courant till 6 m Smt', but here '6 m Smt' most likely refers to 1.5 daler silvermynt, not 3 carolins.

courant equal to 48 öre courant. Lars Herlitz writes that during the 18th century, at least in various official documents, the riksdaler courant became a pure unit of account, equal to 1.5 daler silvermynt (i.e. 48 öre silvermynt), and thereafter ceased to be linked to the courant coins. The term was used only sporadically after the mid-18th century.[102]

According to Wolontis, the market exchange rate of one riksdaler carolin was 22.5 marks kopparmynt or 60 öre silvermynt, its par value, throughout the period 1695–1709.[103] In this study it is assumed that no premium existed on carolins and öre courant throughout the period 1687–1715.[104]

According to Wolontis, in 1686–95 the exchange rate on Swedish riksdaler as well as on Hamburger reichstaler banco was quite stable at around 25 marks kopparmynt.[105] The riksdaler coins circulating in the late 17th and early 18th centuries were mainly those that had been minted during the reign of Queen Christina (and to a large extent also foreign taler coins).[106] The Riksbank's holdings of riksdaler specie decreased from 134,000 in 1696 to a few thousand in the 1710s.[107]

Stockholms stads priscourant contains weekly exchange rates for various currencies for the period 31st May 1705 to 9th February 1707.[108] These show that the Hamburger reichstaler banco (at 26.75–27.75 marks kopparmynt[109]) was valued at slightly above the Swedish riksdaler specie (at 26–26.5 marks kopparmynt).[110]

One explanation for the higher exchange rate of foreign currencies could be the greater demand on Sweden to finance its war efforts during the Great Nordic War 1700–21.[111] The exchange rate of the riksdaler specie also fluctuated around a nar-

102 Herlitz (1974, p. 127).

103 Wolontis (1936, p. 176).

104 In Sandbergska samlingen, O:1, folio 1780, one document reports that, in 1697, 1 riksdaler was sold for 72 to 73 öre silvermynt, i.e. 27–27⅜ marks kopparmynt, but for 25 marks kopparmynt in copper plates. However, copper plates had largely disappeared from domestic circulation in the late 1690s, and the only copper coins that were widely used were those of smaller denominations. Furthermore, in 1697 the riksdaler also stood higher than usual.

105 Wolontis (1936, pp. 175 and 322).

106 Of the coin treasures found for the period 1701–21, the few riksdaler coins (a total of 11 coins) were from the reigns of Gustav II Adolf and Queen Christina. Moreover, the foreign taler coins were more numerous than the Swedish riksdaler coins. No findings of riksdaler coins are reported for the period 1722–38. Mint treasures are often good indicators of which coins circulated during the time when the treasure was laid down (which can often be determined by the coin with the latest year of minting). See Sarvas (1969).

107 Sveriges Riksbank (1931, p. 35).

108 Riksbankens arkiv, 'Växelkurser å Stockholms börs. Primärtabeller (1705–)/1740–1803'.

109 Direct data; the spot rate would be slightly higher.

110 In December 1708 the exchange rate of the Hamburger reichstaler-banco was 27 marks and of the Swedish riksdaler specie 26.25 marks. See Sandbergska samlingen, O:1 , folio 335 (Riksarkivet).

111 Wolontis (1936, pp. 174–5).

rower band (0.5 marks kopparmynt) than the Hamburger reichstaler banco (1 mark kopparmynt).

The par value for the riksdaler stood at 24 marks kopparmynt, which was significantly lower than both the market exchange rate of the riksdaler and the Hamburger reichstaler banco. Since the carolins had become the main currency unit, at least from the 1690s onwards, the mark kopparmynt as a unit of account was linked to carolins. One riksdaler in specie was officially 3.2 carolins, which, in turn, had the fine silver content of 23.11 grams, 8.6 per cent below the fine silver content of one riksdaler in specie. Based on these relations of fine silver contents, a currency linked to the carolin motivated an exchange rate for the riksdaler specie of 26.25 marks kopparmynt. The average exchange rate of one riksdaler was also raised from 25 marks kopparmynt around 1690 to 26.25 marks kopparmynt in the early 18th century, almost exactly in accordance with the theoretical exchange rate. Given there was free minting of carolins, such circulation by weight is an expected outcome of an efficient market.

4.3.8. The reintroduction of the copper standard in 1709

During the period 1709–66 Sweden-Finland was officially on a copper standard, although a fiat standard was in place in 1716–19 and 1745–76. In 1710, copper plates were again minted on a larger scale. In a longer perspective this had a profound effect on the monetary system in Sweden-Finland and stimulated the rise of fiat monies. In this respect, there is some similarity with the effect of the introduction of copper plates in the 1640s and 1650s, which subsequently led to the issuing of the first bank notes in Europe in the 1660s.

When the minting of copper plates on a larger scale was resumed in 1710, the mint equivalent was increased. However, in the early 1710s the price of copper rose substantially from the previous decade. Copper plates became dear money and tended to be driven out. When the export of copper plates increased, it was temporarily banned in 1713–14.[112] On 17th May 1715 it was decided that copper plates would be revalued by 50 per cent, which required a stamp.[113] Copper plates once again became cheap money, and were more valuable as means of payment than as metal for export.

4.3.9. The experiment with token coins in 1716–9

Towards the end of the Great Nordic War, 1716–9, the monetary system was in disarray as a result of several changes, most notably the circulation of token coins, called 'nödmynt' (emergency coins) or 'mynttecken' (coin signs or coin tokens).

112 Wolontis (1936, pp. 180–1) and Tingström (1984, p. 48).
113 Hegardt (1975, p. 229).

The coin tokens minted in 1716–9 were de facto fiat money. The value of the copper metal from which these coins were minted was only 0.5 to 1 per cent of their face value.

From an international perspective, this was not the first instance of token coins being used to replace commodity money. For example, the metal value of the copper coins minted in the Spanish Low Countries in 1543 was around 20 per cent of their face value.[114] The debased coins that circulated in Sweden in the early 1590s also partly functioned as token coins (see section 4.2). Although the bank notes issued by Stockholm Banco in the 1660s were non-metallic money, they never came to dominate the money supply and mainly functioned as convertible fiduciary notes. Only briefly did they circulate as inconvertible fiat notes before being exchanged at their full value.[115]

Various measures were taken to ensure the use of coin tokens by the general public and to draw in proper money to the State. A decision on 20th December 1717 made the old carolins invalid as means of payment and exchanged for coin tokens,[116] but they were reinstated as legal means of payment on 18th April 1719. To replace the old carolins, the 'Görtz' carolin' was minted in 1718 with a lower fine silver content and a face value of 16 öre silvermynt (instead of 25 öre silvermynt), the old official value of the carolin (before 1681).

By a decree of 23rd April 1719, the circulated coin tokens valued at one daler silvermynt (32 öre silvermynt) were redeemed for another type of token coin, 'Hoppet' (The Hope), valued at 2 öre silvermynt, and a note worth 14 öre silvermynt that would be exchangeable later at its full value.[117] The exchange was carried out in June 1719. This implies that the coin token worth one daler silvermynt was in effect devalued by 50 per cent. In practice the devaluation was larger, since not all notes were exchanged at their full value (although a majority of them were repaid later on) and the value of the devalued coin tokens continued to depreciate. Despite this, the assumption in this book is that for 1719, the following relation holds: 1 daler silvermynt in coin tokens = ½ daler silvermynt in proper money (see also the construction of the Consumer Price Index in Chapter 8).

Initially the coin tokens did not significantly disturb the monetary system and were even welcomed for being easy to handle. Later, however, they contributed to inflation. During most of the period with coin tokens, the premium on better coins (mainly copper plates and öre courant) was less than 15 per cent, and only for a few months or half a year did it rise above 50 per cent.

According to Gösta Lindeberg, the premium was 4–8 per cent in the second half of 1716, 6–12 per cent in the first half of 1717, 12–36 per cent in the second half,

114 Sargent and Velde (2002, p. 228).
115 Heckscher (1936, vol. I:2, p. 634).
116 Wallroth (1918, p. 92).
117 Stiernstedt (1853, pp. 320–8).

2–5 per cent in the first half of 1718, 12–14 per cent in July–October 1718, and 20–80 per cent in October–December 1718.[118]

According to Hegardt, in January 1719 the Uppsala Academy sold rye for 26 marks kopparmynt per barrel when paid in copper plates, but for 40 marks when paid in coin tokens, implying a premium of 67 per cent on plates. Mixed grain was sold for 18 marks kopparmynt when paid in copper plates and 24 when paid in coin tokens, implying a premium of 33 per cent.

Although monthly exchange rates are not available for the late 1710s, there are some sources for monthly prices. One problem is that the sources can report prices in either proper coins or coin tokens, without explicitly stating which.

The best source for following monthly prices during this period is probably for Göteborg, found in the minutes of the city's Board of Commerce.[119] Figure 4.4 presents a weighted monthly price index for Göteborg based on 18 goods.[120] The index rose continually from July 1718 to March 1719 and then dropped 61 per cent from March to April 1719. The only reasonable explanation is that there was a change in the currency unit in which prices were expressed, from coin tokens up to March 1719 to proper coins in April.

Another source from Göteborg, the accounts of the hospital,[121] shows that butter was purchased for 16 öre silvermynt per Swedish pound (skålpund, equal to 425 g) from 27th January 1719 (12 öre silvermynt 22nd January) to 11th May the same year; from 27th May, butter was bought for 6 öre silvermynt, i.e. a 62 per cent reduction, which corresponds almost exactly to the change in the index based on the prices reported in the minutes of the Board of Commerce.

Both these sources indicate that the premium on better coins continued to increase in the early 1719 and may have been as much as 150 per cent in March to May that year, higher than implied by the official 50 per cent reduction of coin tokens announced in April 1719. This is an expected result, since the devaluation of the emergency coins, as explained above, was de facto greater than 50 per cent.

Another source of monthly prices is from Falun, where the salesman Erik Sjöberg sold rye for 36 marks kopparmynt per barrel in September 1718, February 1719 and March 1719, for 40 marks kopparmynt in May 1719 and for 48 marks kopparmynt in December 1719. Since this is in complete contrast to the concurrent change in monthly prices in Göteborg, it is highly likely that the prices in Falun were expressed throughout the period in proper coins rather than token coins.[122]

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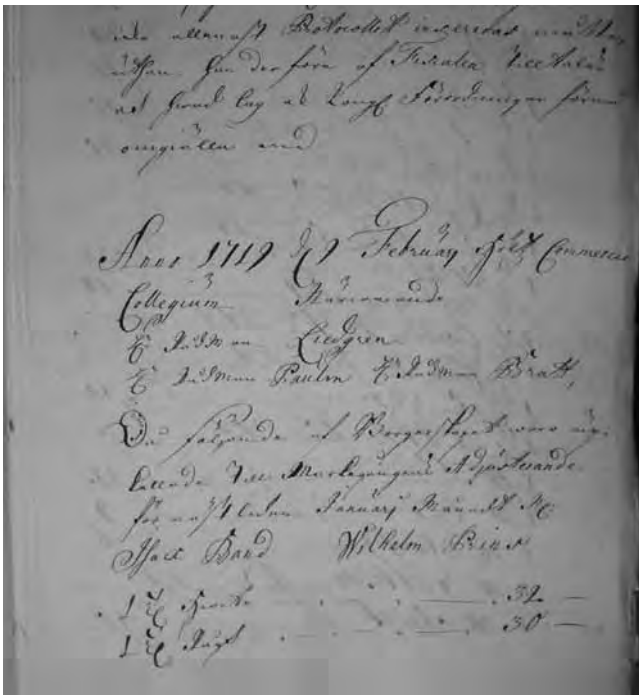
118 Lindeberg (1941, pp. 114, 146, 195 and 223).

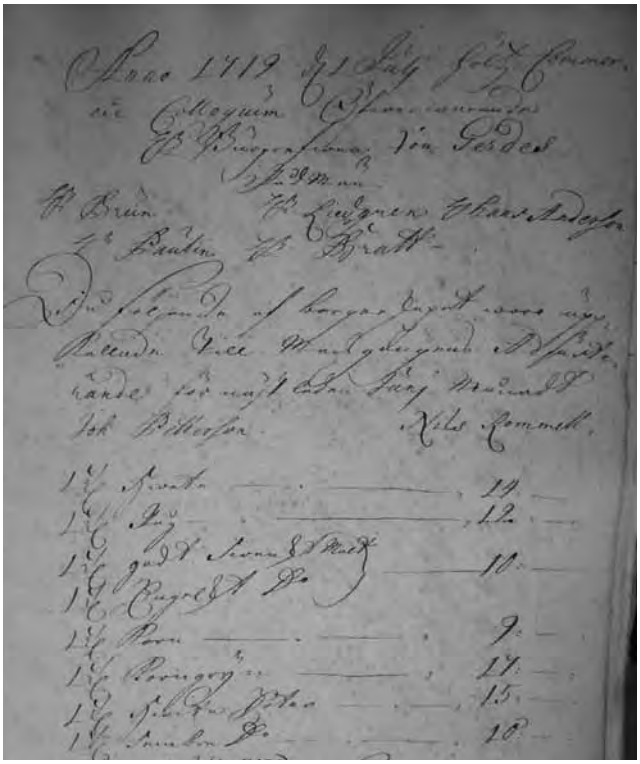
119 Göteborgs rådhusrätts och magistrats arkiv före år 1900, Signum L:I (Kollegiernas protokoll), vol. 4–6, Göteborgs landsarkiv.

120 The 18 goods are: wheat, rye, malt, barley, oats, peas, barley groats, meat, fish, salt, butter, cheese, pork, tallow, hops, twist tobacco, bread and beer.

121 Göteborgs rådhusrätts och magistrats arkiv före år 1900, Signum G:d (Handlingar angående hospitalet), vol. 20 and 22, Göteborgs landsarkiv.

122 'Priset på spannmålen i Fahlun från 1716 til 1723 inclusive, av Erik Sjöberg" in Äldre Kommissioner (Riksarkivet), 408, vol. 6, p. 390.





Price notations in Göteborg in 1719, at the end of the Great Nordic Wars, showing the effect of inflation and the ensuing devaluation of coin tokens. Top, prices in January 1719 at the height of the circulation of coin tokens. Bottom, prices in June the same year, when the coin tokens had been replaced by proper coins. As can be seen, prices for wheat and rye more than halved between these two months (from 32 to 14 daler kopparmynt per barrel for wheat and from 30 to 12 daler kopparmynt per barrel for rye), which corresponds to the devaluation of the coin tokens.
Sources: Göteborgs rådhusrätts och magistrats arkiv, Signum L I (Kollegiernas protokoll), vol. 4–6, Göteborgs landsarkiv.

The coin tokens officially circulated at their full value up to early June 1719. Thereafter they circulated at a reduced official value of 2 öre silvermynt. The problem of exchange rates did not disappear after mid-1719. The face value of the coin tokens was reduced but was still too high. The market value of coin tokens was well below 2 öre silvermynt after June 1719.[123] All these factors may have contributed to the high prices in late 1719.[124] The effect was probably greatest on prices for smaller transaction volumes. According to a decree from 4th May 1719, coin tokens at the reduced value of 2 öre silvermynt were to be accepted up to the sum of 10 daler silvermynt, and above this 10 daler per 100 daler.[125]

In 1719–20 large amounts of coin tokens were reminted to 1 öre kopparmynt (i.e. 1/3 öre silvermynt). Finally, on 18th February 1724 the face value of coin tokens still in circulation was officially reduced to 1 öre kopparmynt,[126] which was probably in accordance with the market rate.

In addition to the coin tokens, there were notes called 'myntsedlar' (coin notes) which circulated in the same period and fell in value even more than the coin tokens. According to Stiernstedt, these notes lost most of their credit worth. For example, Danish prisoners-of-war almost starved to death because the notes for their maintenance could not buy anything.[127]

For the period 1715–19, and particularly for 1718, it is especially difficult to calculate a mean exchange rate of the riksdaler in mark kopparmynt. The problem is partly connected with whether the mark kopparmynt is expressed in coin tokens or in copper plates. When the metal content of new copper plates was reduced by one third and the face value of old copper plates was increased by 50 per cent in 1715, the riksdaler was considered to be valued at 36 marks kopparmynt. However, it was not until 29th December 1718 that the official value of one riksdaler was changed to 36 marks kopparmynt.[128]

Stiernstedt gives one example for the first half of 1718, i.e. before the dramatic increase in the premium on better coins towards late 1718, when one riksdaler was registered (supposedly based on the average exchange rate on Hamburg) at the value of 58 marks kopparmynt and one ducat at 118 marks kopparmynt.[129]

The exchange rates reported for this period on Amsterdam and Hamburg are most probably noted in proper money (mainly copper plates), not in coin tokens or notes.[130] The use of coin tokens could most likely be enforced only on domestic

123 Stiernstedt (1867, p. 332) writes that in Autumn 1719, the coin token was not even accepted as one öre silvermynt.
124 Stiernstedt (1863, p. 324).
125 Stiernstedt (1863, p. 323).
126 Stiernstedt (1863, pp. 339–40).
127 Stiernstedt (1863, pp. 295–6).
128 Stiernstedt (1863, p. 270).
129 Stiernstedt (1863, p. 270).
130 Lindeberg (1941, pp. 21–3).

transactions, not on foreign exchange, though this matter is somewhat controversial.[131] Even so, the revaluation of older copper plates and carolins does suggest that the exchange rates should have already risen in 1716. However, such a rise did not occur until 1717.[132] One contributory factor could be high copper prices. Carolins had also been revalued (in 1716) but only by 25 per cent. One reason why foreign exchange rates did not increase in 1716 could be that much of the traffic to and from Sweden was controlled by foreigners.[133] Another explanation could be that the exchange rates, at least in 1716, were in units of account rather than actual market rates.[134]

The exchange rates on Hamburg and Amsterdam were well below 58 marks kopparmynt for most of 1718, which indicates that the reported 58 marks kopparmynt for one riksdaler was probably counted in coin tokens. Only for the late 1718 are there reports of an exchange rate of around 80 marks kopparmynt in proper coins and 140 in coin tokens on Amsterdam and Hamburg, respectively.[135] At the height of the monetary disarray, the fall in the exchange rate of Swedish relative to foreign currency affected not only coin tokens but proper coins as well.

To calculate the exchange rates in coin tokens, the estimated premium on better coins is used as an indicator. For 1718 this calculation yields an annual average estimate of 60 marks kopparmynt for one riksdaler in coin tokens, which is very close to Stiernstedt's example.

The confusion in the exchange rate market probably meant that some people were cheated. For example, the revaluation of old copper plates was announced on 17th May 1715 but was not enforced until the 22nd of that month. Some individuals used the opportunity to buy copper plates in the interval at the old rate from individuals who yet did not know about the revaluation.[136]

131 Lindeberg (1941, p. 197).

132 Hegardt (1975, p. 231).

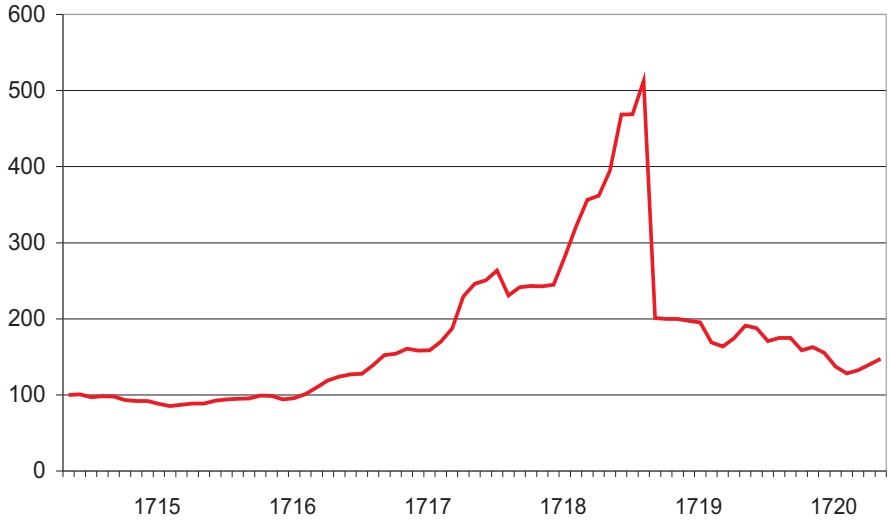
133 Stiernstedt (1863, p. 269).

134 Stiernstedt (1863, p. 270) argues that among the general public one riksdaler was seen to be valued at 36 marks kopparmynt already in 1716.

135 Lindeberg (1941, p. 22). This implies that the premium on better coins was 75 per cent. According to Riksarkivets ämnessamlingar (Riksarkivet), Handel och sjöfart, Ser. I, vol. 1 Järnhandel, the exchange rate on Amsterdam was 42–47 marks kopparmynt in early 1718 and 80 marks in November and December 1718, and according to Sandbergska samlingen (Riksarkivet), O:1, folio 364, the exchange rate on Hamburg varied between 43.75 and 83.75 marks in 1718. This is in accordance with the source stating that the exchange rate on riksdaler in the late 1718 was 80 marks kopparmynt in proper coins and 140 in coin tokens.

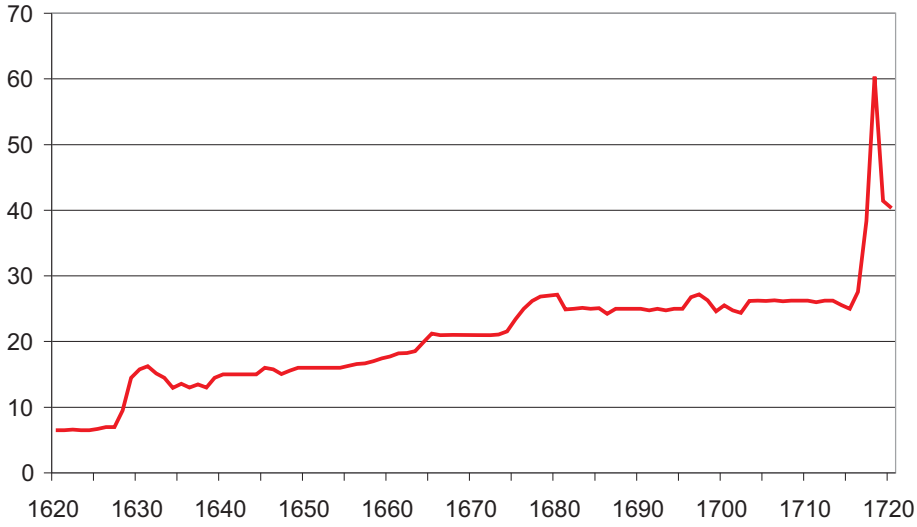
136 Stiernstedt (1863, p. 222).

Figure 4.4. *The Consumer Price Index for Göteborg, December 1714 (=100) to December 1720.*



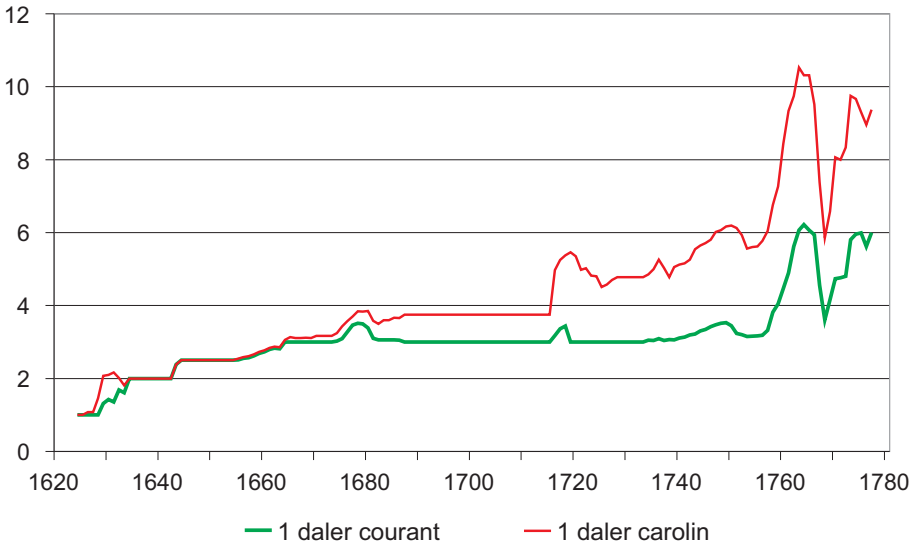
Sources: Göteborgs rådhusrätts och magistrats arkiv, Signum L I (Kollegiernas protokoll), vol. 4–6, Göteborgs landsarkiv.

Figure 4.5. *Riksdaler in marks (kopparmynt), market rate 1620–1720.*



Sources: See Table A4.7.
Marks kopparmynt in coin tokens 1716–18.

Figure 4.6. *1 daler carolin and 1 daler courant in daler kopparmynt 1624–1777.*



Sources: See Table A4.9 and Table A4.10.
Notes: Daler kopparmynt in coin tokens 1716–8.

