2.
Swedish monetary standards in a historical perspective[1]

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2.1.   Introduction

Since 1873 the krona (crown, abbreviated SEK), divisible into 100 öre, has been the main monetary unit in Sweden. Before that date Sweden had various domestic currencies that were used as means of payment. In various periods there was a fluctuating market exchange rate between these currencies. Inflation figures, for example, will therefore differ depending on which monetary unit one follows because the value of some currencies fell more over time than the value of others.[2]

This chapter classifies the monetary standards in Sweden from the Middle Ages to the present, and gives an overview of the various currencies that were in use. A commodity standard was in place during most of Sweden's history, while the fiat standard is a rather late innovation. The classification into monetary standards is also related to the issue of debasement under the commodity standard and the mechanisms behind the rise of multiple currencies. Exchange rates of coins often deviated somewhat from the theoretical exchange rates based on the relations between their intrinsic metal values. The monetary history of Sweden provides examples of immediate as well as protracted adjustments of exchange rates and prices in response to debasement.

The term "Sweden" used in this book could be questioned from a historical perspective. Up to the 17th century, the monetary history of various regions within the present borders of Sweden coincided with Denmark's. Since Finland was part of the kingdom of Sweden-Finland up to 1809, the monetary history of Sweden and Fin-

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1   I want to thank especially Jan Bohlin, Bo Franzén, Klas Fregert, Cecilia von Heijne, Lars O. Lagerqvist, Johan Söderberg and Daniel Waldenström for comments on the content of this text.

2   One example is given in Jansson, Palm and Söderberg (1991, pp. 6–12), for the 17th century.

land coincided up to the early 19th century. Norway and Sweden formed a union in 1814-1905. Up to 1814, the Norwegian monetary system was coordinated with the Danish. In the period 1814–73, Norway retained its own system, where 1 speciedaler = 120 skillings.[3] During the Middle Ages Gotland had its own monetary system.

This book discusses foreign exchange rates as well as exchange rates between various domestic currencies used in Sweden. Foreign exchange is intimately connected to the domestic currency system. Most domestic currencies, like mark, daler and riksdaler, were originally imported. The riksdaler and the ducat[4] circulated as domestic as well as foreign coins.[5] At the exchange, often no distinction was made between riksdaler in foreign and domestic coins. Foreign coins played an important role not least because in earlier times international transactions were made in coins.[6]

The appendix at the end of this chapter lists various money terms that have been used in Sweden, and Finland, up to the early 19th century.

2.2.   The functions of money

Money has four basic functions: a medium of exchange, a store of value, a unit of account and a standard of deferred payment. A distinction is sometimes made between the all-purpose money of modern economies, which serves all of money's four basic functions, and the special-purpose money of economies that are not fully monetarised, which in limited contexts only serves one or two of these functions.[7]

Money can exist in either physical or ideal form. Money in ideal form is a pure unit of account or notational device, and was used in exchange and counting houses. Money in physical form (mainly coins before paper notes came into circulation) was initially the only or main medium of exchange and store of value, but this changed during the Early Modern Period, first in foreign trade. Some of the foreign currencies quoted in Sweden in the 17th and 18th centuries – most notably, the Hamburger reichstaler banco – were not minted coins but monies of account.

In the medieval and early modern monetary system, it is important to distinguish between monetary units referring to physical means of payment and the ones that served merely as units of account. Although a monetary unit could establish identity between physical and ideal monies, there were periods when a difference arose. This could upset the different functions of money, for example, implying that the unit of account and standard of deferred payment could refer to different mediums of exchange valued differently in the market. After a period of confusion and conflict about, for example, the type of money in which old debts should be paid, the conse-

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3   Lagerqvist and Nathorst-Böös (1968, p. 56).
4   The ducat is spelled 'dukat' in Swedish.
5   Also in Denmark, most of the rix-dollar coins that circulated in the 16th century were of foreign origin (Friis and Glamann, 1958, p. 3).
6   Heckscher (1941, p. 5).
7   Thurborg (1989, p. 89). The distinction is criticised in Melitz (1970).

quence could be bifurcation of old monetary units. For example, the term daler referred at first to daler coins minted with a fixed silver content; in the 1570s the daler coin was set equal to 4 marks. Later the daler coin came to be valued at more than 4 marks and a bifurcation occurred between the daler as a coin and the daler as a unit of account. The daler as a coin then came to be termed riksdaler, while the daler became a unit of account equal to 4 marks (see Table 2.3). During the 17th century, the term daler bifurcated further (see Chapter 4).