Table 4.2. *The official conversion rates for various domestic currencies1624–1724.*

Date	Official conversion rates
1624	1 öre in copper coins = 1 öre in silver coins (valid to 16/8 1633)
16/8 1633	1 d.s.m. = 2 d.k.m. (valid to 24/3 1643) 1 riksdaler = 12 marks k.m. = 48 öre s.m. = 1.5 d.s.m. (valid to 24/3 1643)
24/3 1643	1 d.s.m. = 2.5 d.k.m. (valid to 7/10 1665) 1 riksdaler = 15 marks k.m. = 48 öre s.m. = 1.5 d.s.m. (valid to 7/10 1665)
7/10 1665	1 d.s.m. = 3 d.k.m. (valid to 1776, for carolins to 19/3 1681) 1 riksdaler = 52 öre s.m. = 19.5 marks k.m. = 52 öre s.m. = 1.625 d.s.m. (valid to 19/3 1681) 1 ducat = 100 öre s.m. (valid to 19/3 1681)
19/3 1681	1 daler carolin (= 2 carolins) = 3.5 d.k.m. = 1 1/6 d.s.m. = 37 1/3 öre s.m. (valid to 15/5 1686) 1 riksdaler = 24 marks k.m. = 64 öre s.m. = 2 d.s.m. (valid to 29/12 1718) 1 riksdaler = 1 5/7 daler carolins (valid to 15/5 1686) 1 ducat = 128 öre s.m. (valid to 29/12 1718) = 2 riksdaler (valid to 1776)
15/5 1686	1 daler carolin = 3.75 d.k.m. = 1.25 d.s.m. = 40 öre s.m. 1 riksdaler = 1.6 daler carolins (valid to 23/1 1716)
22/5 1715	Copper plates minted before 1715 revalued 50 per cent (valid to 1776), although this did not apply to plates of cannon metal
23/1 1716	1 daler carolin = 50 öre s.m. = 1.5625 d.s.m. = 4.6875 d.k.m. (valid to 1776, except from 20/12 1717 to 18/4 1719)
18/3 1716	4-öre silver coins of 1665–84 and 5-öre silver coins of 1690–1715 revalued to 5 1/3 öre s.m. = 0.5 d.k.m. (valid to 20/12 1717)
20/12 1717	4-öre silver coins of 1665–84 and 5-öre silver coins of 1690–1715 revalued to 6 öre s.m. (valid to 31/12 1776) 1- and 2-öre silver coins revalued by 100 per cent (valid to 4/5 1719) Old carolins no longer legal means of payment (valid to 18/4 1719)
1718	1 Görtz' carolin = 16 öre s.m. = 0.5 daler s.m. (valid to 31/12 1776)
29/12 1718	1 riksdaler = 36 marks k.m. = 3 d.s.m. (valid to 1776) 1 ducat = 192 öre s.m. = 2 riksdaler (valid to 1/1 1777)
18/4 1719	1 daler carolin = 50 öre s.m. = 1.5625 d.s.m. = 4.6875 d.k.m. (valid to 1776)
23/4 1719	Coin tokens devalued by 50 per cent (1 d.s.m = 32 öre s.m. of a token coin could be exchanged up to 16/6 for a new token coin of 2 öre s.m. and a debt note worth 14 öre s.m.) Assumption in this study: 1 d.s.m. in proper coins = 2 d.s.m. in coin tokens
4/5 1719	1- and 2-öre silver coins devalued to their actual face value
18/2 1724	Nominal value of remaining coin tokens reduced from 2 öre s.m. (6 öre k.m.) to 1 öre k.m.

Sources: Wallroth (1918), Stiernstedt (1863) and Lindeberg (1941).

4.4. The period 1719–76

The period 1719–76 saw a continuation of the previous period's complicated multi-currency standard, although the monetary situation did become somewhat more stable during the 1720s and '30s. A fiat standard based on paper notes arose in the 1740s. The fiat currency existed alongside the five metallic currencies – öre courant, carolins, riksdaler, ducats and copper plates – at a fluctuating exchange rate. Plans were made to simplify the monetary system and introduce a mono-currency silver standard with the riksdaler as the main unit, but they were not realised until 1777.

4.4.1. Sources

Annual exchange rates between various domestic currencies for the period 1740–67 are published in Sveriges Riksbank (1931). They are based on *Stockholms stads priscourant.* The background material for the work, which is kept in the Riksbank's archive, also contains weekly exchange rates between Swedish currencies for parts of the period 1705–67.[137] *Stockholms stads priscourant* provides weekly data on the exchange rates for the riksdaler and the ducat in the period 1768–76, and for some years also for carolins and öre courant; these data have been used in this study to estimate monthly and annual averages. Table A4.4 presents monthly exchange rates between Swedish currencies 1705–76.

The exchange rate on the Swedish riksdaler was of less importance than the exchange rates on Hamburger reichstaler banco and Amsterdam rijksdaalder courant (see Chapter 5). When the riksdaler exchange rate was mentioned without specifying the type of riksdaler, it commonly referred to the Hamburger reichstaler banco.[138]

Few sources exist for the annual exchange rates of the Swedish riksdaler and ducats in the 1720s and '30s. For the years where no data are available, the exchange rates on Hamburg and Amsterdam are used as indicators for the Swedish riksdaler. The gold-silver (value) ratio in Hamburg is used as an indicator to estimate the market rate of ducats in Swedish riksdaler when no other source exists.

4.4.2. The multi-currency, metallic standard of 1719–45

Sweden's monetary system stabilised in 1719–20, and remained stable until the Swedish-Russian War in 1741–3. The official exchange rate of one riksdaler was 36 marks kopparmynt. The exchange rate of the Hamburger reichstaler banco was 38–41 marks kopparmynt in autumn 1719 and by January next year it had fallen to 37 marks kopparmynt (see Chapter 5). In the course of 1720 it then declined to 36 marks kopparmynt – the perceived par value.[139]

137 Riksbankens arkiv, 'Växelkurser å Stockholms börs. Primärtabeller (1705–)/1740–1803'.
138 Heckscher (1949, vol. II:2, p. 734).
139 Riksarkivets ämnessamlingar (Riksarkivet), Handel och sjöfart, Ser. I, vol. 1 Järnhandel.

In 1728–33 the market rate of the riksdaler was probably the same as the official rate, but a premium on the riksdaler arose during the latter 1730s.

The price level fell during the course of 1720 (a bad harvest in 1719 contributed to the high level in the first half of the year) and was quite stable in the 1720s and 1730s.[140]

While the legal value ratio of riksdaler to carolins was too low (based on the fine silver contents of the two coins) up to 1715, from 1719 onwards it became too high. This could have several effects: the riksdaler could fall below the par value of 36 marks kopparmynt, a premium could arise on carolins or there would be a move to melt down or hoard carolins. All three phenomena seem to have been present during the course of the 1720s and '30s.

In the period 1718–29 a total of around 75,000 riksdaler was minted, which can be compared to just 13,078 during the whole period 1655–1717.[141] For 1724–33, this study assumes that the market rate of carolins was at par with the copper coins. In the mid-1720s the riksdaler's exchange rate fell below its par value (36 marks kopparmynt),[142] but in the late 1720s it rose again to its par value. Since the silver content of the carolin was 8 per cent higher than the riksdaler according to the official relation between the two,[143] it was profitable to melt down carolins, given that there was no premium on them. Some sources indicate that in the three years preceding 1731, four million carolins were melted down in Danish and Holstein mints,[144] amounting to around one-third of the total stock of carolins.[145] An official report in 1731 stated that the weaker coin, the copper plate, had driven out the better coin, the carolin.[146] In the same year, free minting of silver coins was introduced on very favourable terms.[147]

Table A4.4 shows that at least from January 1734, a small premium was paid on carolins, which allowed them to stay in circulation, counteracting the mechanisms of Gresham's Law. At least up to 1757, the premium for carolins was larger than for riksdaler coins.

Important changes in the first decades of the 18th century created a pure circulation device, without any intrinsic value content.

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140 Lindgren (1971, pp. 330–3).

141 Calculations based on Wallroth (1918).

142 Sjöstrand (1908, p. 17).

143 In 1719–76, the official exchange rate of one riksdaler specie was 3.84 carolins. However, the fine silver content of 3.84 carolins was 27.74 grams, while the fine silver content of one riksdaler was 25.7 grams. In comparison, one riksdaler was officially equal to 96 öre courant, while the fine silver content of 96 öre courant was 22.34 grams in one-öre-coins and 24.96 grams in pjeser (in 5-öre and 10-öre coins with the legal values of 6 and 12 öre, respectively). Calculated from Wallroth (1918).

144 Sjöstrand (1908, p. 9).

145 Based on minting data, see Wallroth (1918).

146 Tingström (1984, p. 62).

147 Sjöstrand (1908, pp. 12–13).

In 1701, the Riksbank began to issue 'transportsedlar' (transferred notes). As the name indicates, these notes had to be 'transported', i.e. re-assigned from the old to the new owner. This obstructed a wider circulation in the early 18th century for various reasons: the procedure was time-consuming, people did not want to put their name on the notes, illiteracy was widespread among the peasantry and there were substitutes for notes ('assignationer' and 'kassasedlar') that functioned more efficiently. In time, people learnt to avoid transportation until the new owner wanted to cash the note in the bank.[148]

As mentioned in the previous section, the copper standard was officially reintroduced in 1709 and from 1710 copper plates were again minted on a larger scale. These plates were a very unpractical means of payment. The Crown had an interest in facilitating more convenient means of payment. The use of transferred notes expanded significantly after 1710 and this coincided with the reintroduction of the copper standard. A decree in 1726 ordained that the Riksbank's transferred notes would be accepted for payment of taxes.[149]

The total amount of outstanding notes increased from 12,219 daler silvermynt in 1722 to 1 million daler silvermynt in 1730 and to 5.3 million daler silvermynt in 1740, roughly from 0.01–0.02 per cent of GDP in 1722 to 1–1.5 per cent in 1730 and 5–6 per cent in 1740.[150]

The riksdaler's exchange rate was expressed in marks kopparmynt. The mark kopparmynt came to be linked to the market value of notes rather than of plates. Initially, the increase in notes did not cause a significant increase in the riksdaler's exchange rate. The notes were convertible into copper plates by the Riksbank. In 1730 there was, in fact, a premium of 1.5–2 per cent on notes relative to plates. There was also an additional charge ('remissage') of 6–7 per cent if plates were to be transported to the countryside.[151] Eli Heckscher estimates that the exchange rate had to rise at least 10 per cent above the value of copper plates (free copper) to make it profitable to export copper.[152] However, only after 1733 did the market rate of the riksdaler increase above the par value of 3 daler silvermynt. In the early 1740s, the exchange rate was, on average, only 5 per cent above the official par value (see Figure 4.7).

4.4.3. The fiat standard of 1745–76

After massive note issues during the war with Russia in the early 1740s, the exchange rate on riksdaler increased from an average of 3.17 daler silvermynt in 1741 to 3.46

148 Heckscher (1949, vol. II:2, p. 737–8), and Talvio (1995, p. 206).
149 Lagerqvist and Nathorst-Böös (1968, pp. 168–9).
150 Based on Sveriges Riksbank (1931) and Edvinsson (2005a) and (2005b).
151 Heckscher (1949, vol. II:2, p. 737–8).
152 Heckscher (1949, vol. II:2, pp. 746–7).

daler silvermynt in 1744 (see Figure 4.7).[153] In 1743, the total amount of outstanding notes increased to 9.5 million daler silvermynt, roughly 10–12 per cent of GDP. Since the bank notes were convertible, there was a massive drain on the Riksbank's metallic reserves.[154] A decree in October 1745 made the Riksbank's notes inconvertible into copper plates[155] and Sweden-Finland de facto introduced a fiat standard that remained in place until the coin reform of 1776. The Riksbank only converted notes into petty copper coins ('slantar')[156] but the latter's mint equivalent was 67 per cent higher that that of copper plates and they were de facto token coins. Since various coin currencies continued to circulate alongside the notes, the fiat standard was combined with the copper and silver standard, forming a multi-currency standard.

From the mid-1740s, non-metallic money came to constitute the largest part of the money supply in Sweden-Finland. Petty copper coins followed the bank notes in value, but there was an increasing premium on carolins, öre courant and later also copper plates. In the period 1768–76, the premium on copper plates was between 35 and 125 per cent (see Table A4.4).

In the early 1760s the paper notes fell to their lowest levels hitherto. In 1762–63 the riksdaler occasionally stood at over 100 marks kopparmynt. When the Cap Party ('mössorna') ousted the Hat Party ('hattarna') from power at the Riksdag of 1765/6, they attempted to reintroduce the riksdaler's former parity (36 marks kopparmynt or 3 daler silvermynt). Preparations were made to abolish the copper standard and reintroduce the silver standard, but the fiat standard was de facto in operation up to 1776.[157] Notes were supposed to be exchangeable into riksdaler specie but since they had been issued on a copper basis, the exchange rate would be determined by the value relation of silver to copper (and copper stood low at that time).[158] A decade passed before the great coin reform took place in 1776.

In 1766 it was not entirely clear how silver would be brought into circulation. The policy focused instead on the exchange rate.[159] The idea was that the return to the former parity would occur gradually over a ten-year period. Instead, there was severe deflation in the late 1760s, with falling exchange rates (see Figure 4.7). Eli Heckscher argues that the notes in circulation did not decrease as much as indicated by the fall in the exchange rate. Large amounts of notes were withdrawn from circulation and saved in the expectation of an increase in their value relative to the silver

153 Sjöstrand (1909, pp. 48–9).

154 However, according to *Stockholms stads priscourant* (Kungliga biblioteket), in the period 1741–53 (with data missing for 1743–46 and 1751–52), the price of free copper fluctuated around 180 daler silvermynt per ship pound, the mint equivalent of copper plates. In 1753, it still stood at 166 daler silvermynt per ship pound.

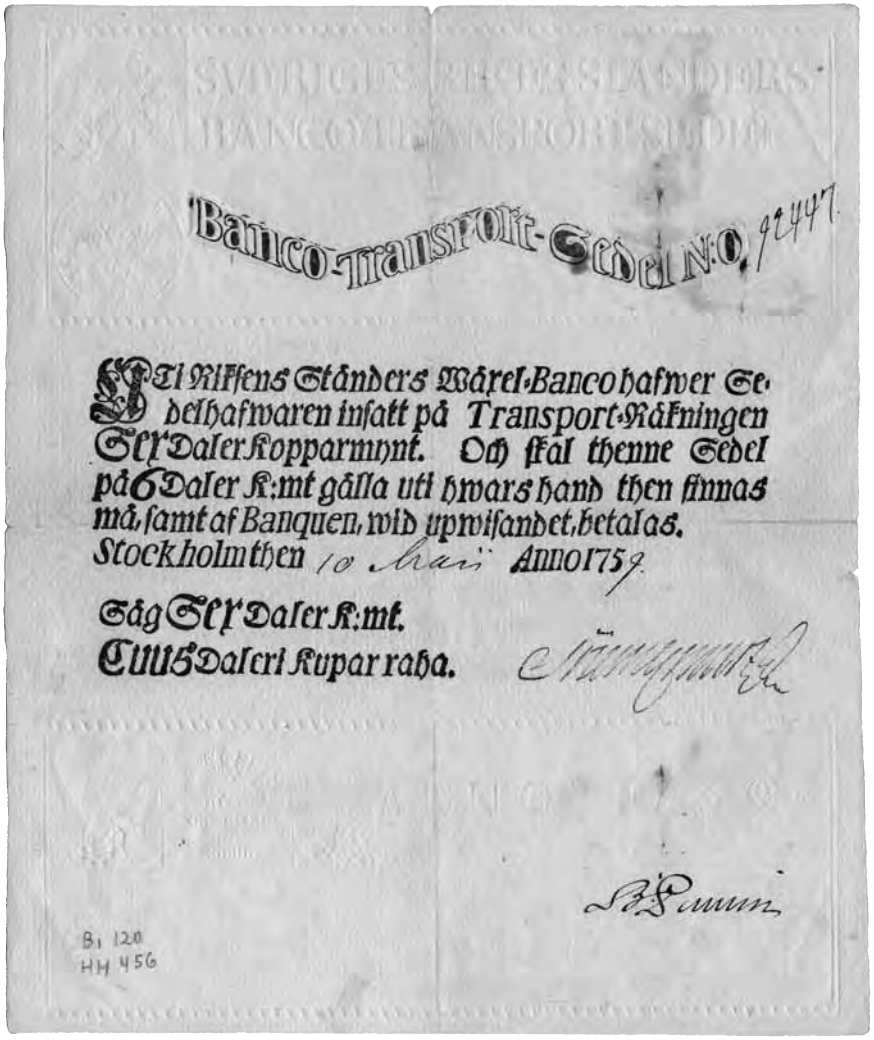
155 Wallroth (1918, p. 93).

156 Sjöstrand (1908, p. 63).

157 Stiernstedt (1863, p. 397).

158 Montgomery (1920, p. 46).

159 Montgomery (1920, pp. 37–48).



A note issued as 6 daler kopparmynt; bank notes came to dominate the money supply in Sweden in the 18th century. In 1759, this sum was the equivalent of a male unskilled labourer's wages for around three day's work in Stockholm.
Photo: The Royal Coin Cabinet, Stockholm.

currencies.[160] When the Hats regained power from the Caps in 1769, the exchange rate rose again. The par value of 36 marks kopparmynt had to be abandoned. Both the rise in the early 1760s and the fall in the late 1760s (see Figure 4.7) could be described as overreactions, or overshootings.[161] The Hats pressed on with the preparations for introducing a sole silver specie standard.[162]

In the period 1766–76, large amounts of riksdaler coins were minted; copper plates continued to be legal means of payment but were more used as commodities.

Based on the intrinsic metallic values, the Hamburger reichstaler banco should be worth 1.6 per cent less than the Swedish riksdaler, and the Amsterdam rijksdaalder courant 6.5 per cent less. In median terms, in 1740–76, the estimated spot rate of Hamburger reichstaler banco stood 2.7 per cent below the Swedish riksdaler and the Amsterdam rijksdaalder courant 7.7 per cent below, in both cases below the theoretical exchange rate (see also Chapter 5). It was mostly in the period 1766–76 that the exchange rate on Hamburg and Amsterdam was below the theoretical rate. In the period 1740–65, the spot exchange rate was mostly above the theoretical rate.

The discrepency between the exchange rates of the Swedish riksdaler and Hamburger reichstaler banco was largest during the deflation in the late 1760s (see Figure 4.7). While the Hamburger reichstaler banco decreased from its highest level of 89 marks kopparmynt in 1765 to 42 marks kopparmynt in 1768–9 (spot rates), the Swedish riksdaler stayed at 50.7 marks kopparmynt in 1768 and 60.6 marks kopparmynt in 1769.

For the period 1740–76 the correlation between the exchange rates of the Swedish riksdaler and ducats (+0.996) is, in fact, stronger than the correlation between the Swedish riksdaler and either the Hamburger reichstaler banco (+0.976) or the Amsterdam rijksdaalder courant (+0.977). This shows that the estimated spot rates on Hamburg and Amsterdam probably also reflected other factors than the price of silver (for example, fluctuations in the shadow interest rate of the bills of exchange). The exchange rate of the Swedish riksdaler should therefore be preferable for transforming nominal prices into silver prices, though the calculation of Swedish prices in Hamburger reichstaler banco and Amsterdam rijksdaalder courant could be useful for international comparisons.

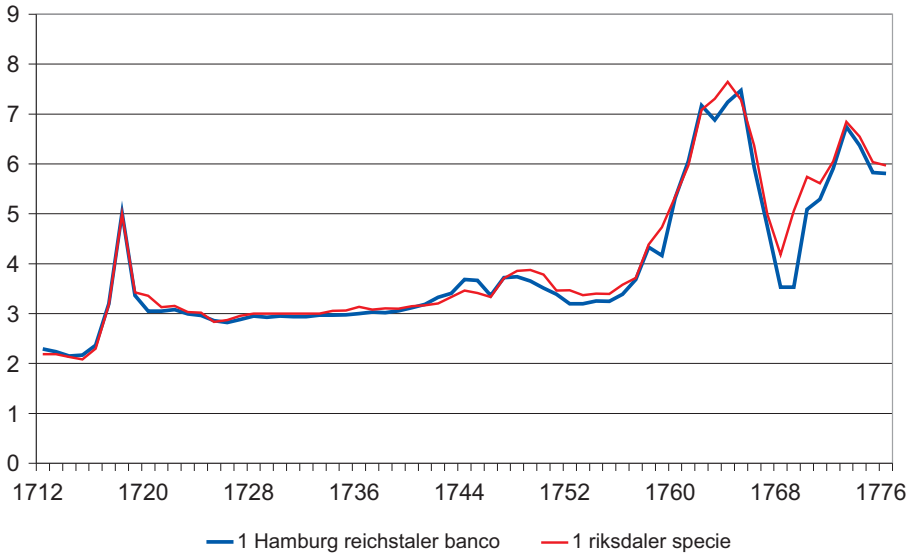
4.5. The period after 1776

4.5.1. The minting reform of 1776

In 1776 a large minting reform amounted in principle to the abolition of the medieval division into marks, öre and penningar, the multi-currency, copper and silver

160 Heckscher (1949, vol. II:2, p. 783), and Jonung (1975, p. 181).
161 Lobell (2000, p. 9).
162 Montgomery (1920, p. 79).

Figure 4.7. *Hamburger reichstaler banco and Swedish riksdaler in daler silvermynt 1712–76, market rate.*



Sources: See Table A4.7 and Chapter 5.

Note: Daler silvermynt in coin tokens 1716–18. Counting in silvermynt and kopparmynt was abolished as of 1st January 1777. The riksdaler became the main currency unit in Sweden-Finland, set equal to 6 daler silvermynt in notes.

standard, and the counting in kopparmynt, silvermynt, öre courant and carolins. A mono-currency, silver specie standard was de facto introduced, with the riksdaler – the only stable means of payment that had existed in Sweden-Finland since the 16th century – as the sole unit of account (disregarding the ducat). One riksdaler was divided into 48 skillings, and one skilling into 12 runstycken.

The old currencies ceased to be legal means of payment as of 1777 and were exchanged for riksdaler coins and fiduciary notes (although notes in daler kopparmynt continued to circulate for some years).[163] The old silver coins were exchanged at their full value, i.e. one riksdaler for 3 daler courant or for 1.92 daler carolins. However, the Riksbank notes and the round copper coins were reduced in value by 50 per cent, i.e. 1 riksdaler = 6 daler silvermynt (72 marks kopparmynt), in accordance with the riksdaler's market rate. The metallic value of 6 daler silvermynt of copper plates was worth more than one riksdaler, and on 7th October 1777 it was decided that one riksdaler would be exchanged for 4 daler silvermynt in copper plates.[164]

163 Montgomery (1920, p. 221).
164 Wallroth (1918, p. 93).

Many of the old labels ('plåt', 'daler', 'styver', etc) for currency units continued to be used well into the 19th century.[165] For example, daler silvermynt continued to refer to 1/6 riksdaler or 8 skillings (later 12 skillings riksgälds).

4.5.2. The rise of three different riksdaler units after 1789

The reintroduced mono-currency, silver standard did not last long. As on many other occasions, it was the need to finance war efforts that reinstated the fiat standard for some time.

A war with Russia led to the establishment of Riksgäldskontoret (National Debt Office), which started to issue riksgälds notes in 1789. These notes soon dominated trade and replaced the Riksbank notes (banco riksdaler), which were still convertible into specie (so that the riksdaler banco was equal in value to the riksdaler specie coin), as the main notes in circulation. The legal status of riksgälds notes was initially somewhat unclear.[166] They began to fall in value compared to riksdaler banco. In 1789, the silver standard was de facto replaced by a multi-currency, combined fiat and silver standard, which lasted until 1803 (see also Chapter 2).

In the present study, the monthly premium on banco notes relative to riksgälds notes is estimated as an average of Stockholm and Göteborg notations.[167] The premium was 1–7 per cent in 1789 and the first half of 1790. Except for 1794 and early 1795 (when it increased to over 20 per cent), it was around 10–12 per cent up to 1797. In 1798 and 1799 it rose continuously to around 50 per cent. See figure 4.8.

The existence of two different currencies created some confusion as to the currency in which prices and exchange rates were recorded.

The foreign exchange rates presented in this study are based on Sveriges Riksbank (1931) and the background material to this work (see Chapter 5). From 19th May 1797 the exchange rate is expressed both in riksdaler riksgälds and in riksdaler banco. For the period 1789–96 it is not clear whether the exchange rates on foreign curren-

165 Talvio (1995, p. 205).

166 Ahlström (1974, pp. 32–8).

167 Based on Ahlström (1972, pp. 133–4) for Stockholm and Mårtensson (1958) for Göteborg. Ahlström presents two series; one is the reported agio (premium) from July 1789 to November 1798, and the other is based on the exchange rates on Hamburg, London and Amsterdam expressed in banco and riksgälds notes, covering the period May 1797 to August 1803. Mårtensson's series cover the whole period from March 1790 to December 1802. The reported agio in Stockholm corresponds quite well to the premium in Göteborg. However, the premium based on exchange rates in Stockholm is substantially underestimated in comparison to the reported agio in Stockholm and Göteborg up to November 1798. From December 1798, the premium based on foreign exchange seems to correspond quite well to the premium in Göteborg. The calculated premium of the present study is an arithmetic average of the reported agio in Stockholm and Göteborg up to November 1798, and from December 1798 an arithmetic average of the premiums based on foreign exchange and the Göteborg premium, with some minor adjustments for the months when data are missing in one of the series.

cies are expressed in riksdaler banco or in riksdaler riksgälds. In Sveriges Riksbank (1931) it is claimed that the exchange rates for this period were in riksdaler riksgälds.[168] Göran Ahlström questions this assumption, and argues that the exchange rate was most probably in riksdaler banco up to 1796.[169] No definite conclusions can be drawn from a perusal of daily exchange rates during May 1797, which can be found in the unpublished primary tables underpinning the work of Sveriges Riksbank (1931).[170] In Sandbergska samlingen there is a table that presents the exchange rate on Hamburg both in riksdaler banco och in riksgälds.[171] The exchange rate in riksdaler banco in the period 1789–96 seems to follow the rate presented in Sveriges Riksbank (1931), while the exchange rate in riksdaler riksgälds is significantly above the latter.[172] Ahlström therefore seems to be correct.

In this study, the foreign exchange data presented in Sveriges Riksbank (1931) are assumed to be expressed in riksdaler banco for the period 1789–96, while the premium calculated from the foreign exchange rates (which differs from the actually recorded premium) in Sandbergska samlingen is used to estimate rates in riksdaler riksgälds.

The difference between the foreign exchange rate in riksgälds and banco was quite small in 1797. The foreign exchange rate in riksgälds partly included the premium on banco notes. For example, according to Sandbergska samlingen, the premium on banco notes calculated from the foreign exchange was 2.9 per cent in 1797, but the 'noted agio' (the actually recorded premium) was 10 per cent.

The opposite situation prevailed in domestic trade when prices were quoted both in riksdaler riksgälds and in riksdaler banco. For example, the calculated premium on banco notes for 1797 based on grain prices at Kungsåra Church was 18.7 per cent, which was much higher than the noted agio. Ahlström argues that the type of transaction must be taken into account, and 'that the agio was used for purposes of price adjustment, i.e. that the stronger part in a transaction took out a higher agio instead of putting pressure on the prices'.[173]

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168 Sveriges Riksbank (1931, p. 158).

169 Ahlström (1972, p. 137).

170 "Växelkurser å Stockholms börs. Primärtabeller (1705–)/1740–1803" (Riksbankens arkiv). Furthermore, it is possible that the reported exchange rates during parts of the period 1789–97 are a mixture of payments in riksdaler banco and riksdaler riksgälds. This is particularly the case for the periods March to September 1791 and August 1793 to January 1794. For example, on 8th November 1793, one Hamburg reichstaler banco was paid 52.75, 53 and 57 skillings, respectively. The difference between 52.75 and 53 skillings on the one hand and 57 skillings on the other seems to be quite large for the same transaction day. The same large difference is reported in various periods for the exchange rate on Amsterdam.

171 Sandbergska samlingen (Riksarkivet), O:1, folio 364.

172 Compared with the level in Sveriges Riksbank (1931), the exchange rate in riksdaler banco in the period 1789–96 presented in Sandbergska samlingen was, on average (here geometric average), 0.9 per cent higher while the exchange rate in riksdaler riksgälds was, on average, 7.5 per cent higher.

173 Ahlström (1972, p. 140).

The First Battle of Svensksund on August 24, 1789, *by Johan Tietrich Schoultz. King Gustav III had riksgälds notes printed to finance the war against Russia (1788–90); they soon fell in value relative to banco notes, which could still be exchanged for silver coins in the Riksbank. War was often the main cause of monetary instability.*
Source: Nationalmuseum.

According to Sandbergska samlingen, the noted agio was, on average, 13.4 per cent in 1793–96, and the premium calculated from the exchange rates on Hamburg 9.1 per cent. In the same period, the premium calculated from price differences at Kungsåra Church was 17.5 per cent. In 1799–1802, the average premium calculated from the exchange rates noted in Stockholm was 44 per cent, while the premium calculated from the price differences at Kungsåra Church was 57 per cent. The noted agio presented by Sture Mårtensson for Göteborg was in the same period 49 per cent and the premium calculated from the exchange rates on Hamburg was 51 per cent. Thus, in Göteborg the premium on banco notes calculated from the foreign exchange was higher than the noted agio, which was the opposite of the situation in Stockholm. See Table A4.5.

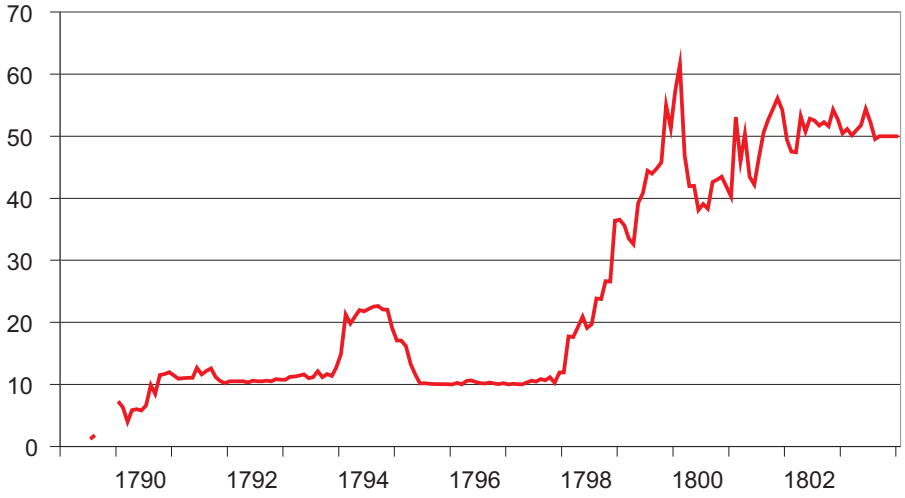
From 1799 the premium on banco notes centered on around 50 per cent, although it still fluctuated sharply. In Göteborg the premium was as high as 66.7 per cent in December 1801.[174]

Since the riksdaler banco was convertible up to 1808, this study assumes that 1 riksdaler specie [i silver] = 1 riksdaler banco = 48 skillings banco for the whole period 1777–1808 even though the Hamburger reichstaler banco was noted above 48 skillings (see Chapter 5).

In 1803 the relation between banco och riksgälds notes was fixed and the mono-

174 Mårtensson (1958, p. 25). See also Ahlström (1974, p. 28).

Figure 4.8. *Premium (agio) on banco notes (in per cent) relative to riksgälds notes 1789–1803, market rate based on monthly data.*



Sources: See Table A4.6.

currency, silver specie standard was briefly reintroduced. From then on, one riksdaler banco was equal to 1.5 riksdaler riksgälds. However, the exchange rate of the Hamburg reichstaler banco refused to bounce back to its par value, making it profitable to exchange notes for silver from the Riksbank. The war in 1808–10 led to a massive increase in Riksbank notes in circulation. In 1809, the banco notes were finally made inconvertible.[175] The fiat standard prevailed until 1834. The banco notes fell drastically in value relative to the riksdaler specie [i silver], and since the riksdaler riksgälds was fixed to the riksdaler banco, it also fell in value. Hence, a difference arose between riksdaler banco and riksdaler specie [i silver], and from then on there were three different riksdaler units. There were also three different skillings, which followed these three riksdaler units.[176] In 1834, when the mono-currency, silver specie standard was reintroduced once more, the relation between riksdaler specie and riksdaler banco was fixed so that: 1 riksdaler specie = 2⅔ riksdaler banco = 4 riksdaler riksgälds. In 1855 the riksdaler riksgälds was replaced by the riksdaler riksmynt; in 1873 the latter was replaced by the krona (SEK). The period after 1803 is further discussed by Håkan Lobell in Chapter 6.

175 Brisman (1931, pp. 9–15). Inconvertibility was de facto introduced in early 1809 but was not sanctioned until 1810.

176 The skilling specie was rather a unit of account; no coins with that denomination were ever minted.

Table 4.3. *The official conversion rates for various domestic currencies from 1777 onwards.*

Date	Official conversion rates
1/1 1777	1 riksdaler = 48 skillings 1 skilling = 12 runstycken 1 skilling = 4 öre s.m. in petty copper coins (i.e. twice the old par value, valid to 29/8 1803) 1 riksdaler exchanged for 6 d.s.m. in paper notes (i.e. twice the old par value) 1 riksdaler exchanged for 3 d.s.m. in courant silver coins (i.e. in accordance with old par value) 1 riksdaler exchanged for 1.92 daler carolins (i.e. in accordance with old par value) 1 ducat = 94 skillings (specie) = 1 23/24 riksdaler (valid to 7/4 1830)
7/10 1777	1 riksdaler exchanged for 4 d.s.m. in copper plates
29/8 1803	1 riksdaler banco = 1.5 riksdaler riksgälds = 72 skillings riksgälds 1 skilling banco = 1.5 skilling riksgälds Öre s.m. in copper coins ceased to be legal means of payment
19/6 1816	1 skilling (banco) = 2 öre s.m. in copper coins of 2- and 1-öre s.m. denomination minted up to 1778
7/4 1830	1 ducat = 2.125 riksdaler specie (valid to 1855)
1/10 1834	1 riksdaler specie = 2 ⅔ riksdaler banco = 4 riksdaler riksgälds
1855	1 riksdaler riksmynt = 100 öre = 32 skillings banco 1 riksdaler riksmynt = 1 riksdaler riksgälds 1 ducat = 8.25 riksdaler riksmynt = 2.0625 riksdaler specie
29/12 1871	1 carolin (gold coin) = 7.1 riksdaler riksmynt
30/5 1873	1 krona = 1 riksdaler riksmynt =100 öre

Source: Wallroth (1918).

4.5.3. Transforming historical prices into a common currency unit

One problem when comparisons are made over time is that the currency unit has changed. In some studies, the krona (SEK) is also used as a unit of account for the period before 1873. Within numismatic and economic-historical research at least two different methods have been applied.

Lennart Jörberg chooses to follow the nominal unit back to 1732. One krona is set equal to one riksdaler riksmynt 1855–73, to one riksdaler riksgälds 1789–55 and to one riksdaler specie 1776–89. Hence, one riksdaler specie was equal to 1 SEK in

1776 but to 4 SEK in 1873. Based on the relation 1 riksdaler = 6 daler silvermynt, Jörberg assumes that in 1732–76:

1 krona = 6 daler silvermynt = 18 daler kopparmynt = 72 marks (kopparmynt)

This, however, can only be applied to the round copper coins and the Riksbank notes. Since the Riksbank notes were de facto the main means of payment, Jörberg's assumption seems reasonable. His procedure is also advocated in Fregert and Gustafsson (2005).

Wallroth (1918) chooses a method that follows the riksdaler specie unit backwards in time. In contrast to Jörberg, Wallroth follows not the main currency actually used in trade, but the coin with a stable silver content (the silver content of riksdaler specie changed only slightly over time). The method assumes that one riksdaler specie de facto became 4 kronor. Hence, one riksdaler specie was always equal to 4 kronor. To estimate other currencies in SEK, Wallroth uses both the officially fixed and the market exchange rates of the riksdaler in those currencies.

4.6. Summary

This chapter deals with the history of currencies and exchange rates in Sweden-Finland in 1534–1803, a period that is notable and perplexing for its multiple domestic currencies. Since Finland belonged to the kingdom of Sweden up to 1809, in this period the two areas had the same monetary system.

In 1534–1624 Sweden-Finland was on a mono-metallic silver standard. Although gold coins circulated as well, they played a rather marginal role. The main currency unit was the mark, equal to 8 öre or 192 penningar (pennies). At times in the 16th and early 17th centuries the monetary system approached a mono-currency standard, but there were also currencies of minor or temporary importance in domestic trade that circulated alongside the main currency, most importantly the silver daler. The first silver daler coins were minted in 1534. Throughout its lifetime, 1534–1873, the fine silver content of the silver daler or riksdaler (specie) coin was stable (with only minor adjustments). In contrast, the fine silver content of the mark decreased over time.

In the 1570s the silver daler was officially fixed at 4 marks or 32 öre, but its market exchange rate was somewhat higher. A bifurcation then occurred between the silver daler and the daler as a unit of account, equal to 4 marks or 32 öre. The silver daler was later called riksdaler. When the fine silver content of the mark silver coin was lowered in the 17th century, the exchange rate of the riksdaler in marks increased.

In 1624, a copper standard was introduced; it lasted until 1776. The silver standard continued to exist alongside the copper standard. In this period, at least five or six domestic currencies were in use, three based on silver, one or two based on copper and one based on gold. In addition, fiat currency circulated in the mid-1660s,

1716–9 and 1745–76. Since attempts were made to fix the relations between various metallic currencies, the monetary system could be described as bi- or trimetallic. At times, however, the market exchange rates between these currencies floated and the official value relations had to be adjusted on numerous occasions.

Since the price of copper fluctuated relative to silver, there was a tendency to debase copper coins when copper prices were high; when copper prices fell back, the silver coins were undervalued. Initially, one daler in copper coins was supposed to be equal to one daler in silver coins. However, in expectation of rising copper prices, which were already high, the copper content of the copper coins was set too low in 1624. The market value of copper coins relative silver coins then fell quickly in the late 1620s and early 1630s. A multi-currency standard arose. One daler silvermynt was set equal to 2 daler kopparmynt in 1633–43, to 2.5 daler kopparmynt in 1643–65 and to 3 daler kopparmynt in 1665–76. Initially the daler kopparmynt was a unit for copper coins, and daler silvermynt for silver coins; later, copper coins were denominated both in daler kopparmynt and in daler silvermynt.

The relation 1 mark = 8 öre was upheld as an accounting identity, but the value relations between the actual silver coins were not always in accordance with this. The fine silver content per unit of value was normally lower for öre coins than for mark coins. A distinctive feature of the multi-currency standard in Sweden-Finland during the 17th and 18th centuries was that market exchange rates fluctuated not only between the copper and silver currencies, but also between various silver currencies.

From the 1660s the term carolin came to refer to silver coins in mark denomination and courant to silver coins in öre denomination. Carolins and öre courant were the main domestic silver currencies, while up to the 1760s the riksdaler was mainly used in international trade. One carolin was equal to two marks in silver coins, and one daler carolin to two carolins. One öre courant was the same as one öre in silver coins, and one daler courant was equal to 32 öre courant. In 1681 and 1686 the carolins were officially revalued relative to öre courant so that the identity between one daler carolin and one daler courant definitely disappeared. The widening difference between the two main silver currencies from the 1680s was a consequence of the bimetallic copper and silver standard, and the attempt to make one silver currency (courant) follow the copper currency by lowering its fine silver content, while not debasing the other silver currency (carolins). Officially, one öre courant was equal to one öre silvermynt, but during the fiat standards of the 18th century this identity could not be maintained in the market.

The ducat, minted in gold, was also used as a currency unit, although mainly in international trade.

Stockholm Banco issued bank notes in the 1660s, though they mainly functioned as convertible fiduciary notes. Only briefly did they circulate as unconvertible fiat notes before being exchanged at their full value. These notes never dominated the money supply.

The fiat standard in 1716–9 was based on coin tokens, which circulated alongside

the silver and copper currencies. A premium arose on these metallic currencies. The unit daler silvermynt could refer to either coin tokens or metallic currencies, and it is not always clear in which currency prices and foreign exchange rates were quoted. Prices expressed in coin tokens increased dramatically during the course of 1718 and early 1719. Later in 1719, coin tokens were devalued by 50 per cent.

During the fiat standard of 1745–76 the units daler kopparmynt and daler silvermynt followed the bank notes, but the metallic currencies continued to exist at a premium. The exchange rate of the riksdaler increased from 3 daler silvermynt in the early 1730s to 6 daler silvermynt in late 1776. In effect, the bank notes were devalued by 50 per cent.

Although the value relations between copper coins were officially fixed in 1624–1776, in some periods there were two different copper currencies, one based on copper plates and the other on round copper coins ('slantar'). Most notably, this occurred during the fiat standard of 1745–76. The round copper coins (with a lower copper content per unit of value than copper plates) then followed the value of the notes.

Tables A4.7 to A4.10 present the exchange rates between various domestic currency units used in Sweden-Finland. Table A4.7 contains the exchange rate of the riksdaler in mark silver coins for the period 1534–1624 and in mark kopparmynt for 1624–1776. Table A4.8 presents the exchange rate of the ducat in mark kopparmynt and riksdaler specie for the period 1652–1776. Table A4.9 contains the exchange rate of daler carolin in daler kopparmynt and of the riksdaler in mark silver coins (half carolins) for the period 1624–1776. Table A4.10 presents the exchange rate of öre courant in öre kopparmynt and of riksdaler in öre courant.

The copper standard contained the seeds of its own destruction, though it was remarkably long-lived. The high transaction costs involved when payments were made in intrinsic copper coins, especially copper plates, encouraged the introduction of a fiat currency. Once paper notes came to dominate circulation, even in smaller denominations, the need for a copper currency decreased. In 1777 a mono-currency, silver standard was reintroduced, but with the riksdaler as the main unit. However, the existence of paper money in the form of convertible fiduciary notes also became a threat to the silver standard itself, especially during times of war.

The monetary uniformity only lasted until 1789. Riksgäldskontoret (National Debt Office) started to issue riksgälds notes in 1789 and they fell in value relative to the riksdaler banco, which continued to be convertible into silver coins (riksdaler specie) by the Riksbank. Hence, an unconvertible fiat standard was briefly combined with a convertible metallic standard. The monthly premium on banco notes relative to riksgälds notes is presented in Table A4.6. In 1803 the relation 1 riksdaler riksgälds = ⅔ riksdaler banco was fixed, which basically ended the period of multiple currencies. Even though the riksdaler specie and the ducat were on floating exchange rates after 1803, these two currencies played only a minor role in domestic trade.

Appendix A4: Summary tables

Table A4.1. *Monthly data on riksdaler in marks (kopparmynt) 1626–86.*

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average
1626		6.5			6.5					8			6.966
1627						6.5							6.5
1628		9								10			9.487
1640	15	15	15	15	15	15	15	15	15	15	15	15	15
1641	15	15	15	15	15	15	15	15	15	15	15	15	15
1642	15	15	15	15	15	15	15	15	15	15	15	15	15
1643	15	15	15	15	15	15	15	15	15	15	15	15	15
1644	15	15	15	15	15	15	15	15	15.25	15	15	15	15.02
1645	16	16	16	16	16	16	16	16	16	16	16	16	16
1646	16	16	16	16	16	16	15.5	15	15.75	15.75	15.75	15.75	15.79
1647	15.5	15	15	15	15	15	15	15	15	15	15	15	15.04
1648	15	15	15	15	15	16	16	16	16	16	16	16	15.58
1649	16	16	16	16	16	16	16	16	16	16	16	16	16
1650	16	16	16	16	16	16	16	16	16	16	16	16	16
1651	16	16	16	16	16	16	16	16	16	16	16	16	16
1652	16	16	16	16	16	16	16	16	16	16	16	16	16
1653	16	16	16	16	16	16	16	16	16	16	16	16	16
1654	16	16	16	16	16	16	16	16	16	16	16	16	16
1655	16	16	16.25	16.25	16.38	16.25	16.25	16.25	16.75	16.75	16.25	16.25	16.3
1656	16.5	16.5	16.5	16.5	16.63	16.5	16.63	16.5	16.63	16.63	16.63	16.63	16.56
1657	16.25	16.75	16.63	16.75	16.75	16.75	16.75	16.75	17	17	17	16	16.7
1658	17	17	17	17	17	17	17	17	17	17	17.25	17.13	17.03
1659	17.13	17.38	17.75	17.25	17.25	17.25	17.25	17.5	17.5	17.75	17.75	17.75	17.46
1660	17.25	17.25	17.25	18	18	17.75	17.25	18	18	18	18	18	17.73
1661	18	18	18	18.25	18.25	18.25	18.25	18.25	18.25	18.25	18.25	18.25	18.19
1662	18.25	18.25	18.25	18.25	18.25	18.25	18.25	18.25	18.25	18.25	18.25	18.25	18.25
1663	18.25	18.25	18.25	18.25	18.25	18.75	18.75	18.5	18.5	19	19	19	18.56
1664	20	20	20	20	20	19	19	19	20	20.5	20.5	21	19.91
1665	21.5	21.75	21.5	21.5	21.25	21	21	21	21	21	21	21	21.21
1666	21	21	21	21	21	21	21	21	21	21	21	21	21
1667	21	21	21	21	21	21	21	21	21	21	21	21	21
1668	21	21	21.25	21.25	21	21	21	21.06	21	21	21	21	21.05
1669	21	21	21	21	21.25	21.13	21	21	21	21	21	21	21.03
1670	21	21	21	21	21	21	21	21	21	21	21	21	21
1671	21	21	21	21	21	21	21	21	21	21	21	21	21
1672	21	21	21	21	21	21	21	21	21	21	21	21	21
1673	21	21	21	21	21	21	21	21.13	21.13	21.13	21.13	21.31	21.07

Table A4.1 (cont.). *Monthly data on riksdaler in marks (kopparmynt) 1626–86.*

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average
1674	21.31	21	21	21.13	21.25	21.5	21.5	21.75	22	22	22	22	21.53
1675	22	22.25	22.5	22.56	22.88	22.94	23.13	23.38	26.38	24.13	24.5	24.5	23.4
1676	24	24	24.25	24.25	24.38	24.88	25.13	25.75	26	25.75	25.75	25.75	24.98
1677	25.75	25.75	25.75	26	26	26.5	26	26	26.5	26.5	26.5	26.75	26.16
1678	26.75	26.75	26.75	27	27	27	27	26.75	26.75	26.75	26.75	26.75	26.83
1679	27	27	27	27	27	27	27	27	27	27	27	27	27
1680	27.27	27	27.27	27	27	27	27	27	27.27	27.27	27.27	27.27	27.13
1681	27.27	27.27	27	24	22.56	24	24	24	24.5	24.5	25	25	24.88
1682	24.75	25	25	25	25	25	25	25	25	25	25	25	24.98
1683	25.13	25.13	25.13	25.44	25.44	25.44	25	25	25	25	25	25	25.14
1684	25	25	25	25	25	25	25	25	25	25	25	25	25
1685	25												25.06
1686	25.13	25.13	24.69	24	24	24	24	24	24	24	24	24	24.24

Sources: Wolontis (1936) and Swenne (1933). Annual average calculated as geometric.

Table A4.2. *Monthly data on one riksdaler carolin in mark kopparmynt 1670–86.*

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average
1670	19	19	19	19	19	19	19	19	19	19	19	19	19
1671	19	19	19	19	19	19	19	19	19	19	19	19	19
1672	19	19	19	19	19	19	19	19	19	19	19	19	19
1673	19	19	19	19	19	19	19	19	19	19	19	19	19
1674	19	19	19	19	19	19.5	19.5	19.63	20	20	20	20	19.464
1675	20	20	20	20.19	20.31	20.5	20.5	21	21	21.13	21.13	21.38	20.588
1676	21	21	21	21	21	21	21.5	21.75	22	22	22	22	21.433
1677	22	22	22	22	22	22.13	22.13	22.13	22.13	22.5	22.63	22.88	22.207
1678	23	23.13	23.13	23.38	23	23	23	23	23	23	23	23	23.052
1679	23	23	23	23	23	23	23	23	23	23	23	23	23
1680	23	23.23	23.06	23	23.13	23.13	23.13	23.06	23.06	23.06	23.06	23.06	23.082
1681	23.19	23	23	21	21	21	21	21	21	21	21	21	21.498
1686	22	22	21.5	21	21	21	22.5	22.5	22.5	22.5	22.5	22.5	21.949

Source: Wolontis (1936). Annual average calculated as geometric. 1 riksdaler carolin = 3 carolins.

Table A4.3. *Monthly premium (per cent) on courant silver coins 1670–86.*

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average
1670	0	0	0	0	0	0	0	0	0	0	0	0	0
1671	0	0	0	0	0	0	0	0	0	0	0	0	0
1672	0	0	0	0	0	0	0	0	0	0	0	0	0
1673	0	0	0	0	0	0	0	0	0	0	0	0	0
1674	0	0	0	0	0	1	1	1.25	1.75	1.75	2	2	0.896
1675	2	2.25	2.25	3	3	3	3	3	3.75	3.75	3.75	5.5	3.188
1676	6.25	7.75	6.75	6.75	7.75	8.25	9.5	10.25	11.5	12.33	12.33	12.5	9.326
1677	12.5	12.5	12.5	12.5	15	16.5	17.5	17.5	17.5	17.5	17.5	17.5	15.54
1678	17.75	17.75	17.75	18.5	18.5	17	17	16.75	17	16	16.5	16.5	17.25
1679	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	16.75	15.17	15.17	16.49
1680	15.17	15.17	15.5	14.44	13.5	14.33	11.44	12.17	9.778	11.17	11.17	11.17	12.92
1681	9.778	6.5	6.5	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	3.398
1686	3* (2.5 **)	3* (2.5 **)	3* (2.5 **)	1.5* (1**)	1.5* (1**)	1.5* (1**)	1.5* (2**)	1.5* (1**)	1.5* (1**)	1.5* (1**)	1.5* (1**)	1.5* (1**)	1.77* (1.4**)

Source: Wolontis (1936). Annual average calculated as arithmetic.

Par value: 1 öre courant = 1 öre silvermynt.