2.3.   Commodity money

Money first arose as commodity money, existing in physical form and primarily valued for its physical properties. This was also the main form of money in a longer historical perspective. The permanent replacement of commodity money by fiat money is a recent innovation, established in the closing decades of the 20th century.

The introduction of a single domestic currency system can be seen as part of the transformation from a pre-capitalist, feudal or semi-feudal economy, to a modern, capitalist one. An efficient national market required a common abstract standard.[8] To be an effective unit of account for commodities, money itself had to rise beyond its original physical commodity form. However, this Weberian process of rationalisation within the monetary sphere was protracted and complicated, involving achievements as well as setbacks, a process that is still continuing (at least at the international level, as shown by the rise of the Euro in the late 20th century).

Commodity money was linked to various precious metals. In Sweden, three metals have been important in this respect: silver, gold and copper.

Even when commodity money prevailed, coins of precious metal were never 100 per cent pure commodity money. Money as pure commodity would not be money. Velde, Weber and Wright (1999) emphasise that commodity money, as the name suggests, is a 'hybrid of a commodity and money'.[9] The peculiarity of money is that its usefulness mainly comes from its property as exchange value, not from its physical properties. The face value of the metal coins was generally somewhat higher than their intrinsic metal value, which enabled the ruler to obtain an income from minting. The difference constitutes a 'fiat component' of the coin's face value.[10] As Nathan Sussman puts it, '[t]he holder of bullion willingly paid a premium to have raw metal transformed into standard coins, due to the savings on transaction costs to be gained from using a universally accepted medium of exchange'.[11] Keynes even defines a non-monetary economy as 'an economy in which there is no asset for which

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8   Davidson (1919, p. 118).
9   Velde, Weber and Wright (1999, p. 306).
10   Sargent and Velde (2002, p. 19).
11   Sussman (1993, p. 50).

The Banker and His Wife, by Marinus van Reymerswaele (1490–1546). The picture shows gold as well as silver coins, and was painted at the time of a commercial revolution in Europe.
Source: http://commons.wikimedia.org/wiki/File:De_geldwisselaar_en_zijn_vrouw.jpg

the liquidity-premium is always in excess of the carrying-costs'.[12] Had the monetary unit exactly reflected its fine metal content, the mint would have suffered a loss because of the minting costs.

In other words, the mint equivalent, the nominal value minted from a fixed weight of a metal (measured in, for example, daler silvermynt per ship pound), was somewhat higher than the mint price, i.e. the price of bullion when it is brought to the mint.[13] The mint price and the market price of bullion were not necessarily equal.[14] The mint equivalent less the mint price is the gross seignorage per unit weight.[15] Gross seignorage includes minting costs; net seignorage is the mint's pure profit. The seignorage rate is the ratio of seignorage per unit weight to the mint price (of the same unit weight). For example, at the height of the Great Debasement in England, in 1547, one troy pound pure silver was minted into 7.2 pounds sterling – the mint equivalent – while the mint price of the same unit weight of silver was

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12 Keynes (1936, p. 239).
13 Quinn and Roberds (2006, p. 12).
14 Smith (1999 [1776], pp. 59 and 130).
15 Redish (2000, p. 27). Sussman (1993, p. 50), uses the terms 'mint charge' instead of gross seignorage and 'mint par' instead of mint equivalent.

2.996 pounds sterling.[16] The (gross) seignorage per minted troy pound pure silver was, therefore, 4.204 pounds sterling, and the (gross) seignorage rate 1.403 or 140.3 per cent (=4.204/2.996), an extremely high profit rate at the time.

Minting was connected to power and the state formation process. This process was not linear. For example, the first attempt to mint coins in Sweden in the late 10th and early 11th centuries was abandoned.[17] As argued by Jacques Melitz:[18]

'The monetary evolution of the West has not been guided by an invisible hand of progress, but largely imposed by conspicuous actions of government … Many of the foremost features of the monetary systems we know today, in fact, are the result of governmental improvisations following crises.'

Given that the relative price of bullion does not change dramatically, commodity money should be accompanied by price stability. However, inflation under commodity money is well known, as discussed further in Chapter 8. This reflects the hybrid nature of commodity money, and that it includes a fiat component, which could be temporarily increased.