* 4-öre coins

** 2-öre coins

Table A4.4. *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 12 daler k.m. before 1718, 18 daler k.m. after 1718)			1 riksdaler specie in daler kopparmynt (par value 6 daler k.m. before 1718, 9 daler k.m. after 1718)		
		Average	Lowest	Highest	Average	Lowest	Highest
1705	May	12.5	12.5	12.5	6.5	6.5	6.5
1705	June	13.75	13.5	14	6.5	6.5	6.5
1705	July	13.56	13.5	13.63	6.563	6.563	6.563
1705	Aug	13.56	13.5	13.63	6.563	6.563	6.563
1705	Sept	13.56	13.5	13.63	6.563	6.563	6.563
1705	Oct	13.56	13.5	13.63	6.559	6.55	6.563
1705	Nov	13.56	13.5	13.63	6.563	6.563	6.563
1705	Dec	13.56	13.5	13.63	6.563	6.563	6.563
1706	Jan	13.56	13.5	13.63	6.563	6.563	6.563
1706	Feb	13.56	13.5	13.63	6.563	6.563	6.563
1706	March	13.56	13.5	13.63	6.594	6.563	6.625

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 12 daler k.m. before 1718, 18 daler k.m. after 1718)			1 riksdaler specie in daler kopparmynt (par value 6 daler k.m. before 1718, 9 daler k.m. after 1718)		
		Average	Lowest	Highest	Average	Lowest	Highest
1706	April						
1706	May	13.63	13.63	13.63	6.563	6.563	6.563
1706	June	13.63	13.63	13.63	6.563	6.563	6.563
1706	July	13.63	13.63	13.63	6.563	6.563	6.563
1706	Aug	13.63	13.63	13.63	6.563	6.563	6.563
1706	Sept	13.63	13.63	13.63	6.563	6.563	6.563
1706	Oct	13.63	13.63	13.63	6.563	6.563	6.563
1706	Nov	13.75	13.5	14	6.594	6.563	6.625
1706	Dec	13.7	13.5	14	6.525	6.5	6.563
1707	Jan	13.54	13.5	14	6.542	6.5	6.563
1707	Feb	13.5	13.5	13.5	6.531	6.5	6.563
1708	Dec	13.94	13.88	14	6.563	6.563	6.563
1711	Sept	14.06	14.06	14.06	6.5	6.5	6.5
1728	Nov	18.5	18.5	18.5	9	9	9
1729	Sept	18.25	18.25	18.25	9	9	9
1729	Oct	18.31	18.25	18.38	9	9	9
1733	Jan	18	18	18	9	9	9
1733	Feb	18	18	18	9	9	9
1733	March	18	18	18	9	9	9
1733	April	18	18	18	9	9	9
1733	May	18	18	18	9	9	9
1733	June	18	18	18	9	9	9
1733	July	18	18	18	9	9	9
1733	Aug	18	18	18	9	9	9
1733	Sept	18	18	18	9	9	9
1733	Oct	18.18	18.16	18.19	9	9	9
1733	Nov	18.03	18	18.16	9	9	9
1733	Dec	18	18	18	9	9	9

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler specie in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)		
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest
1734	Jan	18.19	18.16	18.25	9.125	9.125	9.125	1.016	1.015	1.018	25.97	25.94	26
1734	Feb	18.13	18.13	18.19	9.133	9.125	9.188	1.016	1.015	1.018	25.97	25.94	26
1734	Mar	18.18	18.13	18.25	9.156	9.125	9.188	1.016	1.015	1.018	25.91	25.81	26
1734	April	18.22	18.19	18.25	9.156	9.125	9.188	1.015	1.015	1.015	25.84	25.81	25.88
1734	May	18.19	18.19	18.19	9.156	9.125	9.188	1.015	1.015	1.015	25.84	25.81	25.88
1734	June	18.19	18.19	18.19	9.156	9.125	9.188	1.015	1.015	1.015	25.84	25.81	25.88
1734	July	18.25	18.25	18.25									
1734	Aug	18	18	18									
1734	Sept	18.13	18	18.31									
1734	Oct	18.23	18	18.31	9.188	9.188	9.188	1.02	1.02	1.02	25.88	25.88	25.88
1734	Nov	18.23	18	18.38	9.198	9.188	9.25	1.023	1.02	1.025	25.88	25.88	25.88
1734	Dec												
1736	Jan												
1736	Feb												
1736	Mar	18.75	18.75	18.75									
1736	April												
1736	May	18.75	18.75	18.75	9.375	9.375	9.375	1.038	1.038	1.04	27.81	27.75	27.88
1736	June	18.78	18.75	19	9.375	9.375	9.375	1.035	1.035	1.035	27.89	27.88	27.91
1736	July	18.75	18.75	18.75	9.375	9.375	9.375	1.035	1.035	1.035	27.88	27.88	27.88
1736	Aug	19.12	18.75	19.75	9.437	9.375	9.5	1.035	1.035	1.035	27.88	27.88	27.88
1736	Sep	18.78	18.75	18.86	9.375	9.375	9.375	1.035	1.035	1.035	28	28	28
1736	Oct	18.75	18.75	18.75	9.375	9.375	9.375	1.027	1.025	1.03	28.08	28	28.13
1736	Nov	18.75	18.75	18.75	9.5	9.5	9.5	1.027	1.025	1.03	28.56	28.25	29
1736	Dec	18.73	18.5	18.81	9.416	9.375	9.5	1.025	1.025	1.025	28.41	28	28.75
1740	Jan												
1740	Feb												
1740	Mar	18.61	18.56	18.63	9.45	9.375	9.5	1.033	1.03	1.035	27.26	27.13	27.38
1740	April	18.6	18.56	18.63	9.5	9.5	9.5	1.032	1.03	1.035	27.32	27.25	27.44
1740	May	18.65	18.56	18.75	9.437	9.375	9.5	1.031	1.03	1.035	27.39	27.38	27.44
1740	June	18.68	18.56	18.75	9.437	9.375	9.5	1.03	1.03	1.035	27.35	27.25	27.38
1740	July	18.72	18.69	18.75	9.437	9.375	9.5	1.032	1.03	1.035	27.25	27.25	27.25
1740	Aug	18.67	18.63	18.75	9.437	9.375	9.5	1.032	1.03	1.035	27.31	27.25	27.38
1740	Sept	18.66	18.63	18.75	9.437	9.375	9.5	1.032	1.03	1.035	27.27	27.25	27.38
1740	Oct	18.66	18.63	18.69	9.437	9.375	9.5	1.037	1.035	1.04	27.31	27.25	27.38
1740	Nov	18.66	18.63	18.69	9.437	9.375	9.5	1.045	1.04	1.05	27.36	27.31	27.38

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)		
		Aver-age	Low-est	High-est	Aver-age	Low-est	High-est	Aver-age	Low-est	High-est	Aver-age	Low-est	High-est
1740	Dec	18.64	18.63	18.69	9.437	9.375	9.5	1.047	1.045	1.05	27.34	27.25	27.38
1741	Jan	18.68	18.63	18.75	9.437	9.375	9.5	1.046	1.04	1.05	27.35	27.25	27.38
1741	Feb	18.63	18.63	18.66	9.437	9.375	9.5	1.05	1.05	1.05	27.3	27.25	27.38
1741	Mar	18.65	18.63	18.69	9.487	9.438	9.5	1.047	1.045	1.05	27.38	27.38	27.38
1741	April	18.63	18.63	18.63	9.5	9.5	9.5	1.041	1.03	1.045	27.46	27.31	27.75
1741	May	18.72	18.69	18.75	9.5	9.5	9.5	1.03	1.03	1.03	27.85	27.75	28
1741	June	18.72	18.69	18.75	9.5	9.5	9.5	1.036	1.03	1.04	27.8	27.75	27.88
1741	July	18.75	18.75	18.75	9.5	9.5	9.5	1.044	1.04	1.05	27.7	27.63	27.75
1741	Aug	19.29	18.88	20	9.5	9.5	9.5	1.049	1.045	1.05	27.67	27.63	27.75
1741	Sept	19.06	19	19.25	9.5	9.5	9.5	1.046	1.045	1.05	27.53	27.5	27.63
1741	Oct	19.25	19.19	19.38	9.523	9.5	9.563	1.047	1.045	1.05	27.33	27.25	27.5
1741	Nov	19.31	19.19	19.5	9.581	9.5	9.625	1.049	1.045	1.05	27.24	27.13	27.38
1741	Dec	19.28	19.25	19.38	9.594	9.563	9.625	1.052	1.05	1.06	27.28	27.25	27.38
1742	Jan	19.46	19.38	19.56	9.594	9.563	9.625	1.056	1.05	1.06	27.34	27.25	27.38
1742	Feb	19.64	19.5	20	9.594	9.563	9.625	1.057	1.055	1.06	27.51	27.5	27.56
1742	Mar	19.66	19.5	19.75	9.594	9.563	9.625	1.058	1.055	1.06	27.56	27.5	27.63
1742	April	19.83	19.75	20	9.594	9.563	9.625	1.06	1.06	1.06	27.77	27.63	27.88
1742	May	20	20	20	9.624	9.5	9.75	1.06	1.06	1.06	28.05	28	28.13
1742	June	20	20	20	9.624	9.5	9.75	1.067	1.06	1.07	28.44	28.25	28.5
1742	July	20.65	20	21	9.624	9.5	9.75	1.071	1.06	1.08	28.55	28.5	28.63
1742	Aug	20.43	19.5	21	9.624	9.5	9.75	1.08	1.08	1.08	28.56	28.5	28.63
1742	Sept	19.56	19	20	9.624	9.5	9.75	1.067	1.055	1.08	28.29	28.13	28.5
1742	Oct	19.55	19.38	20	9.624	9.5	9.75	1.06	1.05	1.07	28.06	28	28.13
1742	Nov	19.62	19.5	19.75	9.624	9.5	9.75	1.065	1.06	1.07	28.12	28	28.25
1742	Dec	19.62	19.5	19.75	9.624	9.5	9.75	1.062	1.06	1.065	28.25	28.25	28.25
1743	Jan	19.62	19.5	19.75	9.624	9.5	9.75	1.066	1.06	1.07	28.41	28.25	28.63
1743	Feb	19.62	19.5	19.75	9.716	9.5	10	1.066	1.06	1.07	28.77	28.63	28.88
1743	Mar	20.08	19.75	20.5	9.832	9.5	10	1.067	1.065	1.07	29.25	29	29.5
1743	April	20.12	20	20.25	9.874	9.75	10	1.08	1.08	1.08	29.54	29.5	29.75
1743	May	20.12	20	20.25	10	10	10	1.078	1.075	1.08	29.7	29.63	29.75
1743	June	20.67	20	22.5	10.04	10	10.25	1.085	1.08	1.11	29.87	29.75	30
1743	July	20.16	20	20.5	10.12	10	10.25	1.076	1.07	1.08	30.12	30	30.25
1743	Aug	20.25	20	21	10.12	10	10.25	1.068	1.065	1.07	30.25	30.25	30.25
1743	Sept	20.25	20	20.5	10.12	10	10.25	1.072	1.065	1.08	30.22	29.5	30.5
1743	Oct	20.31	20	20.5	10.12	10	10.25	1.072	1.07	1.075	29.56	29.5	30
1743	Nov	20.59	20.5	20.75	10.17	10	10.38	1.077	1.07	1.08	29.5	29.5	29.5
1743	Dec	20.78	20.5	21	10.34	10.25	10.5	1.08	1.08	1.08	29.5	29.5	29.5
1744	Jan	20.81	20.5	21	10.34	10.25	10.5	1.085	1.08	1.09	29.62	29.5	30

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)		
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest
1744	Feb	20.87	20.75	21	10.31	10.25	10.38	1.09	1.09	1.09	29.91	29.75	30
1744	Mar	20.87	20.75	21	10.31	10.25	10.38	1.086	1.08	1.09	29.96	29.88	30
1744	April	20.81	20.75	21	10.44	10.38	10.5	1.091	1.09	1.095	30.06	30	30.13
1744	May	21	21	21	10.5	10.5	10.5	1.101	1.09	1.11	30.2	30	30.25
1744	June	21	21	21	10.31	10.25	10.5	1.108	1.105	1.11	30.11	30	30.25
1744	July	21.06	21	21.5	10.37	10.25	10.5	1.11	1.11	1.11	30.25	30.25	30.25
1744	Aug	21	21	21	10.37	10.25	10.5	1.112	1.11	1.115	30.25	30.25	30.25
1744	Sept	21.12	21	21.5	10.33	10.25	10.5	1.106	1.1	1.11	30.27	30.25	30.38
1744	Oct	21.33	21.25	21.5	10.34	10.25	10.5	1.107	1.1	1.11	30.27	30.25	30.38
1744	Nov	21.44	21.38	21.5	10.45	10.38	10.5	1.112	1.11	1.115	30.31	30.25	30.38
1744	Dec	21.5	21.5	21.5	10.5	10.5	10.5	1.113	1.11	1.115	30.34	30.25	30.38
1745	Jan	21.62	21.5	21.75	10.62	10.5	10.75	1.114	1.11	1.12	30.34	30.25	30.44
1745	Feb	21.62	21.5	21.75	10.62	10.5	10.75	1.115	1.115	1.115	30.4	30.38	30.44
1745	Mar	21.94	21.75	22	10.75	10.75	10.75	1.117	1.115	1.12	30.69	30.5	30.75
1745	April	21.22	20.75	21.75	10.62	10.25	10.75	1.112	1.105	1.12	30.64	30.38	30.88
1745	May	20.43	20	21	10.19	10	10.5	1.107	1.105	1.11	30.44	30.38	30.5
1745	June							1.109	1.105	1.115	30.45	30.38	30.5
1745	July	20	20	20	10	10	10	1.111	1.11	1.115	30.45	30.38	30.5
1745	Aug	20	20	20	10	10	10	1.112	1.11	1.115	30.44	30.38	30.5
1745	Sept	20	20	20	10	10	10	1.112	1.11	1.115	30.29	30.13	30.5
1745	Oct	20	20	20	10	10	10	1.119	1.115	1.125	30.2	30	30.38
1745	Nov	20	20	20	10	10	10	1.127	1.12	1.13	30.55	30.25	30.75
1745	Dec	20	20	20	10	10	10	1.131	1.13	1.135	30.77	30.75	30.88
1746	Jan	20	20	20	10	10	10	1.142	1.14	1.145	30.77	30.75	31
1746	Feb	20	20	20	10	10	10	1.14	1.14	1.14	30.87	30.75	31
1746	Mar	20	20	20	10	10	10	1.136	1.13	1.14	30.87	30.75	31
1746	April	20	20	20	10	10	10	1.132	1.13	1.135	30.87	30.75	31
1746	May	20	20	20	10	10	10	1.128	1.12	1.13	30.65	30.5	30.75
1746	June	20	20	20	10	10	10	1.125	1.12	1.13	30.66	30.5	30.75
1746	July	20	20	20	10	10	10	1.135	1.13	1.14	30.82	30.75	31
1746	Aug	20	20	20	10	10	10	1.145	1.14	1.15	30.94	30.88	31
1746	Sept	20	20	20	10	10	10	1.15	1.15	1.15	31	31	31
1746	Oct	20	20	20	10	10	10	1.15	1.15	1.15	31.19	31	31.25
1746	Nov	20	20	20	10	10	10	1.147	1.14	1.15	31.31	31.25	31.5
1746	Dec	20	20	20	10	10	10	1.14	1.14	1.14	31.62	31.25	31.75
1747	Jan	20	20	20	10	10	10	1.137	1.13	1.14	31.9	31.75	32
1747	Feb	20	20	20	10	10	10	1.132	1.13	1.135	32	32	32
1747	Mar	20	20	20	10	10	10	1.141	1.14	1.145	32	32	32
1747	April							1.143	1.14	1.15	32	32	32

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)		
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest
1747	May	22.75	22.75	22.75	11.5	11.5	11.5	1.152	1.145	1.16	32.06	32	32.25
1747	June	22.75	22.75	22.75	11.5	11.5	11.5	1.156	1.15	1.16	32	32	32
1747	July	22.77	22.75	23	11.55	11.5	11.75	1.165	1.16	1.17	32.15	32	32.25
1747	Aug	22.87	22.75	23	11.62	11.5	11.75	1.17	1.17	1.17	32.25	32.25	32.25
1747	Sept	22.94	22.75	23	11.55	11.5	11.63	1.17	1.17	1.17	32.25	32.25	32.25
1747	Oct	23	23	23	11.72	11.5	11.75	1.175	1.17	1.18	32.25	32.25	32.25
1747	Nov	22.87	22.75	23	11.62	11.5	11.75	1.173	1.17	1.18	32.19	32	32.25
1747	Dec	22.87	22.75	23	11.62	11.5	11.75	1.164	1.16	1.17	32.12	32	32.25
1748	Jan	22.87	22.75	23	11.62	11.5	11.75	1.165	1.16	1.17	32.25	32	32.38
1748	Feb	22.87	22.75	23	11.62	11.5	11.75	1.165	1.16	1.17	32.12	32	32.25
1748	Mar	22.87	22.75	23	11.62	11.5	11.75	1.164	1.16	1.17	32.3	32	32.5
1748	April	22.87	22.75	23	11.62	11.5	11.75	1.165	1.16	1.17	32.37	32.25	32.5
1748	May	22.87	22.75	23	11.62	11.5	11.75	1.169	1.16	1.18	32.37	32.25	32.5
1748	June	22.67	22.5	23	11.5	11.5	11.5	1.177	1.175	1.18	32.37	32.25	32.5
1748	July	22.62	22.5	22.75	11.5	11.5	11.5	1.177	1.175	1.18	32.37	32.25	32.5
1748	Aug	22.62	22.5	22.75	11.5	11.5	11.5	1.177	1.175	1.18	32.37	32.25	32.5
1748	Sept	22.62	22.5	22.75	11.5	11.5	11.5	1.178	1.175	1.18	32.37	32.25	32.5
1748	Oct	22.62	22.5	22.75	11.5	11.5	11.5	1.18	1.18	1.18	32.37	32.25	32.5
1748	Nov	22.62	22.5	22.75	11.53	11.5	11.75	1.18	1.18	1.18	32.37	32.25	32.5
1748	Dec	22.62	22.5	22.75	11.62	11.5	11.75	1.172	1.16	1.18	32.5	32.5	32.5
1749	Jan												
1749	Feb												
1749	Mar												
1749	April												
1749	May	22.62	22.5	22.75	11.62	11.5	11.75	1.177	1.175	1.18	32.75	32.75	32.75
1749	June	22.62	22.5	22.75	11.62	11.5	11.75	1.177	1.175	1.18	33	33	33
1749	July	22.62	22.5	22.75	11.62	11.5	11.75	1.178	1.175	1.18	33	33	33
1749	Aug	22.62	22.5	22.75	11.62	11.5	11.75	1.18	1.18	1.18	33	33	33
1749	Sept	22.56	22.5	22.75	11.62	11.5	11.75	1.18	1.18	1.18	33.09	33	33.25
1749	Oct	22.47	22.25	22.5	11.62	11.5	11.75	1.18	1.18	1.18	33.12	33	33.25
1749	Nov	22.5	22.5	22.5	11.62	11.5	11.75	1.18	1.18	1.18	33.12	33	33.25
1749	Dec	22.33	22	22.5	11.62	11.5	11.75	1.18	1.18	1.18	33.12	33	33.25
1750	Jan	22	22	22	11.62	11.5	11.75	1.177	1.175	1.18	33.12	33	33.25
1750	Feb	22	22	22	11.62	11.5	11.75	1.175	1.175	1.175	33.12	33	33.25
1750	Mar	22	22	22	11.62	11.5	11.75	1.175	1.175	1.175	33.12	33	33.25
1750	April	21.91	21.5	22	11.62	11.5	11.75	1.175	1.175	1.175	33.12	33	33.25
1750	May	21.52	21	21.75	11.62	11.5	11.75	1.175	1.175	1.175	33.12	33	33.25
1750	June	21.12	21	21.25	11.62	11.5	11.75	1.167	1.165	1.17	33.12	33	33.25
1750	July	20.87	20.75	21	11.37	11.25	11.5	1.162	1.16	1.165	33.12	33	33.25

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)		
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest
1750	Aug	20.67	20.5	21	11.37	11.25	11.5	1.161	1.15	1.165	33.12	33	33.25
1750	Sept	20.28	20	20.5	11.19	11	11.25	1.14	1.12	1.15	33.09	33	33.25
1750	Oct	20.12	20	20.25	11	11	11	1.117	1.115	1.12	33	33	33
1750	Nov	19.97	19.75	20.25	10.9	10.5	11	1.099	1.08	1.11	32.72	32.5	33
1750	Dec	19.87	19.75	20	10.65	10	11	1.075	1.07	1.08	32.52	32.25	32.75
1751	Jan	19.77	19.5	20	10.25	10	10.5	1.075	1.06	1.09	32.4	32	33
1751	Feb	19.62	19.5	19.75	10.25	10	10.5	1.075	1.07	1.08	32.87	32.75	33
1751	Mar	19.62	19.5	19.75	10.25	10	10.5	1.075	1.07	1.08	32.87	32.75	33
1751	April	19.62	19.5	19.75	10.25	10	10.5	1.081	1.07	1.09	32.87	32.75	33
1751	May	19.72	19.5	20	10.25	10	10.5	1.074	1.07	1.08	32.87	32.75	33
1751	June	19.87	19.75	20	10.25	10	10.5	1.082	1.07	1.09	32.87	32.75	33
1751	July	19.87	19.75	20	10.25	10	10.5	1.085	1.08	1.09	32.87	32.75	33
1751	Aug	19.87	19.75	20	10.25	10	10.5	1.085	1.08	1.09	32.87	32.75	33
1751	Sept	19.87	19.75	20	10.25	10	10.5	1.085	1.08	1.09	32.62	32.5	32.75
1751	Oct	19.87	19.75	20	10.71	10	11	1.076	1.07	1.09	32.25	32	32.75
1751	Nov	19.87	19.75	20	10.87	10.75	11	1.072	1.07	1.075	32.12	32	32.25
1751	Dec	19.87	19.75	20	10.87	10.75	11	1.072	1.07	1.075	32.37	32.25	32.5
1752	Jan	19.56	19	20	10.75	10.5	11	1.072	1.07	1.075	32.25	32	32.5
1752	Feb	19.75	19.5	20	10.87	10.5	11.25	1.075	1.07	1.08	32.33	32	32.5
1752	Mar	20	20	20	11.12	11	11.25	1.077	1.075	1.08	32.5	32.5	32.5
1752	April	19.9	19.5	20	10.97	10.5	11.25	1.081	1.08	1.085	32.37	32	32.5
1752	May	19.44	19.25	19.5	10.5	10.5	10.5	1.077	1.07	1.08	32.05	32	32.25
1752	June	19.55	19.25	19.75	10.4	10	10.5	1.074	1.07	1.08	32.11	32	32.25
1752	July	19.12	19	19.5	10	10	10	1.071	1.07	1.075	32.06	32	32.25
1752	Aug	19	19	19	10	10	10	1.067	1.06	1.07	31.87	31.5	32
1752	Sept	19	19	19	10	10	10	1.054	1.05	1.06	31.45	31	32
1752	Oct	19.16	19	19.25	10.16	10	10.25	1.048	1.045	1.05	30.31	30	30.5
1752	Nov	19.12	19	19.25	10.12	10	10.25	1.05	1.05	1.05	30.34	30	30.5
1752	Dec	19.12	19	19.25	10.12	10	10.25	1.05	1.05	1.05	30.05	30	30.5
1753	Jan	19.12	19	19.25	10.15	10	10.5	1.049	1.045	1.05	29.78	29.5	30
1753	Feb	19.12	19	19.25	10.16	10	10.5	1.051	1.05	1.055	29.75	29.63	30
1753	Mar	19.12	19	19.25	10.12	10	10.25	1.05	1.05	1.05	29.69	29.63	29.75
1753	April	19.12	19	19.25	10.12	10	10.25	1.05	1.05	1.05	29.69	29.63	29.75
1753	May	19.12	19	19.25	10.12	10	10.25	1.05	1.05	1.05	29.67	29.5	29.75
1753	June	19.12	19	19.25	10.12	10	10.25	1.052	1.05	1.06	29.62	29.5	29.75
1753	July	19.22	19	19.75	10	10	10	1.05	1.05	1.05	29.61	29.5	29.75
1753	Aug	19.31	19	19.75	10	10	10	1.05	1.05	1.05	29.69	29.63	29.75
1753	Sept	19.5	19.25	19.75	10	10	10	1.05	1.05	1.05	29.69	29.63	29.75
1753	Oct	19.4	19.25	19.75	10.05	10	10.25	1.05	1.05	1.05	29.66	29.63	29.75

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)		
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest
1753	Nov	19.37	19.25	19.5	10	10	10	1.05	1.05	1.05	29.63	29.63	29.63
1753	Dec	19.37	19.25	19.5	10.37	10.25	10.5	1.05	1.05	1.05	29.62	29.5	29.75
1754	Jan	19.37	19.25	19.5	9.949	9.75	10	1.05	1.05	1.05	29.67	29.5	29.75
1754	Feb	19.37	19.25	19.5	9.906	9.75	10	1.05	1.05	1.05	29.75	29.75	29.75
1754	Mar	19.37	19.25	19.5	10	10	10	1.057	1.055	1.06	29.81	29.75	29.88
1754	April	19.5	19.5	19.5	10.05	10	10.25	1.057	1.055	1.06	29.98	29.88	30.25
1754	May	19.59	19.5	19.75	10	10	10	1.057	1.055	1.06	29.95	29.88	30
1754	June	19.62	19.5	19.75	10.09	10	10.5	1.055	1.055	1.055	29.94	29.88	30
1754	July	19.62	19.5	19.75	10.37	10.25	10.5	1.055	1.055	1.055	29.94	29.88	30
1754	Aug	19.62	19.5	19.75	10.37	10.25	10.5	1.051	1.05	1.055	29.91	29.75	30
1754	Sept	19.52	19.5	19.63	10.37	10.25	10.5	1.051	1.05	1.055	29.86	29.75	30
1754	Oct	19.37	19	19.75	10.49	10	11	1.05	1.05	1.05	29.87	29.75	30
1754	Nov	19.59	19.5	19.75	10.5	10.5	10.5	1.05	1.05	1.05	29.86	29.75	30
1754	Dec	19.52	19.5	19.75	10.3	10.25	10.5	1.053	1.05	1.055	29.91	29.75	30
1755	Jan	19.62	19.5	19.75	10.25	10.25	10.25	1.055	1.055	1.055	29.94	29.88	30
1755	Feb	19.55	19.5	19.75	10.19	10	10.25	1.055	1.055	1.055	29.98	29.88	30.13
1755	Mar	19.56	19.5	19.63	10.06	10	10.25	1.055	1.055	1.055	30.14	30.13	30.25
1755	April	19.57	19.5	19.75	9.996	9.5	10.25	1.055	1.055	1.055	30.05	29.88	30.25
1755	May	19.62	19.5	19.75	10	10	10	1.055	1.055	1.055	29.91	29.75	30
1755	June	19.62	19.5	19.75	10	10	10	1.055	1.055	1.055	29.87	29.75	30
1755	July	19.62	19.5	19.75	10	10	10	1.055	1.055	1.055	29.97	29.75	30
1755	Aug	19.72	19.5	20	10	10	10	1.055	1.055	1.055	30	30	30
1755	Sept	19.5	19.5	19.5	10.22	10	10.75	1.055	1.055	1.055	30.05	30	30.13
1755	Oct	19.78	19.5	20	10.59	10.25	10.75	1.055	1.055	1.055	30	30	30
1755	Nov	19.87	19.75	20	10.5	10.25	10.75	1.055	1.055	1.055	30	30	30
1755	Dec	19.96	19.75	20.13	10.5	10.25	10.75	1.055	1.055	1.055	30	30	30
1756	Jan												
1756	Feb										30.62	30.5	30.75
1756	Mar							1.062	1.06	1.065	30.62	30.5	30.75
1756	April							1.062	1.06	1.065	30.62	30.5	30.75
1756	May				10.5	10.5	10.5	1.06	1.06	1.06	30.62	30.5	30.75
1756	June				10.5	10.5	10.5	1.06	1.06	1.06	30.62	30.5	30.75
1756	July	21.25	21.25	21.25				1.06	1.06	1.06	30.87	30.5	31.25
1756	Aug	20.75	20.75	20.75				1.06	1.06	1.06	31.05	31	31.25
1756	Sept	20.75	20.75	20.75				1.06	1.06	1.06	31	31	31
1756	Oct	20.75	20.75	20.75				1.062	1.06	1.07	31	31	31
1756	Nov	20.9	20.75	21	11	11	11	1.068	1.065	1.07	31.07	31	31.13
1756	Dec	21	21	21	11	11	11	1.07	1.07	1.07	31.13	31.13	31.13
1757	Jan	21.47	21.25	21.5	11.12	11	11.5	1.07	1.07	1.07	31.13	31.13	31.13

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)		
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest
1757	Feb	21.5	21.5	21.5	11	11	11	1.07	1.07	1.07	31.19	31.13	31.25
1757	Mar	21.7	21.5	22	10.8	10.5	11	1.06	1.06	1.06	31.6	31.5	31.75
1757	April	21.75	21.5	22	10.87	10.75	11	1.06	1.06	1.06	31.62	31.5	31.75
1757	May	21.9	21.5	22	10.87	10.75	11	1.067	1.06	1.075	32	31.5	32.25
1757	June	22	22	22	10.87	10.75	11	1.075	1.075	1.075	32.25	32.25	32.25
1757	July	23	23	23	11	11	11	1.092	1.085	1.1	32.25	32.25	32.25
1757	Aug	23.2	23	24	11	11	11	1.122	1.12	1.13	32.52	32.5	32.75
1757	Sept	24	24	24	11.37	11.25	11.5	1.15	1.13	1.17	32.62	32.5	32.75
1757	Oct	24	24	24	11.5	11.5	11.5	1.16	1.16	1.16	32.62	32.5	32.75
1757	Nov	24	24	24	11.6	11.5	11.75	1.172	1.16	1.19	33.17	32.5	34
1757	Dec	24	24	24	11.75	11.75	11.75	1.19	1.19	1.19	34	34	34
1758	Jan	24.85	24.75	25	12.55	12.25	12.75	1.186	1.18	1.19	34.2	34	34.5
1758	Feb	25.25	24.75	26	12.66	12.5	12.75	1.189	1.18	1.2	34.44	34	35
1758	Mar	26.4	26	26.75	13	12.75	13.25	1.235	1.22	1.26	35.37	35	36
1758	April	27	26.5	27.25	13.62	13.25	14	1.257	1.24	1.27	36.12	35.5	36.5
1758	May	27.22	27	27.5	13.75	13.5	14	1.268	1.25	1.28	36.25	36	36.5
1758	June	27.06	26.75	27.5	13.62	13.5	14	1.275	1.26	1.28	36.37	36	36.5
1758	July	26.56	26.25	27	13.12	13	13.5	1.282	1.28	1.3	36.5	36.5	36.5
1758	Aug	26.12	26	26.75	13	13	13	1.286	1.28	1.32	36.5	36.5	36.5
1758	Sept	26.09	26	26.25	13	13	13	1.31	1.3	1.32	36.5	36.5	36.5
1758	Oct	26	26	26	13.1	13	13.5	1.316	1.3	1.33	36.5	36.5	36.5
1758	Nov	25.81	25	26	13.25	13	13.5	1.327	1.32	1.34	36.69	36.5	37
1758	Dec	25.93	25	26.5	13.25	13	13.5	1.335	1.33	1.34	37.12	37	37.25
1759	Jan	26.5	26.5	26.5	13.65	13	14	1.335	1.33	1.34	37.12	37	37.25
1759	Feb	26.5	26.5	26.5	13.75	13.5	14	1.335	1.33	1.34	37.12	37	37.25
1759	Mar	26.5	26.5	26.5	13.75	13.5	14	1.335	1.33	1.34	37.12	37	37.25
1759	April	26.37	26.25	26.5	13.87	13.5	14	1.335	1.33	1.34	38.62	38.5	38.75
1759	May	26.45	26.25	26.5	13.75	13.5	14	1.335	1.33	1.34	39	38.5	39.5
1759	June	26.5	26.5	26.5	13.75	13.5	14	1.335	1.33	1.34	39.25	39	39.5
1759	July	26.5	26.5	26.5	14.5	14.5	14.5	1.335	1.33	1.34	39.25	39	39.5
1759	Aug	26.5	26.5	26.5	14.5	14.5	14.5	1.335	1.33	1.34	39.25	39	39.5
1759	Sept	26.5	26.5	26.5	14.5	14.5	14.5	1.335	1.33	1.34	39.25	39	39.5
1759	Oct	26.55	26.5	26.75	14.6	14.5	15	1.357	1.33	1.4	39.45	39	40
1759	Nov	26.62	26.5	26.75	14.75	14.5	15	1.39	1.38	1.4	39.75	39.5	40
1759	Dec	27.06	26.5	27.5	15	14.5	15.25	1.42	1.38	1.45	39.75	39.5	40
1760	Jan	27.8	27.5	28	15.45	15.25	15.5	1.45	1.45	1.45	41.94	39.5	42.5
1760	Feb	28	28	28	15.5	15.5	15.5	1.46	1.46	1.46	43	43	43
1760	Mar	29	28.5	29.5	15.75	15.75	15.75	1.47	1.46	1.48	43.37	43	43.5
1760	April	29.95	29.5	30.25	15.75	15.75	15.75	1.48	1.48	1.48	43.6	43.5	43.75

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)		
		Aver-age	Low-est	High-est	Aver-age	Low-est	High-est	Aver-age	Low-est	High-est	Aver-age	Low-est	High-est
1760	May	29.5	29	30	15.81	15.75	16	1.5	1.5	1.5	44.44	43.75	45
1760	June	30.25	30	30.5	16	16	16	1.5	1.5	1.5	45.12	45	45.5
1760	July	30	30	30	16	16	16	1.5	1.5	1.5	45.5	45.5	45.5
1760	Aug	31	31	31	16.25	16.25	16.25	1.5	1.5	1.5	46.25	46.25	46.25
1760	Sept	31	31	31	16.25	16.25	16.25	1.5	1.5	1.5	46.25	46.25	46.25
1760	Oct	31	31	31	16.25	16.25	16.25	1.5	1.5	1.5	46.25	46.25	46.25
1760	Nov	32	31.5	32.5	16.25	16.25	16.25	1.5	1.5	1.5	46.87	46.25	47.5
1760	Dec	33	33	33	17	17	17	1.52	1.52	1.52	47.5	47.5	47.5
1761	Jan	33.75	33.5	34	17.5	17.5	17.5	1.53	1.52	1.54	47.5	47.5	47.5
1761	Feb	34	34	34	17.5	17.5	17.5	1.53	1.52	1.54	48.12	47.5	48.75
1761	Mar	34.1	34	34.5	17.55	17.5	17.75	1.524	1.52	1.54	48.75	48.75	48.75
1761	April	35.12	34.5	35.5	17.94	17.75	18	1.565	1.54	1.58	49.68	48.75	50
1761	May	35.5	35.5	35.5	18	18	18	1.6	1.6	1.6	50	50	50
1761	June	35.8	35.5	36	18	18	18	1.61	1.6	1.65	50	50	50
1761	July	36.5	36.5	36.5	18	18	18	1.65	1.65	1.65	50	50	50
1761	Aug	36.5	36.5	36.5	18	18	18	1.675	1.65	1.7	50.56	50	50.75
1761	Sept	36.2	36	36.5	18	18	18	1.73	1.7	1.75	50.75	50.75	50.75
1761	Oct	36.56	36	36.75	18	18	18	1.75	1.75	1.75	50.75	50.75	50.75
1761	Nov	36.25	36	36.5	18	18	18	1.725	1.7	1.75	50.75	50.75	50.75
1761	Dec	36.5	36.5	36.5	18.5	18.5	18.5	1.72	1.7	1.75	50.75	50.75	50.75
1762	Jan	36.5	36.5	36.5	18.5	18.5	18.5	1.7	1.7	1.7	50.75	50.75	50.75
1762	Feb	36.87	36.5	37	18.75	18.5	19	1.725	1.7	1.75	50.75	50.75	50.75
1762	Mar	38.4	38	39	19	19	19	1.75	1.75	1.75	50.75	50.75	50.75
1762	April	39.75	39	40	19.5	19	20	1.75	1.75	1.75	50.75	50.75	50.75
1762	May	40	40	40	20	20	20	1.8	1.8	1.8	51	50.75	51.25
1762	June	41.09	40	42	20.8	20	21	1.804	1.8	1.82	51.25	51.25	51.25
1762	July	42.75	42	43	21.75	21	22	1.88	1.82	1.9	51.81	51.25	52
1762	Aug	43	43	43	22	22	22	1.959	1.9	2	52	52	52
1762	Sept	43	43	43	22	22	22	2	2	2	52	52	52
1762	Oct	48.49	48	50	24.2	23	27	2.09	2.06	2.12	52.25	52	52.5
1762	Nov	49.59	48	50	25.67	24	27	2.095	2	2.12	55	55	55
1762	Dec	45	45	45	24.25	24	25	2	2	2	55.61	55	57.5
1763	Jan	43.47	42	45	24.49	24	25	2	2	2	57.5	57.5	57.5
1763	Feb	42.73	42	45	23.24	22.5	24	2	2	2	57.5	57.5	57.5
1763	Mar	44.18	42	45	22.79	22.5	24	2	2	2	57.5	57.5	57.5
1763	April	42	42	42	21.25	21	22	2	2	2	57.5	57.5	57.5
1763	May	41.19	40	42	20.59	20	21	1.992	1.98	2	56.49	55	57.5
1763	June	39.75	39	40	19.75	19	20	1.995	1.98	2	55	55	55
1763	July	39.5	39	40	19.49	19	20	2	2	2	55	55	55

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)		
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest
1763	Aug	41	40.5	42	20.79	20	22	2	2	2	55	55	55
1763	Sept	42.75	42	43	22.49	22	23	2.04	2	2.08	55	55	55
1763	Oct	44.24	43	45	23.49	23	24	2.085	2.08	2.1	56.24	55	57.5
1763	Nov	45.74	45	47	23.24	22.5	24	2.125	2.1	2.15	56.24	55	57.5
1763	Dec	44.25	44	45	22.12	22	22.5	2.025	2	2.1	55	55	55
1764	Jan	44.4	44	45	22	22	22	2	2	2	55	55	55
1764	Feb	43.25	43	44	22.49	22	23	2	2	2	55	55	55
1764	Mar	42.25	42	43	22.81	22.75	23	2	2	2	55	55	55
1764	April	42.75	42	43	22.12	22	22.5	2	2	2	55	55	55
1764	May	43	43	43	22.99	22	23.5	2	2	2	55	55	55
1764	June	43	43	43	22.5	22.5	22.5	2.1	2.1	2.1	55	55	55
1764	July	43.2	43	44	22.6	22.5	23	2.1	2.1	2.1	55	55	55
1764	Aug	44.25	44	44.5	23.83	23.5	24	2.1	2.1	2.1	55	55	55
1764	Sept	45.37	45	45.5	23.75	23.5	24	2.125	2.1	2.15	55	55	55
1764	Oct	45.3	45	46.5	23.1	23	23.5	2.15	2.15	2.15	55	55	55
1764	Nov	46.62	46	47	23.75	23.5	24	2.15	2.15	2.15	55	55	55
1764	Dec	46	46	46	23.25	23	23.5	2.15	2.15	2.15	55	55	55
1765	Jan	45.2	45	46	23	23	23	2.15	2.15	2.15	55	55	55
1765	Feb	44.12	44	44.5	22.87	22.5	23	2.111	2	2.15	55	55	55
1765	Mar	44.25	44	44.5	22	22	22	2	2	2	55	55	55
1765	April	44.5	44.5	44.5	22	22	22	2	2	2	55	55	55
1765	May	46	45	46.5	22	22	22	2	2	2	55	55	55
1765	June	45.87	45	46	22	22	22	2	2	2	55	55	55
1765	July	46	46	46	22	22	22	2	2	2	55	55	55
1765	Aug	46	46	46	22.25	22	22.5	2	2	2	55	55	55
1765	Sept	46	46	46	22.5	22.5	22.5	2	2	2	55	55	55
1765	Oct	45.33	45	46	22.17	22	22.5	2	2	2	55	55	55
1765	Nov	40.66	40	42	20.06	18	21	2	2	2	55	55	55
1765	Dec	40	40	40	19.79	18	20	2	2	2			
1766	Jan	38.73	37	40	19.1	18	20	2	2	2			
1766	Feb	37.99	37	39	18.61	18	19.5	2	2	2			
1766	Mar	37.5	37	38	18.49	18	19	2	2	2			
1766	April	39.03	37	42	20.12	18	21.5	2	2	2			
1766	May	41.5	41	42	21.25	21	21.5	2	2	2			
1766	June	41.5	41	42	21.25	21	21.5	2	2	2			
1766	July	40.3	39	41	20.39	19	21	2	2	2			
1766	Aug	39.5	39	40	19.49	19	20	2	2	2			
1766	Sept	37.2	36	38	18.5	18	19	1.996	1.98	2			
1766	Oct	36.5	36	37	18	18	18	1.99	1.98	2			

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)		
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest
1766	Nov	35.68	35	37	17.43	17	18	1.944	1.9	2			
1766	Dec	34.29	33.5	35.5	17.15	17	17.5	1.849	1.8	1.9			
1767	Jan	33.5	33.5	33.5	17	17	17	1.79	1.78	1.8			
1767	Feb	33.37	33	33.5	16.75	16.5	17	1.78	1.78	1.78			
1767	Mar	33.75	33.5	34	16.87	16.5	17.25	1.76	1.76	1.76			
1767	April	33.75	33.5	34	16.87	16.5	17.25						
1767	May	33.75	33.5	34	16.87	16.5	17.25						
1767	June	33.6	33	34	16.7	16.5	17.25						
1767	July	32.5	32	33	16.21	15.75	16.75						
1767	Aug	30.55	27	32	15.12	14	15.75						
1767	Sept	26.85	26.5	27	13.25	13	13.5						
1767	Oct	24.49	24	25	12	11.75	12.25						
1767	Nov	24.25	24	25	11.87	11.75	12						
1767	Dec	24	24	24	12.03	11.75	12.5						

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)			1 daler s.m. in plates in daler s.m.
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	
1768	Jan	24	24	24										
1768	Feb	22	22	22										
1768	Mar	22	22	22				1.167	1.167	1.167				
1768	Apr							1.154	1.15	1.167				
1768	May	22	22	22				1.163	1.15	1.167	32	32	32	
1768	June	22	22	22	12	12	12	1.167	1.167	1.167	32	32	32	
1768	July	24.81	24.25	25.5	12.62	12.5	12.75	1.167	1.167	1.167				
1768	Aug	25.32	25	25.5	13.1	12.75	13.25	1.25	1.25	1.25	30.5	30.5	30.5	1.383
1768	Sept	25.25	25	25.5	13.12	13	13.25	1.25	1.25	1.25	30.5	30.5	30.5	1.385
1768	Oct	25.75	25.5	26	12.84	12.5	13							1.356
1768	Nov	26.33	26	26.5	13	13	13							1.372
1768	Dec	27.25	27	27.5	14	14	14							1.478
1769	Jan	27.5	27.5	27.5	14	14	14				33	33	33	1.478
1769	Feb	27.5	27.5	27.5	13.87	13.5	14	1.333	1.333	1.333	33	33	33	1.464
1769	Mar							1.333	1.333	1.333				

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)			1 daler s.m. in plates in daler s.m.
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	
1769	Apr	26.8	26.5	27	13.92	13.5	14	1.332	1.33	1.333				1.469
1769	May	26.75	26.5	27	13.62	13.5	14	1.331	1.33	1.333	34	34	34	1.438
1769	June							1.333	1.333	1.333	34	34	34	
1769	July	28	28	28	15.75	15.5	16	1.333	1.333	1.333	34	34	34	1.662
1769	Aug	28.89	28	30	16.02	15.5	16.5	1.333	1.333	1.333				1.62
1769	Sept	29.75	29.5	30	16.21	16	16.5	1.5	1.5	1.5				1.621
1769	Oct				17.06	17	17.13	1.5	1.5	1.5				1.706
1769	Nov				16.87	16.75	17	1.5	1.5	1.5				1.687
1769	Dec				16.87	16.75	17	1.5	1.5	1.5				1.687
1770	Jan	30.7	30	31	17.59	16.75	18	1.505	1.5	1.53				1.759
1770	Feb	30	30	30	17.37	17.13	17.75							1.737
1770	Mar	30	30	30	16.88	16	17							1.688
1770	Apr				16.96	16.75	17							1.696
1770	May	31.75	31.5	32	16.9	16.75	17							1.69
1770	June	31.12	31	31.5										
1770	July	31	31	31	17.18	16.75	18							1.718
1770	Aug				17.5	17.5	17.5							1.75
1770	Sept	34.5	34.5	34.5	17.37	17.25	17.5							1.737
1770	Oct	33.25	33.25	33.25	17.35	17.25	17.5							1.735
1770	Nov	33	33	33	17.37	17.25	17.5	1.655	1.65	1.66				1.737
1770	Dec				17.25	17.25	17.25	1.655	1.65	1.66				1.725
1771	Jan	33.25	33.25	33.25	17.55	17.25	17.75	1.655	1.65	1.66				1.852
1771	Feb	33.62	33.25	34	17.75	17.75	17.75							1.874
1771	Mar	33.56	33.5	34	17.42	17.25	17.5							1.838
1771	Apr	33.5	33.5	33.5	17.19	17	17.25							1.814
1771	May	32.5	32.5	32.5	16.5	16.5	16.5							1.742
1771	June	32.37	32	32.5	16.25	16	16.5							1.715
1771	July	33	33	33	16.44	16.25	16.63							1.735
1771	Aug	33	33	33	16.58	16.5	17.16							1.75
1771	Sept	32.87	32.5	33	16.47	16.25	16.5							1.738
1771	Oct	32.5	32.5	32.5	16.37	16.25	16.5							1.728
1771	Nov	33	33	33	16.75	16.75	16.75							1.768
1771	Dec	33.17	33	33.5	16.94	16.75	17.13							1.788
1772	Jan	33.25	33	33.5	17.06	17	17.13							1.801
1772	Feb	33.25	33	33.5										
1772	Mar													
1772	Apr				17.62	17.5	17.75							1.86
1772	May				17.81	17.5	18							1.88
1772	June				18	18	18							1.9

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)			1 daler s.m. in plates in daler s.m.
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	
1772	July	35	34.5	35.5	18.37	18	19							1.939
1772	Aug	35	34.5	35.5	19	19	19							2.006
1772	Sept	33.37	33	34.5	18.77	18.75	18.88							1.981
1772	Oct	34.37	33.5	34.5	18.72	18.63	18.75							1.976
1772	Nov	34.5	34.5	34.5	18.88	18.88	18.88	1.6	1.6	1.6				1.992
1772	Dec	36.12	36	36.25	19.4	19.25	19.5							2.048
1773	Jan	36.12	36	36.25	19.44	19.38	19.5							2.052
1773	Feb	36.12	36	36.25	19.44	19.38	19.5							2.052
1773	Mar	39.5	39	40	20.71	20	21.5							2.186
1773	Apr	39.25	39	40	20.57	19.75	21.5							2.171
1773	May				20.87	20.75	21							2.203
1773	June	39.42	39	39.75	21	21	21							2.217
1773	July	39.94	39.5	40	20.73	20.5	20.88							2.188
1773	Aug	39.85	39	40	20.51	20.25	20.63							2.165
1773	Sept	39.31	39	40	20.31	20.25	20.38							2.144
1773	Oct	39.87	39	40	20.75	20.31	21							2.191
1773	Nov	40	40	40	21.06	21	21.13	1.986	1.973	2				2.223
1773	Dec	40	40	40	21.13	21.13	21.13	1.986	1.973	2				2.23
1774	Jan	39.87	39.5	40	21.44	21.25	21.5	1.986	1.973	2				2.263
1774	Feb	39.75	39.5	40	21.31	21.25	21.5	1.986	1.973	2				2.25
1774	Mar	39.75	39.5	40	21.25	21.25	21.25	1.986	1.973	2				2.123
1774	Apr	39.75	39.5	40	20.41	20.38	20.5	1.986	1.973	2				1.965
1774	May	39.15	39	39.5	19.75	19.5	20.25	1.986	1.973	2				1.902
1774	June	39	39	39	19.5	19.5	19.5	1.986	1.973	2				1.878
1774	July	38.75	38.5	39	19.31	19.25	19.5	1.986	1.973	2				1.86
1774	Aug	36.75	36.5	37				1.986	1.973	2				
1774	Sept	36.56	36.5	37	18.5	18.5	18.5	1.986	1.973	2				1.781
1774	Oct	36.22	36	36.5	18.5	18.5	18.5	1.986	1.973	2				1.781
1774	Nov	36.12	36	36.25	18.5	18.5	18.5	1.986	1.973	2				1.781
1774	Dec	36.12	36	36.25	18.75	18.75	18.75	1.986	1.973	2				1.806
1775	Jan	36.12	36	36.25	18.75	18.75	18.75	1.986	1.973	2				1.806
1775	Feb	36.5	36.5	36.5				1.986	1.973	2				
1775	Mar	36.5	36.5	36.5				1.986	1.973	2				
1775	Apr	36.5	36.5	36.5				1.993	1.973	2				
1775	May	35.25	35.25	35.25	17.88	17.88	17.88	2	2	2				
1775	June	35.75	35.75	35.75	17.88	17.88	17.88	2	2	2				
1775	July				17.88	17.88	17.88	2	2	2				

Table A4.4 (cont.). *Monthly exchange rates between Swedish currency units 1705–76.*

Year	Month	1 ducat in daler kopparmynt (par value 18 daler k.m.)			1 riksdaler in daler kopparmynt (par value 9 daler k.m.)			1 öre courant in öre silvermynt (par value 1 öre s.m.)			1 carolin in öre silvermynt (par value 25 öre s.m.)			1 daler s.m. in plates in daler s.m.
		Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	Average	Lowest	Highest	
1775	Aug	36	36	36	18	18	18	2	2	2				1.667
1775	Sept	35.83	35.5	36	17.83	17.5	18	2	2	2				1.651
1775	Oct	35.5	35.5	35.5	17.5	17.5	17.5	2	2	2				1.62
1775	Nov	35.5	35.5	35.5	17.5	17.5	17.5	2	2	2				1.62
1775	Dec	35.5	35.5	35.5	17.5	17.5	17.5	2	2	2				1.62
1776	Jan	35.5	35.5	35.5	17.5	17.5	17.5	2	2	2				1.62
1776	Feb	35.5	35.5	35.5	17.59	17.5	18	2	2	2				1.629
1776	Mar	35.5	35.5	35.5	17.87	17.75	18							1.655
1776	Apr	35.45	35.25	35.5	17.89	17.75	18							1.656
1776	May	35.25	35.25	35.25	17.94	17.88	18							1.661
1776	June	35.25	35.25	35.25	18	18	18							1.617
1776	July	35.25	35.25	35.25	18	18	18	1.833	1.833	1.833				1.617
1776	Aug	35.25	35.25	35.25	18	18	18	1.833	1.833	1.833				1.617
1776	Sept	35.25	35.25	35.25	18	18	18	1.833	1.833	1.833				1.617
1776	Oct	35.25	35.25	35.25	18	18	18	1.833	1.833	1.833				1.617
1776	Nov	35.25	35.25	35.25	18	18	18	1.833	1.833	1.833				1.617
1776	Dec	35.25	35.25	35.25	18	18	18	1.833	1.833	1.833				

Sources: 'Växelkurser å Stockholms börs. Primärtabeller (1705–)/1740–1803' (Riksbankens arkiv) and Stockholms stads priscourant (Kungliga biblioteket, Stockholms stadsarkiv and Wahrendorff-ska arkivet). The monthly average is calculated as geometric.

Table A4.5. *The premium (agio) on banco notes (in per cent) relative to riksgälds notes in 1789–1803 according to various sources.*

Year	Noted premium (agio):				Premium based on foreign exchange rate quotations				Price differences	This study**
	Wallroth (1918, p. 149)	Mårtensson (1958, pp. 20-25)	Ahlström (1972, p. 133)	Ss, O:1, f. 364–5	Ahlström (1972, p. 134), on Hamburg	Ahlström (1972, p. 134), on 3 currencies*	Ss, O:1, f. 364–5, on Hamburg	Mårtensson (1958, p. 26), on Hamburg)	von Schwerin (1903, p. 43)	
1789			1.5				7.1			1.5
1790	6	5.5	8.8				0.9		8.3	7.9
1791	6	12.1	10.2				4.9		8.4	11.4
1792	10	10.1					3.4		7.9	10.6
1793	14	11.4	12.1	12.5			5.5		18.8	11.4
1794	22	21.1	21.1	16.5			8.6		18.8	20.9
1795	10	11.6	11.8	14			11.6		16.3	12.1
1796	10	10.3	10.3	10.5			10.9		16.3	10.2
1797	14	11.4	10	10	4.4	4.8	2.9		18.7	10.5
1798	23.5	20.9	20.3	18.5	10.2	10.8	30.1		56.3	21.8
1799	50	44.0			41.8	41.1	45.8	46.1	56.1	41.8
1800	47	43.4			38.9	40.5	47.4	44.4	56.2	44.5
1801	48	55.2			44.9	46.8	42.9	56.0	58.3	49.1
1802	50	53.5			48.3	49.6	48.8	56.9	56.3	51.3
1803	50				49.7	50.8	55.4			50.9

* Average of the premiums calculated according to exchange rate quotations on Hamburg, London and Amsterdam.

** See Table A4.6.

Abbreviation: Ss – Sandbergska samlingen (Riksarkivet).

Table A4.6. *Monthly premium (agio) on banco notes (in per cent) relative riksgälds notes 1789–1803.*

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual geometric average**
1789							1.2	1.8					1.5
1790	7.3	6.3	4.0	5.9	6.0	5.8	6.6	9.9	8.5	11.5	11.7	12.0	7.9
1791	11.5	10.9	11.0	11.1	11.1	12.7	11.6	12.2	12.6	11.2	10.6	10.2	11.4
1792	10.5	10.5	10.5	10.5	10.3	10.6	10.5	10.5	10.6	10.5	10.8	10.7	10.6
1793	10.7	11.2	11.3	11.4	11.6	11.0	11.2	12.2	11.2	11.7	11.4	12.8	11.4
1794	14.9	21.3	19.8	21.0	22.0	21.8	22.2	22.6	22.7	22.1	22.1	19.1	20.9
1795	17.1	17.1	16.2	13.3	11.6	10.2	10.2	10.1	10.1	10.0	10.1	10.1	12.1
1796	10.0	10.3	10.0	10.6	10.7	10.4	10.2	10.2	10.3	10.2	10.1	10.2	10.2
1797	10.0	10.1	10.1	10.0	10.3	10.6	10.5	10.9	10.7	11.2	10.3	12.0	10.5
1798	12.0	17.8	17.7	19.3	20.9	19.1	19.7	23.9	23.8	26.7	26.6	36.4	21.8
1799	36.6	35.7	33.5	32.6	39.2	40.9	44.5	44.0	44.8	45.8	55.0	51.3	41.8
1800	57.3	61.5	46.9	42.0	42.0	38.1	39.1	38.3	42.6	43.0	43.5	41.9	44.5
1801	40.3	53.0	46.0	50.4	43.5	42.2	46.7	50.7	52.6	54.4	56.1	54.3	49.1
1802	49.5	47.5	47.4	53.2	50.8	52.8	52.5	51.7	52.3	51.6	54.3	52.7	51.3
1803	50.4	51.2	50.1	51.0	51.8	54.4	52.3	49.5	50*	50*	50*	50*	50.9

Sources: See footnote 167.

* The premium was fixed at 50 per cent as of 29th August 1803.

** See footnote 7.

Table A4.7. *Riksdaler in marks 1534–1776.*

Year	Source	Official rate	Market rate	Lowest	Highest
1534	Based on silver contents of daler and mark		3.169		
1535	Ss, O:1, f. 70 and 1784.		3.688	3.375	4
1536	Ss, O:1, f. 72, and OO, f. 35		3.5	3	4
1537	Median of previous and next year		3.25		
1538	Hallenberg (1798, p. 139)		3		
1539	Median of previous and next year		3.5		
1540	Ss, O:1, f. 84		4		
1541	Ss, O:1, f. 74 and 1783, and OO, f. 173.		3.5	3	4
1542	Ss, O:1, f. 1774, and OO, f. 173.		3		
1543	Ss, O:1, f. 78, and OO, f. 173.		3		
1544	Median of previous and next year		3.5		
1545	Ss, O:1, f. 81, 83 and 1783, and OO, f. 170		4	3.5	4.125
1546	Ss, O:1, f. 83 and 1783, and OO, f. 170		4		
1547	Heckscher (1935, pp. 211–2), *Sst 1544–48* (1936, p. 266)		4	4	4.25
1548	Ss, O:1, f. 84 and 1783, *Sst 1544–48* (1936, p. 266)	3.375	4		
1549	Ss, O:1, f. 85; RAs ämnessamlingar, Misc. 26 Myntväsen vol 4		4.125	4	4.25
1550	Heckscher (1935, pp. 211–2), Ss, O:1, f. 87 and 1783, Hallenberg (1798, p. 284), Forssell (1872, p. 87).	3.5	3.875	3.5	4.5
1551	Heckscher (1935, pp. 211–2)		3.5		
1552	Median of previous and next year		3.5		
1553	Heckscher (1935, pp. 211–2), Ss, O:1, f. 89, 90 and 1783		3.5		
1554	Heckscher (1935, pp. 211–2)		4		
1555	Heckscher (1935, pp. 211–2), *Vsat 1577–1610* (1952, p. 70)		3.5		
1556	Ss, O:1, f. 93 and 1783		3.5		
1557	Heckscher (1935, pp. 211–2), Ss, O:1, f. 94–96, 98 and 1783, Hallenberg (1798, p. 313)		3.5	3	3.75
1558	Heckscher (1935, pp. 211–2), Hallenberg (1798, p. 313)		3.625	3.5	3.75
1559	Heckscher (1935, pp. 211–2), Ss, O:1, f. 99 and 1783, and OO 734, Hallenberg (1798, p. 313)		3.750	3.5	3.75
1560	Ss, O:1, f. 100, 1774 and 1783, and OO, f. 176, Hallenberg (1798, pp. 313–4)		3.750	3.5	4
1561	Hallenberg (1798, p. 314), Ss, OO, f. 743		4		
1562	Hallenberg (1798, p. 314)		4		
1563	Riksarkivets ämnessamlingar. Misc. 26 Myntväsen vol 4		4.5		
1564	Ss, O:1, f. 100 and 102, and OO, f. 40		5	4	6.5
1565	Based on silver contents		6.187		
1566	Based on silver contents. See also Wallroth (1918, pp. 28–9)		6.187		
1567	Wallroth (1918, pp. 28–9), Ss, O:1 , f. 102, 107 and 1783		6.5	5	8
1568	Wallroth (1918, pp. 28–9), 7 marks in Ss, O:1, f. 102		7.5	7	8

Table A4.7 (cont.). *Riksdaler in marks 1534–1776.*

Year	Source	Official rate	Market rate	Lowest	Highest
1569	Ss, O:1 , f. 107, and OO, f. 42		9	8	10
1570	Ss, O:1 , f. 107		10		
1571	Odén (1955, pp. 237 and 256), Ss, O:1, f. 104 and 107, and OO, f. 42		13.250	10	20
1572	Odén (1955, p. 237), and Ss, OO, f. 50		20	8	25
1573	Odén (1955, pp. 237–8), Ss, O:1 , f. 108 and 109		26	24	28.375
1574	Odén (1955, p. 238)		32		
1575	Odén (1955, p. 240), Ss, O:1 , f. 110 and 111, *Sst 1568–75* (1941, pp. 378, 544 and 615)		28	26	32
1576	Odén (1955, p. 241), *Sst 1568–75* (1941, pp. 378, 544 and 615)	4	26* (4**)		
1577	Odén (1955, p. 241)	4	4.250		
1578	Ss, O:1 , f. 119	4	4.460		
1579	Odén (1955, p. 241)	4	4.250		
1580	Odén (1955, p. 241), Ss, O:1 , f. 126 and 1833	4	4.250		
1581	Odén (1955, p. 241) and Ss, O:1 , f. 1833	4	4.250		
1582	Odén (1955, p. 245)	4	4.250		
1583	Odén (1955, p. 241)	4	4.250		
1584	Odén (1955, p. 241)	4	4.250		
1585	Odén (1955, p. 241)	4	4.250		
1586	Ss, O:1 , f. 128 and 129	4	4.5		
1587	Odén (1960, p. 207), *Vsat 1577–1610* (1952, p. 127)	4	4.5		
1588	Odén (1960, p. 207), *Vsat 1577–1610* (1952, p. 133)	4	4.5		
1589	Ss, O:1 , f. 130	4	4.5		
1590	Median of previous and next year	4	4.65		
1591	Odén (1960, p. 210)	4	4.8		
1592	*Sst från år 1592* (1939, part I, 1592–95, pp. 8, 25 and 51)	4	15.75	10.125	18
1593	Wallroth (1918, pp. 24 and 50)	4.5	18* (4.5**)		
1594	Ss, O:1 , f. 137	4.5	4.5		
1595	Odén (1960, p. 210)	4.5	4.444		
1596	*Sst från år 1592* (1954, part II, 1596–99, p. 90).	4.5	4.5		
1597	*Sst från år 1592* (1963, vol. VI, 1605–08, p. 14)	4.5	4.5		
1598	*Sst från år 1592* (1954, vol. II, 1596–99, p. 216)	4.5	4.5		
1599	Ss, O:1 , f. 1860	4.5	4.480		
1600	Wallroth (1918, p. 50)	4.5	4.5		
1601	Ss, OO , f. 185, *Sst från år 1592* (1957, part II, 1601–02, p. 149)	4.5	4.6875	4.5	4.875
1602	Ss, O:1 , f. 142	4.5	4.5		
1603	Wallroth (1918, p. 50	4.5	4.5		
1604	Ss, O:1 , f. 145 and 147, and OO, f. 593	4.5	4.550	4.5	4.75

Table A4.7 (cont.). *Riksdaler in marks 1534–1776.*

Year	Source	Official rate (mark koppar-mynt after 1624)	Market rate (mark koppar-mynt after 1624)	Lowest	Highest
1605	Ss, O:1 , f. 145 and 148	4.5	4.5		
1606	Ss, O:1 , f. 161 assumes 1 slagen daler = 4.5 as late as 1610	4.5	4.5		
1607	Ss, O:1 , f. 161 assumes 1 slagen daler = 4.5 as late as 1610. 1607 års myntplacat 13th of April 1 rdr = 4 1/2 mark according to Ss, O:1 , f. 1434.	4.5	4.5		
1608	*Sst från år 1592* (1963, vol. VI, 1605–08, p. 302)	4.5	5.250		
1609	Interpolation.	4.5	5.250		
1610	Interpolation.	4.5	5.250		
1611	Ss, O:1 , f. 162, and OO, f. 186	4.5	6		
1612	Ss, O:1 , f. 164, and OO, f. 595	4.5	6		
1613	Stierndstedt (1863, p. 12)	4.5	7		
1614	Ss, O:1 , f. 169, and OO, f. 595	4.5	6.250	6	6.5
1615	Ss, O:1 , f. 171 and 1434	4.5	6.5		
1616	Ss, O:1 , f. 172	4.5	6.5		
1617	Ss, O:1 , f. 173	4.5	6.375	6.25	6.5
1618	Ss, O:1 , f. 174 and 175	4.5	6.625	6.5	6.75
1619	Wallroth (1918, p. 61) and Ss, O:1 , f. 1434	4.5 (6.5)	6.5		
1620	Ss, O:1 , f. 182	6.5	6.5		
1621	Ss, O:1 , f. 1466, and OO, f. 595	6.5	6.5		
1622	Ss, O:1 , f. 189	6.5	6.583		
1623	Ss, O:1 , f. 599	6.5	6.5		
1624	Wolontis (1936, p. 68)	6.5	6.5		
1625	Ss, O:1 , f. 197	6.5	6.667		
1626	Wolontis (1936, p. 66)	6.5	7		
1627	Swenne (1933, p. 195)	6.5	7		
1628	Swenne (1933, p. 196), Stiernstedt (1863, p. 97)	6.5	9.5		
1629	Swenne (1933, p. 196)	6.5	14.5		
1630	Swenne (1933, p. 196)	6.5	15.750		
1631	Swenne (1933, p. 196)	6.5	16.240	15.5	17
1632	Swenne (1933, p. 196)	6.5	15.132	14	16.5

Table A4.7 (cont.). *Riksdaler in marks 1534-1776.*

Year	Source	Official rate, mark koppar-mynt	Market rate, mark koppar-mynt	Lowest	Highest
1633	Swenne (1933, p. 196)	6.5 (12)	14.491	12	17.5
1634	Swenne (1933, p. 196)	12	12.961	12	14
1635	Swenne (1933, p. 196)	12	13.565	12	16
1636	Swenne (1933, p. 196)	12	13		
1637	Swenne (1933, p. 196)	12	13.491	13	14
1638	Swenne (1933, p. 196), *Vendels sockens dombok 1615–1645* (1925, p. 138)	12	13		
1639	Swenne (1933, p. 196), Ss, OO, f. 612	12	14.5	14	15
1640	Wolontis (1936)	12	15	15	15
1641	Wolontis (1936)	12	15	15	15
1642	Wolontis (1936)	12	15	15	15
1643	Wolontis (1936)	12 (15)	15	15	15
1644	Wolontis (1936)	15	15.021	15	15.25
1645	Wolontis (1936)	15	16	16	16
1646	Wolontis (1936)	15	15.789	15	16
1647	Wolontis (1936)	15	15.041	15	15.5
1648	Wolontis (1936)	15	15.575	15	16
1649	Wolontis (1936)	15	16	16	16
1650	Wolontis (1936)	15	16	16	16
1651	Wolontis (1936)	15	16	16	16
1652	Wolontis (1936)	15	16	16	16
1653	Wolontis (1936)	15	16	16	16
1654	Wolontis (1936)	15	16	16	16
1655	Wolontis (1936)	15	16.301	16	16.75
1656	Wolontis (1936)	15	16.562	16.5	16.625
1657	Wolontis (1936)	15	16.695	16	17
1658	Wolontis (1936)	15	17.031	17	17.25
1659	Wolontis (1936)	15	17.457	17.125	17.75
1660	Wolontis (1936)	15	17.726	17.25	18
1661	Wolontis (1936)	15	18.187	18	18.25
1662	Wolontis (1936)	15	18.25	18.25	18.25
1663	Wolontis (1936)	15	18.56	18.25	19
1664	Wolontis (1936)	15	19.907	19	21
1665	Wolontis (1936)	15 (19.5)	21.207	21	21.75
1666	Wolontis (1936)	19.5	21	21	21
1667	Wolontis (1936)	19.5	21	21	21
1668	Wolontis (1936)	19.5	21.047	21	21.25
1669	Wolontis (1936)	19.5	21.031	21	21.25
1670	Wolontis (1936)	19.5	21	21	21

Table A4.7 (cont.). *Riksdaler in marks 1534-1776.*

Year	Source	Official rate, mark koppar-mynt	Market rate, mark koppar-mynt	Lowest	Highest
1671	Wolontis (1936)	19.5	21	21	21
1672	Wolontis (1936)	19.5	21	21	21
1673	Wolontis (1936)	19.5	21.068	21	21.3125
1674	Wolontis (1936)	19.5	21.533	21	22
1675	Wolontis (1936)	19.5	23.398	22	26.375
1676	Wolontis (1936)	19.5	24.978	24	26
1677	Wolontis (1936)	19.5	26.164	25.75	26.75
1678	Wolontis (1936)	19.5	26.833	26.75	27
1679	Wolontis (1936)	19.5	27	27	27
1680	Wolontis (1936)	19.5	27.135	27	27.27
1681	Wolontis (1936)	19.5 (24)	24.884	22.56	27.27
1682	Wolontis (1936)	24	24.979	24.75	25
1683	Wolontis (1936)	24	25.14	25	25.4375
1684	Wolontis (1936)	24	25	25	25
1685	Wolontis (1936)	24	25.062	25	25.06242
1686	Wolontis (1936)	24	24.241	24	25.125
1687	Wolontis (1936, p. 174)	24	25.25		
1688	Wolontis (1936, p. 174)	24	25.25		
1689	Wolontis (1936, p. 174)	24	25.25		
1690	Wolontis (1936, p. 174)	24	25.25		
1691	Ss, O:1 , f. 328	24	24.749	24.5	25
1692	Ss, O:1 , f. 329	24	25		
1693	Ss, O:1 , f. 1780	24	24.75		
1694	Ss, O:1 , f. 1780	24	25		
1695	Ss, OO , f. 653	24	25		
1696	Based on Hamburger banco	24	27.016		
1697	Ss, O:1 , f. 335	24	27.187	27	27.375
1698	Based on Hamburger banco	24	26.535		
1699	Based on Hamburger banco	24	24.864		
1700	Based on Hamburger banco	24	25.747		
1701	Based on Hamburger banco	24	24.989		
1702	Based on Hamburger banco	24	24.611		
1703	Based on Hamburger banco	24	26.463		
1704	Based on silver contents	24	26.244		
1705	Riksbankens arkiv	24	26.186	26	26.25
1706	Riksbankens arkiv	24	26.259	26	26.5
1707	Riksbankens arkiv	24	26.146	26	26.25
1708	Ss, O:1 , f. 335	24	26.25		
1709	Based on silver contents	24	26.244		

Table A4.7 (cont.). *Riksdaler in marks 1534-1776.*

Year	Source	Official rate, mark koppar-mynt	Market rate, mark koppar-mynt	Lowest	Highest
1710	Based on silver contents	24	26.244		
1711	Ss, O:1 , f. 344	24	26		
1712	Based on silver contents	24	26.244		
1713	Based on silver contents	24	26.244		
1714	Based on Hamburger banco	24	25.723		
1715	Ss, O:1 , f. 345	24	25		
1716	Ss, O:1 , f. 347	24	27.56* (26**)		
1717	Interpolation, based on Hamburger banco	24	38.386* (34.273**)		
1718	Interpolation, based on Hamburger banco	24 (36)	60.371* (52.625**)		
1719	Interpolation, based on Hamburger banco	36	41.405		
1720	Ss, O:1 , f. 580 and 1251	36	40.314	39	42
1721	Interpolation	36	37.775		
1722	Interpolation	36	38.103		
1723	Interpolation	36	36.576		
1724	Interpolation	36	36.44		
1725	Sjöstrand (1908, p. 17)	36	34		
1726	Interpolation	36	34.712		
1727	Interpolation	36	35.696		
1728	Riksbankens arkiv	36	36		
1729	Riksbankens arkiv	36	36		
1730	Interpolation	36	36		
1731	Interpolation	36	36		
1732	Interpolation	36	36		
1733	Riksbankens arkiv	36	36	36	36
1734	Riksbankens arkiv	36	36.634	36.5	37
1735	Sjöstrand (1908, p. 17)	36	36.75		
1736	Riksbankens arkiv	36	37.614	37.5	38
1737	Interpolation	36	37.234		
1738	Sjöstrand (1908, p. 48)	36	37.25		
1739	Interpolation	36	37.161		
1740	Sveriges Riksbank (1931)	36	37.779	37.5	38
1741	Sveriges Riksbank (1931)	36	38.02	37.5	38.5
1742	Sveriges Riksbank (1931)	36	38.456	38	39
1743	Sveriges Riksbank (1931)	36	40.025	38	42
1744	Sveriges Riksbank (1931)	36	41.531	41	42

Table A4.7 (cont.). *Riksdaler in marks 1534-1776.*

Year	Source	Official rate, mark koppar-mynt	Market rate, mark koppar-mynt	Lowest	Highest
1745	Sveriges Riksbank (1931)	36	40.949	40	43
1746	Sveriges Riksbank (1931)	36	40	40	40
1747	Sveriges Riksbank (1931)	36	44.384	40	47
1748	Sveriges Riksbank (1931)	36	46.258	46	47
1749	Sveriges Riksbank (1931)	36	46.497	46	47
1750	Sveriges Riksbank (1931)	36	45.389	42	47
1751	Sveriges Riksbank (1931)	36	41.55	40	44
1752	Sveriges Riksbank (1931)	36	41.643	40	45
1753	Sveriges Riksbank (1931)	36	40.411	40	42
1754	Sveriges Riksbank (1931)	36	40.795	39	44
1755	Sveriges Riksbank (1931)	36	40.759	38	43
1756	Sveriges Riksbank (1931)	36	42.97	42	44
1757	Sveriges Riksbank (1931)	36	44.572	42	47
1758	Sveriges Riksbank (1931)	36	52.618	49	56
1759	Sveriges Riksbank (1931)	36	56.754	52	61
1760	Sveriges Riksbank (1931)	36	64.067	61	68
1761	Sveriges Riksbank (1931)	36	71.654	70	74
1762	Sveriges Riksbank (1931)	36	84.994	74	108
1763	Sveriges Riksbank (1931)	36	87.701	76	100
1764	Sveriges Riksbank (1931)	36	91.702	88	96
1765	Sveriges Riksbank (1931)	36	87.461	72	92
1766	Sveriges Riksbank (1931)	36	76.417	68	86
1767	Sveriges Riksbank (1931)	36	59.894	47	69
1768	*Stockholms stads priscouranter*	36	50.172	48	56
1769	*Stockholms stads priscouranter*	36	60.692	54	68.5
1770	*Stockholms stads priscouranter*	36	68.916	64	72
1771	*Stockholms stads priscouranter*	36	67.371	64	71
1772	*Stockholms stads priscouranter*	36	72.614	68	78
1773	*Stockholms stads priscouranter*	36	82.143	77.5	86
1774	*Stockholms stads priscouranter*	36	78.584	74	86
1775	*Stockholms stads priscouranter*	36	72.478	70	75
1776	*Stockholms stads priscouranter*	36	71.594	70	75
1777	According to the mint reform of 1776	72	72		

*In debased coins (coin tokens 1716–18)

** In proper coins

For abbreviations, see section 'Abbreviations'.

Table A4.8. *The exchange rate of the ducat 1652–1776.*

Year	Source	1 ducat in mark kop-parmynt, market rate	1 ducat in riksdaler specie, market rate	1 ducat in riksdaler specie, official rate	Gold-silver (value) ratio, Sweden	Gold-silver (value) ratio, 'world'*
1652	Ss, O:1 , f. 562	32	2		14.867	14.41
1653	Ss, OO , f. 628	32	2		14.867	14.44
1654	Ss, O:1 , f. 563	32	2		15.12	14.39
1655	Interpolation	32.601	2		15.12	14.44
1656	Interpolation	33.125	2		15.12	14.42
1657	Interpolation	33.391	2		15.12	14.42
1658	Interpolation	34.062	2		15.12	14.37
1659	Interpolation	34.914	2		15.12	14.33
1660	Interpolation	35.452	2		15.12	14.33
1661	Ss, O:1 , f. 255 and 566	39.846	2.191		16.563	14.52
1662	Ss, O:1 , f. 258 and 259	36.125	1.979		14.965	14.53
1663	Ss, O:1 , f. 1724	37.12	2		15.12	14.40
1664	Ss, O:1 , f. 262	39.815	2		15.12	14.44
1665	Interpolation	40.782	1.923	1.923	14.31	14.49
1666	Interpolation	40.385	1.923	1.923	14.31	14.80
1667	Hegardt (1975, p. 226)	40.8	1.943	1.923	14.457	14.85
1668	Interpolation	40.474	1.923	1.923	14.31	14.90
1669	Ss, O:1 , f. 286	42	1.997	1.923	14.86	14.98
1670	Ss, O:1 , f. 570	42	2	1.923	14.882	15.09
1671	Interpolation	42	2	1.923	14.882	15.24
1672	Ss, OO , f. 659	42	2	1.923	14.882	15.30
1673	Ss, O:1 , f. 280	42.135	2	1.923	14.882	15.27
1674	Ss, O:1 , f. 295 and 298	44.43	2.063	1.923	15.353	15.16
1675	Interpolation	46.795	2	1.923	14.882	15.15
1676	Interpolation	49.956	2	1.923	14.882	15.20
1677	Ss, O:1 , f. 295	52	1.987	1.923	14.788	15.20
1678	Ss, O:1 , f. 295	52	1.938	1.923	14.42	15.08
1679	Ss, O:1 , f. 663 and 310	54	2	1.923	14.882	15.09
1680	Ss, O:1 , f. 1910	54.269	2	1.923	14.882	15.08
1681	Ss, O:1 , f. 315	49.5	1.989	1.923 (2)	14.801	15.02
1682	Interpolation	49.968	2	2	14.885	15.16
1683	Ss, O:1 , f. 577	52	2.068	2	15.391	15.12
1684	Ss, O:1 , f. 322	52	2.08	2	15.477	15.06
1685	Ss, O:1 , f. 322	48	1.915	2	14.251	15.02
1686	Wolontis (1936, p. 167	48.81	2.014	2	14.983	15.14
1687	Ss, O:1 , f. 322 and 578	46.989	1.861	2	13.847	14.94
1688	Interpolation	50.5	2	2	14.882	14.94
1689	Interpolation	50.5	2	2	14.882	15.02

Table A4.8 (cont.). *The exchange rate of the ducat 1652–1776.*

Year	Source	1 ducat in mark kop-parmynt, market rate	1 ducat in riksdaler specie, market rate	1 ducat in riksdaler specie, official rate	Gold-silver (value) ratio, Sweden	Gold-silver (value) ratio, 'world'*
1690	Interpolation	50.5	2	2	14.882	15.02
1691	Interpolation	49.497	2	2	14.882	14.98
1692	Interpolation	50	2	2	14.882	14.92
1693	Ss, O:1 , f. 330	52	2.101	2	15.633	14.83
1694	Interpolation	50	2	2	14.882	14.87
1695	Interpolation	50	2	2	14.882	15.02
1696	Interpolation	54.033	2	2	14.882	15.00
1697	Ss, O:1 , f. 335	55.759	2.061	2	15.333	15.20
1698	Interpolation	53.07	2	2	14.882	15.07
1699	Interpolation	49.728	2	2	14.882	14.94
1700	Ss, O:1 , f. 1922	54	2.097	2	15.606	14.81
1701	Interpolation	49.978	2	2	14.882	15.07
1702	Interpolation	49.223	2	2	14.882	15.52
1703	Interpolation	52.927	2	2	14.882	15.17
1704	Interpolation	52.488	2	2	14.882	15.22
1705	Riksbankens arkiv.	53.791	2.054	2	15.285	15.11
1706	Riksbankens arkiv.	54.502	2.076	2	15.444	15.27
1707	Riksbankens arkiv.	54.082	2.068	2	15.392	15.44
1708	Ss, O:1 , f. 335	55.749	2.124	2	15.803	15.41
1709	Interpolation based world gold-silver ratio	53.998	2.058	2	15.31	15.31
1710	Ss, OO , f. 677	60	2.286	2	17.012	15.22
1711	Ss, O:1 , f. 344	56.25	2.163	2	16.098	15.29
1712	Interpolation based world gold-silver ratio	53.998	2.058	2	15.31	15.31
1713	Interpolation based world gold-silver ratio	53.751	2.048	2	15.24	15.24
1714	Interpolation based world gold-silver ratio	52.304	2.033	2	15.13	15.13
1715	Interpolation based world gold-silver ratio	50.766	2.031	2	15.11	15.11
1716	Interpolation based world gold-silver ratio	55.891** (52.727***)	2.028	2	15.09	15.09
1717	Ss, O:1 , f. 350	76.772** (68.547***)	2	2	14.882	15.13
1718	Stiernstedt (1863, p. 270)	122.82** (107.06***)	2.034	2	15.138	15.11
1719	Interpolation based world gold-silver ratio	82.585	1.995	2	15.09	15.09
1720	Stiernstedt (1863, p. 580) and Ss, O:1 , f. 580	80.628	2	2	15.131	15.04

Table A4.8 (cont.). *The exchange rate of the ducat 1652–1776.*

Year	Source	1 ducat in mark kop-parmynt, market rate	1 ducat in riksdaler specie, market rate	1 ducat in riksdaler specie, official rate	Gold-silver (value) ratio, Sweden	Gold-silver (value) ratio, 'world'*
1721	Interpolation based world gold-silver ratio	75.145	1.989	2	15.05	15.05
1722	Interpolation based world gold-silver ratio	76.401	2.005	2	15.17	15.17
1723	Interpolation based world gold-silver ratio	73.484	2.009	2	15.2	15.20
1724	Interpolation based world gold-silver ratio	72.881	2	2	15.11	15.11
1725	Interpolation based world gold-silver ratio	68	2	2	15.11	15.11
1726	Interpolation based world gold-silver ratio	69.424	2	2	15.15	15.15
1727	Interpolation based world gold-silver ratio	71.392	2	2	15.24	15.24
1728	Riksbankens arkiv	74	2.056	2	15.552	15.11
1729	Riksbankens arkiv	73.125	2.031	2	15.368	14.92
1730	Interpolation based world gold-silver ratio	72	2	2	14.81	14.81
1731	Interpolation based world gold-silver ratio	72	2	2	14.94	14.94
1732	Interpolation based world gold-silver ratio	72	2	2	15.09	15.09
1733	Riksbankens arkiv	72.069	2.002	2	15.146	15.18
1734	Riksbankens arkiv	72.706	1.985	2	15.015	15.39
1735	Interpolation based world gold-silver ratio	74.854	2.037	2	15.41	15.41
1736	Riksbankens arkiv	75.181	1.999	2	15.122	15.18
1737	Interpolation based world gold-silver ratio	73.92	1.985	2	15.02	15.02
1738	Interpolation based world gold-silver ratio	73.411	1.971	2	14.91	14.91
1739	Interpolation based world gold-silver ratio	73.723	1.971	2	14.91	14.91
1740	Sveriges Riksbank (1931)	74.613	1.975	2	14.942	14.94
1741	Sveriges Riksbank (1931)	75.645	1.99	2	15.053	14.92
1742	Sveriges Riksbank (1931)	79.331	2.063	2	15.607	14.85
1743	Sveriges Riksbank (1931)	80.852	2.02	2	15.283	14.85
1744	Sveriges Riksbank (1931)	84.27	2.029	2	15.351	14.87
1745	Sveriges Riksbank (1931)	82.297	2.01	2	15.205	14.98
1746	Sveriges Riksbank (1931)	80	2	2	15.131	15.13
1747	Sveriges Riksbank (1931)	87.912	1.975	2	14.939	15.26
1748	Sveriges Riksbank (1931)	90.931	1.966	2	14.872	15.11
1749	Sveriges Riksbank (1931)	90.286	1.942	2	14.69	14.80

Table A4.8 (cont.). *The exchange rate of the ducat 1652–1776.*

Year	Source	1 ducat in mark kop-parmynt, market rate	1 ducat in riksdaler specie, market rate	1 ducat in riksdaler specie, official rate	Gold-silver (value) ratio, Sweden	Gold-silver (value) ratio, 'world'*
1750	Sveriges Riksbank (1931)	84.057	1.852	2	14.011	14.55
1751	Sveriges Riksbank (1931)	79.164	1.905	2	14.415	14.39
1752	Sveriges Riksbank (1931)	77.562	1.863	2	14.091	14.54
1753	Sveriges Riksbank (1931)	76.975	1.905	2	14.411	14.54
1754	Sveriges Riksbank (1931)	78.032	1.913	2	14.471	14.48
1755	Sveriges Riksbank (1931)	78.669	1.93	2	14.602	14.68
1756	Sveriges Riksbank (1931)	81.675	1.901	2	14.38	14.94
1757	Sveriges Riksbank (1931)	90.742	2.036	2	15.402	14.87
1758	Sveriges Riksbank (1931)	104.73	1.99	2	15.059	14.85
1759	Sveriges Riksbank (1931)	106.18	1.871	2	14.155	14.15
1760	Sveriges Riksbank (1931)	120.69	1.884	2	14.252	14.14
1761	Sveriges Riksbank (1931)	142.2	1.985	2	15.014	14.54
1762	Sveriges Riksbank (1931)	167.41	1.97	2	14.902	15.27
1763	Sveriges Riksbank (1931)	170.1	1.94	2	14.674	14.99
1764	Sveriges Riksbank (1931)	176.38	1.923	2	14.551	14.70
1765	Sveriges Riksbank (1931)	177.79	2.033	2	15.379	14.83
1766	Sveriges Riksbank (1931)	152.99	2.002	2	15.147	14.80
1767	Sveriges Riksbank (1931)	120.32	2.009	2	15.198	14.85
1768	Stockholms stads pris-courant	95.94	1.912	2	14.467	14.80
1769	Stockholms stads pris-courant	114.13	1.881	2	14.227	14.72
1770	Stockholms stads pris-courant	127.22	1.846	2	13.966	14.62
1771	Stockholms stads pris-courant	132.11	1.961	2	14.836	14.66
1772	Stockholms stads pris-courant	137.55	1.894	2	14.332	14.52
1773	Stockholms stads pris-courant	156.14	1.901	2	14.381	14.62
1774	Stockholms stads pris-courant	152.47	1.94	2	14.679	14.62
1775	Stockholms stads pris-courant	143.6	1.981	2	14.99	14.72
1776	Stockholms stads pris-courant	141.32	1.974	2	14.933	14.55

* Average of England, France, Kraków, Luzern and Austria in 1652–86. Hamburg in 1687–1776.

Source: 'MEMDB - Medieval and Early Modern Data Bank'.

** In coin tokens

*** In proper coins

Ss – Sandbergska samlingen.

Table A4.9. *The exchange rate of carolins 1624–1777.*

Year	Source	Daler carolin in daler koppar-mynt, market rate	Daler carolin in daler koppar-mynt, official rate	Riks-daler in half carolins (marks), market rate	Riks-daler in half carolins (marks), official rate
1624	Wallroth (1918)	1	1	6.5	6.5
1625	Ss, O:1 , f. 197	1	1	6.667	6.5
1626	Wallroth (1918)	1.077	1	6.5	6.5
1627	Wallroth (1918)	1.077	1	6.5	6.5
1628	Wolontis (1936, p. 94), Stiernstedt (1863, p. 97)	1.462	1	6.5	6.5
1629	Wolontis (1936, p. 94), Swenne (1933, p. 189)	2.071	1	7	6.5
1630	Wolontis (1936, p. 94)	2.1	1	7.5	6.5
1631	Wolontis (1936, p. 94)	2.165	1	7.5	6.5
1632	Wolontis (1936, p. 94)	2.018	1	7.5	6.5
1633	Swenne (1933, pp. 189-190)	2.07* (1.811**)	1 (2)	7* (8**)	6.5 (6)
1634	Swenne (1933, pp. 189–90)	2* (1.949**)	2	6.481* (6.65**)	6
1635	Swenne (1933, pp. 189–90)	2* (1.809**)	2	6.782* (7.5**)	6
1636	Swenne (1933, p. 190)	2	2	6.5	6
1637	Swenne (1933, p. 190)	2	2	6.745	6
1638	Swenne (1933, p. 190)	2	2	6.5	6
1639	Swenne (1933, p. 190), Ss, OO, f. 612	2	2	7.25	6
1640	Interpolation	2.105	2	7.125	6
1641	Wolontis (1936, p. 102)	2.143	2	7	6
1642	Interpolation	2.308	2	6.5	6
1643	Wolontis (1936, p. 102)	2.5	2 (2.5)	6	6
1644	Interpolation	2.5	2.5	6.008	6
1645	Interpolation	2.5	2.5	6.4	6
1646	Interpolation	2.5	2.5	6.316	6
1647	Interpolation	2.5	2.5	6.016	6
1648	Interpolation	2.5	2.5	6.23	6
1649	Swenne (1933, p. 190)	2.5	2.5	6.4	6
1650	Interpolation	2.5	2.5	6.4	6
1651	Swenne (1933, p. 190)	2.5	2.5	6.4	6
1652	Interpolation	2.5	2.5	6.4	6
1653	Interpolation	2.5	2.5	6.4	6
1654	Interpolation	2.5	2.5	6.4	6
1655	Interpolation	2.547	2.5	6.4	6
1656	Interpolation	2.588	2.5	6.4	6
1657	Interpolation	2.609	2.5	6.4	6
1658	Interpolation	2.661	2.5	6.4	6

Table A4.9 (cont.). *The exchange rate of carolins 1624–1777.*

Year	Source	Daler carolin in daler koppar-mynt, market rate	Daler carolin in daler koppar-mynt, official rate	Riks-daler in half carolins (marks), market rate	Riks-daler in half carolins (marks), official rate
1659	Interpolation	2.728	2.5	6.4	6
1660	Interpolation	2.77	2.5	6.4	6
1661	Interpolation	2.842	2.5	6.4	6
1662	Ss, O:1 , f. 262	2.875	2.5	6.348	6
1663	Interpolation	2.855	2.5	6.5	6
1664	Wolontis (1936, p. 144)	3.063	2.5	6.5	6
1665	Wolontis (1936, p. 144)	3.138	2.5 (3)	6.757	6 (6.5)
1666	Wolontis (1936, p. 144)	3.108	3	6.757	6.5
1667	Wolontis (1936, p. 144)	3.108	3	6.757	6.5
1668	Wolontis (1936, p. 144)	3.115	3	6.757	6.5
1669	Ss, O:1 , f. 286	3.112	3	6.757	6.5
1670	Wolontis (1936)	3.167	3	6.632	6.5
1671	Wolontis (1936)	3.167	3	6.632	6.5
1672	Wolontis (1936)	3.167	3	6.632	6.5
1673	Wolontis (1936)	3.167	3	6.653	6.5
1674	Wolontis (1936)	3.244	3	6.638	6.5
1675	Wolontis (1936)	3.431	3	6.819	6.5
1676	Wolontis (1936)	3.572	3	6.993	6.5
1677	Wolontis (1936)	3.701	3	7.069	6.5
1678	Wolontis (1936)	3.842	3	6.984	6.5
1679	Wolontis (1936)	3.833	3	7.043	6.5
1680	Wolontis (1936)	3.847	3	7.054	6.5
1681	Wolontis (1936)	3.583	3 (3.5)	6.945	6.5 (6.857)
1682	Interpolation	3.5	3.5	7.137	6.857
1683	Interpolation	3.6	3.5	6.983	6.857
1684	Interpolation	3.6	3.5	6.944	6.857
1685	Interpolation	3.667	3.5	6.835	6.857
1686	Wolontis (1936)	3.658	3.5 (3.75)	6.626	6.857 (6.4)
1687	Interpolation	3.75	3.75	6.733	6.4
1688	Interpolation	3.75	3.75	6.733	6.4
1689	Ss, O:1 , f. 676	3.75	3.75	6.733	6.4
1690	Ss, O:1 , f. 677	3.75	3.75	6.733	6.4
1691	Ss, O:1 , f. 679	3.75	3.75	6.6	6.4
1692	Interpolation	3.75	3.75	6.667	6.4
1693	Interpolation	3.75	3.75	6.6	6.4

Table A4.9 (cont.). *The exchange rate of carolins 1624–1777.*

Year	Source	Daler carolin in daler koppar-mynt, market rate	Daler carolin in daler koppar-mynt, official rate	Riks-daler in half carolins (marks), market rate	Riks-daler in half carolins (marks), official rate
1694	Interpolation	3.75	3.75	6.667	6.4
1695	Wolontis (1936, p. 176)	3.75	3.75	6.667	6.4
1696	Wolontis (1936, p. 176)	3.75	3.75	7.204	6.4
1697	Wolontis (1936, p. 176)	3.75	3.75	7.216	6.4
1698	Wolontis (1936, p. 176)	3.75	3.75	7.076	6.4
1699	Wolontis (1936, p. 176)	3.75	3.75	6.63	6.4
1700	Wolontis (1936, p. 176)	3.75	3.75	6.866	6.4
1701	Wolontis (1936, p. 176)	3.75	3.75	6.664	6.4
1702	Wolontis (1936, p. 176)	3.75	3.75	6.563	6.4
1703	Wolontis (1936, p. 176)	3.75	3.75	7.057	6.4
1704	Wolontis (1936, p. 176)	3.75	3.75	6.998	6.4
1705	Wolontis (1936, p. 176)	3.75	3.75	6.983	6.4
1706	Wolontis (1936, p. 176)	3.75	3.75	7.002	6.4
1707	Wolontis (1936, p. 176)	3.75	3.75	6.972	6.4
1708	Wolontis (1936, p. 176)	3.75	3.75	7	6.4
1709	Wolontis (1936, p. 176)	3.75	3.75	6.998	6.4
1710	Interpolation	3.75	3.75	6.998	6.4
1711	Interpolation	3.75	3.75	6.933	6.4
1712	Interpolation	3.75	3.75	6.998	6.4
1713	Ss, O:1 , f. 687	3.75	3.75	6.998	6.4
1714	Interpolation	3.75	3.75	6.859	6.4
1715	Interpolation	3.75	3.75	6.667	6.4
1716	Interpolation	4.969*** (4.6875 ****)	4.6875	5.547	5.12
1717	Interpolation	5.25*** (4.6875 ****)	4.6875	7.312	5.12
1718	Not legal tender				
1719	Interpolation	5.457	4.6875	7.538	7.68
1720	Interpolation	5.348	4.6875	7.538	7.68
1721	Interpolation	4.978	4.6875	7.538	7.68
1722	Interpolation	5.021	4.6875	7.538	7.68
1723	Interpolation	4.82	4.6875	7.538	7.68
1724	Interpolation	4.802	4.6875	7.538	7.68
1725	Interpolation	4.511	4.6875	7.538	7.68
1726	Interpolation	4.575	4.6875	7.538	7.68

Table A4.9 (cont.). *The exchange rate of carolins 1624–1777.*

Year	Source	Daler carolin in daler koppar-mynt, market rate	Daler carolin in daler koppar-mynt, official rate	Riks-daler in half carolins (marks), market rate	Riks-daler in half carolins (marks), official rate
1727	Interpolation	4.704	4.6875	7.538	7.68
1728	Ss, O:1 , f. 357	4.781	4.6875	7.529	7.68
1729	Interpolation	4.776	4.6875	7.538	7.68
1730	Interpolation	4.776	4.6875	7.538	7.68
1731	Interpolation	4.776	4.6875	7.538	7.68
1732	Interpolation	4.776	4.6875	7.538	7.68
1733	Interpolation	4.776	4.6875	7.538	7.68
1734	Riksbankens arkiv	4.854	4.6875	7.546	7.68
1735	Interpolation	4.996	4.6875	7.355	7.68
1736	Riksbankens arkiv	5.262	4.6875	7.149	7.68
1737	Interpolation	5.029	4.6875	7.355	7.68
1738	Sjöstrand (1908, p. 48)	4.781	4.6875	7.791	7.68
1739	Interpolation	5.052	4.6875	7.355	7.68
1740	Stockholms stads priscourant	5.122	4.6875	7.376	7.68
1741	Stockholms stads priscourant	5.154	4.6875	7.376	7.68
1742	Stockholms stads priscourant	5.257	4.6875	7.315	7.68
1743	Stockholms stads priscourant	5.541	4.6875	7.223	7.68
1744	Stockholms stads priscourant	5.649	4.6875	7.352	7.68
1745	Stockholms stads priscourant	5.713	4.6875	7.167	7.68
1746	Stockholms stads priscourant	5.806	4.6875	6.89	7.68
1747	Stockholms stads priscourant	6.018	4.6875	7.398	7.68
1748	Stockholms stads priscourant	6.065	4.6875	7.627	7.68
1749	Stockholms stads priscourant	6.167	4.6875	7.539	7.68
1750	Stockholms stads priscourant	6.193	4.6875	7.329	7.68
1751	Stockholms stads priscourant	6.123	4.6875	6.786	7.68
1752	Stockholms stads priscourant	5.931	4.6875	7.022	7.68
1753	Stockholms stads priscourant	5.564	4.6875	7.263	7.68
1754	Stockholms stads priscourant	5.601	4.6875	7.284	7.68
1755	Stockholms stads priscourant	5.624	4.6875	7.248	7.68
1756	Stockholms stads priscourant	5.774	4.6875	7.442	7.68
1757	Stockholms stads priscourant	6.045	4.6875	7.374	7.68
1758	Stockholms stads priscourant	6.757	4.6875	7.787	7.68
1759	Stockholms stads priscourant	7.262	4.6875	7.815	7.68
1760	Stockholms stads priscourant	8.433	4.6875	7.597	7.68
1761	Stockholms stads priscourant	9.336	4.6875	7.675	7.68
1762	Stockholms stads priscourant	9.744	4.6875	8.722	7.68

Table A4.9 (cont.). *The exchange rate of carolins 1624–1777.*

Year	Source	Daler carolin in daler koppar-mynt, market rate	Daler carolin in daler koppar-mynt, official rate	Riks-daler in half carolins (marks), market rate	Riks-daler in half carolins (marks), official rate
1763	Stockholms stads priscourant	10.529	4.6875	8.33	7.68
1764	Stockholms stads priscourant	10.313	4.6875	8.892	7.68
1765	Stockholms stads priscourant	10.313	4.6875	8.481	7.68
1766	Interpolation	9.516	4.6875	8.031	7.68
1767	Interpolation	7.380	4.6875	8.116	7.68
1768	Stockholms stads priscourant	5.858	4.6875	8.565	7.68
1769	Stockholms stads priscourant	6.581	4.6875	9.222	7.68
1770	Interpolation	8.066	4.6875	8.544	7.68
1771	Interpolation	8.000	4.6875	8.421	7.68
1772	Interpolation	8.336	4.6875	8.711	7.68
1773	Interpolation	9.753	4.6875	8.423	7.68
1774	Interpolation	9.662	4.6875	8.133	7.68
1775	Interpolation	9.302	4.6875	7.792	7.68
1776	Interpolation	8.957	4.6875	7.993	7.68
1777	According to the mint reform of 1776	9.375	9.375	7.68	7.68

* In marks minted from 1633 onwards

** In marks minted before 1633

*** In coin tokens

**** In proper coins

Ss – Sandbergska samlingen.

Table A4.10. *The exchange rate of öre courant ('vitt mynt') 1624–1777.*

Year	Source	Öre cou-rant ('vitt mynt') in öre kop-parmynt, market rate	Daler silver-mynt in daler koppar-mynt	Riksdaler in öre courant, market rate	Riksdaler in öre courant, official rate
1624	Wolontis (1936, p. 68)	1	1	52	52
1625	Ss, O:1 , f. 197	1	1	53.6	52
1626	Interpolation	1	1	56	52
1627	Interpolation	1	1	56	52
1628	Swenne (1933, p. 193)	1	1	76	52

Table A4.10 (cont.). *The exchange rate of öre courant ('vitt mynt') 1624–1777.*

Year	Source	Öre courant ('vitt mynt') in öre kopparmynt, market rate	Daler silvermynt in daler kopparmynt	Riksdaler in öre courant, market rate	Riksdaler in öre courant, official rate
1629	Swenne (1933, p. 193)	1.318	1	88	52
1630	Swenne (1933, p. 193)	1.428	1	88	52
1631	Swenne (1933, p. 193)	1.353	1	96	52
1632	Swenne (1933, p. 193)	1.681	1	72	52
1633	Swenne (1933, p. 193)	2.07* (1.61**)	1 (2)	56* (72**)	52 (48)
1634	Swenne (1933, p. 193)	2* (1.525**)	2	51.8* (68**)	48
1635	Swenne (1933, p. 193)	2* (1.428**)	2	54.3* (76**)	48
1636	Interpolation	2	2	52	48
1637	Interpolation	2	2	53.6	48
1638	Interpolation	2	2	52	48
1639	Interpolation	2	2	58	48
1640	Interpolation	2.105	2	57	48
1641	Wolontis (1936, p. 102)	2.143	2	56	48
1642	Interpolation	2.308	2	52	48
1643	Wolontis (1936, p. 102)	2.5	2 (2.5)	48	48
1644	Interpolation	2.5	2.5	48	48
1645	Interpolation	2.5	2.5	51.2	48
1646	Interpolation	2.5	2.5	50.4	48
1647	Interpolation	2.5	2.5	48	48
1648	Interpolation	2.5	2.5	49.6	48
1649	Interpolation	2.5	2.5	51.2	48
1650	Interpolation	2.5	2.5	51.2	48
1651	Interpolation	2.5	2.5	51.2	48
1652	Interpolation	2.5	2.5	51.2	48
1653	Interpolation	2.5	2.5	51.2	48
1654	Interpolation	2.5	2.5	51.2	48
1655	Interpolation	2.51	2.5	52	48
1656	Interpolation	2.55	2.5	52	48
1657	Interpolation	2.571	2.5	52	48
1658	Interpolation	2.623	2.5	52	48
1659	Interpolation	2.688	2.5	52	48
1660	Interpolation	2.73	2.5	52	48
1661	Interpolation	2.801	2.5	52	48
1662	Ss, O:1 , f. 262	2.833	2.5	51.2	48

Table A4.10 (cont.). *The exchange rate of öre courant ('vitt mynt') 1624–1777.*

Year	Source	Öre courant ('vitt mynt') in öre kopparmynt, market rate	Daler silvermynt in daler kopparmynt	Riksdaler in öre courant, market rate	Riksdaler in öre courant, official rate
1663	Interpolation	2.814	2.5	52.8	48
1664	Wolontis (1936, p. 144)	3	2.5	52.8	48
1665	Wolontis (1936, p. 144)	3	2.5 (3)	56.8	48 (52)
1666	Wolontis (1936, p. 144)	3	3	56	52
1667	Wolontis (1936, p. 144)	3	3	56	52
1668	Wolontis (1936, p. 144)	3	3	56.12	52
1669	Wolontis (1936, p. 144)	3	3	56.08	52
1670	Wolontis (1936)	3	3	56	52
1671	Wolontis (1936)	3	3	56	52
1672	Wolontis (1936)	3	3	56	52
1673	Wolontis (1936)	3	3	56.18	52
1674	Wolontis (1936)	3.027	3	56.91	52
1675	Wolontis (1936)	3.096	3	60.47	52
1676	Wolontis (1936)	3.28	3	60.93	52
1677	Wolontis (1936)	3.466	3	60.39	52
1678	Wolontis (1936)	3.518	3	61.03	52
1679	Wolontis (1936)	3.495	3	61.81	52
1680	Wolontis (1936)	3.388	3	64.08	52
1681	Wolontis (1936)	3.102	3	64.18	52 (64)
1682	Interpolation	3.06	3	65.3	64
1683	Interpolation	3.06	3	65.73	64
1684	Interpolation	3.06	3	65.36	64
1685	Interpolation	3.06	3	65.52	64
1686	Wolontis (1936)	3.048	3	63.63	64
1687	Interpolation	3	3	67.33	64
1688	Interpolation	3	3	67.33	64
1689	Interpolation	3	3	67.33	64
1690	Interpolation	3	3	67.33	64
1691	Interpolation	3	3	66	64
1692	Interpolation	3	3	66.67	64
1693	Interpolation	3	3	66	64
1694	Interpolation	3	3	66.67	64
1695	Interpolation	3	3	66.67	64
1696	Interpolation	3	3	72.04	64
1697	Interpolation	3	3	72.16	64
1698	Interpolation	3	3	70.76	64

Table A4.10 (cont.). *The exchange rate of öre courant ('vitt mynt') 1624–1777.*

Year	Source	Öre courant ('vitt mynt') in öre kopparmynt, market rate	Daler silvermynt in daler kopparmynt	Riksdaler in öre courant, market rate	Riksdaler in öre courant, official rate
1699	Interpolation	3	3	66.3	64
1700	Interpolation	3	3	68.66	64
1701	Interpolation	3	3	66.64	64
1702	Interpolation	3	3	65.63	64
1703	Interpolation	3	3	70.57	64
1704	Interpolation	3	3	69.98	64
1705	Interpolation	3	3	69.83	64
1706	Interpolation	3	3	70.02	64
1707	Interpolation	3	3	69.72	64
1708	Interpolation	3	3	70	64
1709	Interpolation	3	3	69.98	64
1710	Interpolation	3	3	69.98	64
1711	Interpolation	3	3	69.33	64
1712	Interpolation	3	3	69.98	64
1713	Interpolation	3	3	69.98	64
1714	Interpolation	3	3	68.59	64
1715	Interpolation	3	3	66.67	64
1716	Interpolation	3.18*** (3****)	3	73.49	64
1717	Interpolation	3.36*** (3****)	3	102.4	64
1718	Interpolation	3.442*** (3****)	3	161	64
1719	Interpolation	3	3	110.4	96
1720	Interpolation	3	3	107.5	96
1721	Interpolation	3	3	100.7	96
1722	Interpolation	3	3	101.6	96
1723	Interpolation	3	3	97.53	96
1724	Interpolation	3	3	97.17	96
1725	Interpolation	3	3	90.67	96
1726	Interpolation	3	3	92.57	96
1727	Interpolation	3	3	95.19	96
1728	Interpolation	3	3	96	96
1729	Interpolation	3	3	96	96
1730	Interpolation	3	3	96	96
1731	Interpolation	3	3	96	96
1732	Interpolation	3	3	96	96

Table A4.10 (cont.). *The exchange rate of öre courant ('vitt mynt') 1624–1777.*

Year	Source	Öre courant ('vitt mynt') in öre kopparmynt, market rate	Daler silvermynt in daler kopparmynt	Riksdaler in öre courant, market rate	Riksdaler in öre courant, official rate
1733	Interpolation	3	3	96	96
1734	Riksbankens arkiv	3.051	3	96.05	96
1735	Interpolation	3.043	3	96.62	96
1736	Riksbankens arkiv	3.096	3	97.19	96
1737	Interpolation	3.043	3	97.25	96
1738	Interpolation	3.064	3	97.25	96
1739	Interpolation	3.057	3	97.25	96
1740	Stockholms stads priscourant	3.106	3	97.32	96
1741	Stockholms stads priscourant	3.135	3	97.03	96
1742	Stockholms stads priscourant	3.191	3	96.41	96
1743	Stockholms stads priscourant	3.222	3	99.38	96
1744	Stockholms stads priscourant	3.305	3	100.5	96
1745	Stockholms stads priscourant	3.347	3	97.87	96
1746	Stockholms stads priscourant	3.418	3	93.63	96
1747	Stockholms stads priscourant	3.469	3	102.7	96
1748	Stockholms stads priscourant	3.518	3	105.2	96
1749	Stockholms stads priscourant	3.533	3	105.3	96
1750	Stockholms stads priscourant	3.449	3	105.3	96
1751	Stockholms stads priscourant	3.234	3	102.8	96
1752	Stockholms stads priscourant	3.199	3	104.1	96
1753	Stockholms stads priscourant	3.151	3	102.6	96
1754	Stockholms stads priscourant	3.159	3	103.3	96
1755	Stockholms stads priscourant	3.165	3	103	96
1756	Stockholms stads priscourant	3.187	3	107.9	96
1757	Stockholms stads priscourant	3.319	3	107.4	96
1758	Stockholms stads priscourant	3.814	3	110.4	96
1759	Stockholms stads priscourant	4.045	3	112.3	96
1760	Stockholms stads priscourant	4.47	3	114.7	96
1761	Stockholms stads priscourant	4.896	3	117.1	96
1762	Stockholms stads priscourant	5.623	3	120.9	96
1763	Stockholms stads priscourant	6.064	3	115.7	96
1764	Stockholms stads priscourant	6.216	3	118	96
1765	Stockholms stads priscourant	6.064	3	115.4	96
1766	Stockholms stads priscourant	5.944	3	102.9	96
1767	Stockholms stads priscourant	4.561	3	105.1	96
1768	Stockholms stads priscourant	3.608	3	111.2	96

Table A4.10 (cont.). *The exchange rate of öre courant ('vitt mynt') 1624–1777.*

Year	Source	Öre courant ('vitt mynt') in öre kopparmynt, market rate	Daler silvermynt in daler kopparmynt	Riksdaler in öre courant, market rate	Riksdaler in öre courant, official rate
1769	Stockholms stads priscourant	4.159	3	116.7	96
1770	Ss, O:1 , f. 1263 and 1969	4.735	3	116.4	96
1771	Stockholms stads priscourant	4.765	3	118.7	96
1772	Stockholms stads priscourant	4.8	3	121	96
1773	Stockholms stads priscourant	5.808	3	113.1	96
1774	Stockholms stads priscourant	5.959	3	105.5	96
1775	Stockholms stads priscourant	5.988	3	96.83	96
1776	Stockholms stads priscourant	5.621	3	101.9	96
1777	According to the mint reform of 1776	6	6	96	96

* In öre minted from 1633 onwards

** In öre minted before 1633

*** In coin tokens

**** In proper coins

Ss – Sandbergska samlingen.

Abbreviations

d.k.m. – daler kopparmynt
d.s.m. – daler silvermynt
k.m. – kopparmynt
RA – Riksarkivet
RBA – Riksbankens arkiv
RD – riksdaler
rdr – riksdaler
s.m. – silvermynt
SEK – Swedish krona
Ss – Sanderbergska samlingen
Sst – Stockholms stads tänkeböcker
USD – US dollar
Vsät – Vadstena stads äldsta tänkeböcker

Unpublished primary sources

Göteborgs landsarkiv

Göteborgs rådhusrätts och magistrats arkiv före år 1900, Signum L I (Kollegiernas protokoll), vol. 4–6.
Göteborgs rådhusrätts och magistrats arkiv före år 1900, Signum G d (Handlingar angående hospitalet), vol. 20 and 22.

Kungliga biblioteket

Stockholms stads priscourant, 1740–55 and 1761–67 (microfilmed).

Riksarkivet (RA)

Riksarkivets ämnessamlingar, Handel och sjöfart, Ser. I, vol. 1 Järnhandel.
Riksarkivets ämnessamlingar. Misc. 26 Myntväsen vol 4.
Sandbergska samlingen, vol. O:1, O:2 and OO.
Äldre Kommissioner, 408, vol. 6, 'Priset på spannmålen i Fahlun från 1716 til 1723 inclusive, av Erik Sjöberg'.

Riksbankens arkiv (RBA)

'Växelkurser å Stockholms börs. Primärtabeller (1705–)/1740–1803'.
Untitled volume with exchange rates 1804–89.

Stockholms stadsarkiv

Stockholms stads priscourant, (1752), 1756–60, 1768–74 and 1776 (microfilmed).

Wahrendorffska arkivet

Stockholms stads priscourant, 1775–76 (microfilmed).

Published primary sources

Stockholms stads tänkeböcker 1544–1548 (1936), Stockholm.
Stockholms stads tänkeböcker 1568–1575 (1941), Stockholm.
Stockholms stads tänkeböcker 1589–1591 (1948), Stockholms stadsböcker från äldre tid. Ser. 2, N.F.:8. Stockholm.
Stockholms stads tänkeböcker från år 1592, parts 1-21 (1939–2006), Stockholm.
Stockholms stads tänkebok under vasatiden (1908–), Stockholm.
Vadstena stads äldsta tänkeböcker 1577–1610 (1952), Uppsala.

Internet resources

'MEMDB - Medieval and Early Modern Data Bank', http://sccweb.scc-net.rutgers.edu/memdb (2007-06-10).
'Measuringworth.com', http://www.measuringworth.com (2007-06-10).

References and secondary sources

Ahlström, G (1972), 'Part IV. The Period 1776–1802', in Jörberg, L, *A History of Prices in Sweden 1732–1914*, vol. 2, GWK Gleerup, Lund.
Ahlström, G (1974), *Studier i svensk ekonomisk politik och prisutveckling 1776–1802*, Studentlitteratur, Lund.
Bjurling, O (1945), *Skånes utrikessjöfart 1660–1720: En studie i Skånes handelssjöfart*, C.W.K Gleerup, Lund.
Brisman, S (1931), 'Tiden 1803–-1834', in *Sveriges Riksbank 1668-1924: Bankens tillkomst och verksamhet*, vol IV, Sveriges Riksbank.
Bordo, M, and F Kydland (1992), *The Gold Standard as a Rule*, http://clevelandfed.org/research/workpaper/1992/wp9205.pdf (2007-07-29).
Cottrell, A (1997), *Monetary Endogeneity and the Quantity Theory: The Case of Commodity Money*, http://www.wfu.edu/~cottrell/commodit.pdf (2007-08-05).
Davidson, D (1919), 'Sveriges Riksbank 1668–1918', in *Ekonomisk Tidskrift*, 1919, part I. Uppsala and Stockholm.
Edvinsson, R (2005a), *Growth, Accumulation, Crisis: With New Macroeconomic Data for Sweden 1800–2000*, Almqvist & Wiksell International, Stockholm.

Edvinsson, R (2005b), *Annual estimates of Swedish GDP in 1720–1800*, Ratio Working Papers No. 70, Stockholm.

Flynn, D, A Giráldez, and R von Glahn (ed) (2003), *Global Connections and Monetary History, 1470–1800*, Ashgate, Burlington.

Forssell, H (1872), *Anteckningar om mynt, vigt, mått och varupris i Sverige under de första femtio åren af Vasahusets regering*, Stockholm.

Franzén, B (2006), *Folkungatidens monetära system: penningen mellan pest och patriarkat 1254–1370*, Almqvist & Wiksell International, Stockholm.

Fregert, K, and R Gustafsson, (2005), *Fiscal statistics for Sweden 1719–2003*, Working Papers, Department of Economics, Lund University, No. 2005:40, http://swopec.hhs.se/lunewp/abs/lunewp2005_040.htm (2005-10-01).

Fregert, K, and L Jonung (2003), *Makroekonomi: Teori, politik & institutioner*, Studentlitteratur, Lund.

Friedman, M (1990), 'Bimetallism Revisited', in *Journal of Economic Perspectives*, vol. 4, No. 4 (Fall), pp. 85–104.

Friedman, M, and A Schwartz (1963), *A Monetary History of the United States, 1867–1960*, Princeton University Press, Princeton.

Friis, A, and K Glamann (1958), *A history of prices and wages in Denmark: 1660–1800*, vol. 1, London.

Gallarotti, G (1994), 'The scramble for gold: monetary regime transformation in the 1870s', in Bordo, M, and F Capie (eds.), *Monetary regimes in transation*, Cambridge University Press, Cambridge.

Hallenberg, J (1798), *Historisk avhandling om mynt och warors warde i Swerige under Konung Gustaf I:s Regering*, Stockholm.

Hammarström, I (1956), *Finansförvaltning och varuhandel 1504–1540: Studier i de yngre sturarnas Gustav Vasas statshushållning*, Almqvist & Wiksells Boktryckeri Aktiebolag, Uppsala.

Hansson, G (2006), *Såld spannmål av kyrkotionden: Priser i Östergötland under Sveriges stormaktstid*, Print & Media, Umeå universitet, Umeå.

Heckscher, E (1935–49), *Sveriges ekonomiska historia från Gustav Vasa*, vol. I:1, I:2, II:1 and II:2, Bonnier, Stockholm.

Heckscher, E (1941), *De svenska penning-, vikt- och måttsystemen: En historisk översikt*, Stockholm.

Hegardt, A (1975), *Akademiens spannmål: Uppbörd, handel och priser vid Uppsala universitet 1635–1719*, Almqvist & Wiksell International, Stockholm.

Herlitz, L (1974), *Jordegendom och ränta: omfördelningen av jordbrukets merprodukt i Skaraborgs län under frihetstiden*, Ekonomisk-historiska inst., Gothenburg.

Hildebrand, H (1983), *Sveriges medeltid*, vol. 2, Städerna, Gidlunds, Stockholm.

Holmberg, K (1995), 'När kungens mynt blev allmogens mynt: En översikt över mynt, myntning och myntens roll i det svenska samhället under 1200-talet', in Jonsson, K, U Nordlind, and I Wiséhn (eds.), *Myntningen i Sverige 995–1995*, Svenska numismatiska föreningen, Stockholm.

Jansson, A, L Andersson Palm, and J Söderberg (1991), *Dagligt bröd i onda tider: Priser och löner i Stockholm och Västsverige 1500–1770*, Institutet för lokalhistorisk forskning, Göteborg.

Jevons, S (1875), *Money and the Mechanism of Exchange*, D. Appleton and Company, New York, http://www.econlib.org/Library/YPDBooks/Jevons/jvnMMEtoc.html (2007-08-03).

Jonsson, K, and M Östergren (1998), *Varför fick Gotland dansk mynträkning vid 1400-talets mitt?*, http://www.gladsaxegymnasium.dk/2/artikler/jonssgot.htm (2007-02-01).

Jonsson, K (1995), 'Från utländsk metall till inhemskt mynt', in Jonsson, K, U Nordlind, and I Wiséhn (ed), *Myntningen i Sverige 995–1995*, Svenska numismatiska föreningen, Stockholm.

Jonung, L (1975), *Studies in the Monetary History of Sweden*, University of California, Los Angeles.

Jonung, L (2000), 'Från guldmyntfot till inflationsmål – svensk stabiliseringspolitik under det 20:e seklet', in *Ekonomisk Debatt*, Vol. 28, No. 1, pp. 17–32.

Jörberg, L (1972), *A History of Prices in Sweden 1732–1914*, vol. 1 and 2, GWK Gleerup, Lund.

Keynes, J M (1936), *The General Theory of Employment, Interest and Money*, MacMillan, London.

Kulturhistoriskt lexikon för nordisk medeltid från vikingatid till reformationstid (1956–78), Allhem, Malmö.

Lagerqvist, L, and E Nathorst-Böös (1968), *Mynt*, Bokförlaget PAN/Norstedts, Stockholm.

Lagerqvist, L (1995), 'Äldre Vasatid', in Jonsson, K, U Nordlind, and I Wiséhn (eds.), *Myntningen i Sverige 995–1995*, Svenska numismatiska föreningen, Stockholm.

Lagerqvist, L, and E Nathorst-Böös (2002), *Vad kostade det? - priser och löner från medeltid till våra dagar*, 5th edition, Natur och kultur/LT, Stockholm.

Lindeberg, G (1941), *Svensk ekonomisk politik under den Görtzska perioden*, Lund.

Lobell, H (2000), *Växelkurspolitik och marknadsintegration: De utländska växelkurserna i Sverige 1834–1880*, Almqvist & Wiksell International, Lund.

Läge, F-K, (1961), *Secular Inflation*, Riedel, Dordrecht.

Malmer, B (1995), 'Från Olof till Anund. Ur sigtunamyntningens historia', in Jonsson, K, U Nordlind, and I Wiséhn (eds.), *Myntningen i Sverige 995–1995*, Svenska numismatiska föreningen, Stockholm.

Melitz, J (1970), 'The Polanyi School of Anthropology on Money: An Economist's View', in *American Anthropologist*, New Series, vol. 72, no. 5 (October), pp. 1022–40.

Miskimin, H (1963), *Money, Prices, and Foreign Exchange in Fourteenth-Century France*, Yale University Press, New Haven and London.

Montgomery, A (1920), 'Riksbanken och de valutapolitiska problemen, 1719–1778', in *Sveriges riksbank 1668–1918: bankens tillkomst och verksamhet*, vol. III, Norstedts, Stockholm.

Mårtensson, S (1958), *Agiot under kreditsedelepoken 1789–1802*, Göteborg.

Mårtensson, S (1961), *Bryggerinäringen i Göteborg: Tiden från bryggaregillets tillkomst år 1661 intill 1800-talets början*, Oscar Isacsons Boktryckeri Aktiebolag, Gothenburg.

Nordisk familjebok (1913), http://runeberg.org/nfbs (2007-08-14).

Odén, B (1955), *Rikets uppbörd och utgift: statsfinanser och finansförvaltning under senare 1500-talet*, Gleerup, Lund.

Odén, B (1955), *Rikets uppbörd och utgift: statsfinanser och finansförvaltning under senare 1500-talet*, Gleerup, Lund.

Odén, B (1960), *Kopparhandel och statsmonopol: studier i svensk handelshistoria under senare 1500-talet*, Almqvist & Wiksell, Stockholm.

Redish, A (2000), *Bimetallism: An Economic and Historical Analysis*, Cambridge University Press, Cambridge.

Rolnick, A, F Velde, and W Weber (1996), 'The Debasement Puzzle: An Essay on Medieval Monetary History', in *The Journal of Economic History*, Vol. 56, No. 4 (December), pp. 789–808.

Rolnick, A, and W Weber (1986), 'Gresham's Law or Gresham's Fallacy?', in *The Journal of Political Economy*, vol. 94, no. 1 (February), pp. 185–99.

Rolnick, A, and W Weber (1997), 'Money, Inflation, and Output under Fiat and Commodity Standards', in *The Journal of Political Economy*, vol. 105, no. 5 (December), pp. 1308–21.

Sargent, T, and F Velde (2002), *The Big Problem of Small Change*, Princeton University Press, Princeton and Oxford.

Sarvas, P (1969), 'De svenska myntskatterna från 1700-talet', in *Nordisk Numismatisk Årsskrift 1969*, pp. 116–72.

von Schwerin, F B, (1903), *Bidrag till kännedom af fäderneslandet*, Norstedt, Stockholm.

Shaw, W (1895), *The History of Currency*, Wilsons & Milne, London.

Sjöstrand, E (1908), *Mynt- och bankpolitik under hattväldet 1738–1764*, Almqvist & Wiksells Boktryckeri, Uppsala.

Spufford, P (1988), *Money and its use in Medieval Europe*, Cambridge University Press, Cambridge.

Stiernstedt, A (1863), *Om kopparmyntningen i Sverige och dess utländska besittningar*, Stockholm.

Svenska folket genom tiderna: vårt lands kulturhistoria i skildringar och bilder. 5, Den karolinska tiden (1939), Allhem, Malmö.

Sussman, N (1993), 'Debasements, Royal Revenues, and Inflation in France During the Hundred Years' War, 1415–1422', in *The Journal of Economic History*, vol. 53, no. 1 (March), pp. 44–70.

Sussman, N, and Zeira, J (2003), 'Commodity money inflation: theory and evidence from France in 1350–1436', in *Journal of Monetary Economics*, vol. 50, pp. 1769–93.

Sveriges Riksbank (1931), *Statistiska tabeller. Sveriges Riksbank 1668–1924. Bankens tillkomst och verksamhet*, vol. V, Nordstedts, Stockholm.

Swenne, H (1933), *Svenska adelns ekonomiska privilegier 1612–1651: Med särskild hänsyn till Älvsborgs län*, Erlanders boktryckeri AB, Göteborg.

Söderberg, J (2002), *Prices in Stockholm 1539–1620*. Version 3, May 2002. Excel file, http://www.iisg.nl/hpw/stockholm.xls (2005-09-04).

Söderberg, J (1993), 'Inflation i 1500- och 1600-talets Sverige', in *PECVNIA. Skrifter i mynt- och penninghistoriska ämnen utgivna av Kungl. Myntkabinettet, Stockholm*, No. 4.

Talvio, T (1995), 'Sedlarnas århundrade: Mynt och pappersmynt från 1724 till 1818', in Jonsson, K, U Nordlind, and I Wiséhn (eds.), *Myntningen i Sverige 995–1995*, Svenska numismatiska föreningen, Stockholm.

Thordeman, B (1936), 'Sveriges medeltidsmynt', in *Nordisk Kultur*, vol. XXIX, Bonnier, Stockholm.

Thurborg, M (1989), 'Betalningsmedel under järnålder och tidig medeltid', in *Medeltidens födelse*, Gyllenstiernska Krapperupsstiftelsen, Lund.

Tingström, B (1972), *Svensk numismatisk uppslagsbok. Mynt i ord och bild 1521–1972*, Numismatiska bokförlaget, Stockholm.

Tingström, B (1984), *Sveriges plåtmynt 1644–1776: En undersökning av plåtmyntens roll som betalningsmedel*, Almqvist & Wiksell International, Stockholm.

Tingström, B (1995), 'Stormaktstidens penningväsen', in Jonsson, K, U Nordlind, and I Wiséhn (eds.), *Myntningen i Sverige 995–1995*, Svenska numismatiska föreningen, Stockholm.

Velde, F, and W Weber (1998), *A Model of Bimetallism*. Working Paper 588 (August), Federal Reserve Bank of Minneapolis, Research Department, http://www.minneapolisfed.org/research/WP/WP588.pdf (2007-08-10).

Velde, F, W Weber, and R Wright (1999), 'A Model of Commodity Money, with Applications to Gresham's Law and the Debasement Puzzle', in *Review of Economic Dynamics*, vol. 2, pp. 291–323.

Vendels sockens dombok 1615–1645 (1925), Almqvist & Wiksell, Uppsala 1925.

Wallroth, K A (1918), *Sveriges mynt 1449–1917: bidrag till en svensk mynthistoria meddelade i myntdirektörens underdåniga ämbetsberättelser*, Stockholm.

Wettmark, M (1995), 'Den moderna mynthistorien. Nya metaller', in Jonsson, K, U Nordlind, and I Wiséhn (eds.), *Myntningen i Sverige 995–1995*, Svenska numismatiska föreningen, Stockholm.

Wiséhn, I (1995), 'Från kaos till ordning: 1800-talets betalningsmedel', in Jonsson, K, U Nordlind, and I Wiséhn (eds.), *Myntningen i Sverige 995–1995*, Svenska numismatiska föreningen, Stockholm.

Wolontis, J (1936), *Kopparmyntningen i Sverige 1624–1714*, Lund.