Depreciation under a metallic standard involves an increase in the mint equivalent. It occurs either by enhancing money, i.e. increasing the legal value of the existing coin, or through debasement, i.e. reducing the fineness of the precious metal from which the coins are minted or by reducing the weight of the coins (or both). The ruler could temporarily increase his income from minting through debasement (provided the mint price initially does not increase as much as the mint equivalent).[19] Monetary debasement was the main source of secular inflation in Sweden before 1715, while later inflation was mainly caused by excessive supply of fiat monies.[20] Debasements also gave rise to a complicated monetary system, with the circulation of parallel currencies.

Inflation takes different forms under a metallic and a fiat standard. Under a metallic standard, the debased coins are supposed to circulate at par with the old, better coins but in reality there is usually, with some delay, a premium on the better coins. Under a fiat standard, the previously issued fiat monies usually do not circulate at a premium, although the bifurcation between riksgälds and banco notes in Sweden during the 1790s shows that this can happen (as mentioned in Chapter 4).

Occasionally, depreciation led to the formation of separate currency systems, when the inferior coins usurped the names of the better coins[21] (as in the case of the term daler in Sweden). Therefore, many monetary units became devalued over time (see the list of money terms in the appendix).

The strengthening of the monetary unit, or recoinage, under the metallic stan-

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16 Redish (2000, p. 90).
17 Malmer (1995, p. 25).
18 Melitz (1970, p. 1032).
19 Spufford (1988, pp. 289-290), and Redish (2000, p. 34).
20 Läge (1961).
21 Heckscher (1941, p. 4).

dard was not the mirror image of depreciation. For example, it was not accompanied by negative seignorage. Although nominal prices usually fell substantially following the introduction of better coins, this should not be interpreted as severe deflation, which is taken account of by the inflation index presented in Chapter 8. When the ruler returned to strong money, he began minting coins of a fine metal content that approximated the older coins before debasement. Whereas under depreciation, debased coins were, at least officially and initially, supposed to be at par with the older better coins, under recoinage the face value of the debased coins was reduced significantly and exchanged at this reduced value for the new strong coins.[22] This can be compared with the 20th century when zeros have been struck from inflation notes on various occasions (see Chapters 7 and 8). The debased coins often ceased to be legal tender after some time.

The face value of the coin could fall beneath its intrinsic metal value, which, for example, often happened with old coins with a higher content of precious metal than the new debased coins with the same face value. According to Gresham's Law, if the difference is sufficiently large, the better coins tend to be driven out of circulation and melted down.[23]

However, good money does not always drive out bad money,[24] as shown by the many examples for Sweden in Chapters 3 and 4. The issue is connected to the problem of whether coins circulated by weight, i.e. in accordance with their intrinsic metal value, or by tale, i.e. in accordance with their face value. The better coins could command a premium (though not necessarily in proportion to their weight), allowing them to stay in circulation. Although the existence of legal tender legislation required individuals to accept both good and bad coins as if they were of equal value, this was not easily enforced. Even when enforced, the better coins were often hoarded (i.e. used as a store of value) rather than melted down, allowing them to be brought back as means of payment under changed circumstances.

The type of transaction tended to differentiate the demand for various types of means of payment. Coins of smaller denomination could be minted with an intrinsic metal value that was significantly lower than their face value;[25] this became more common in the 19th century. Such coins became de facto token coins. Copper was mostly used for this purpose. Reducing the minted amount of coins of smaller denomination, according to the so-called 'standard formula', meant that their value did not fall below their face value, at the same time as shortages of petty coins could be avoided.[26] This could be accomplished by either restricting free minting (see below) or increasing the seignorage rate of petty coins.

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22 Spufford (1988, p. 290), and Sussman and Zeira (2003, p. 1776).
23 Heckscher (1936 vol. I:1, pp. 202–3), and Heckscher (1941, pp. 3–4).
24 Redish (2000, p. 30), and Rolnick and Weber (1986).
25 Redish (2000, pp. 107–9).
26 Sargent and Velde (2002, p. 5).

2.4.   Classification into monetary standards

Arthur Rolnick and Warren Weber write that a monetary standard refers to 'the objects that serve as the unit of account and that back the objects that circulate as generally accepted means of payment (i.e., the objects that back the objects that are money)'.[27] Monetary standards can be classified in various ways and the definitions and terminology can vary between studies.

A currency can be seen as a system of account, with a fixed relation between the monetary units constituting this system. Table 2.1 presents a classification into monetary standards used in this chapter for Sweden, based on the relation between the currency (or currencies) and the object (or objects) backing the currency (or currencies).

The main difference is between commodity and fiat standards. Under a *commodity standard* the currency is backed by a fixed amount of a commodity, or several commodities under a *multi-commodity standard*. Several currencies can also be backed by the same commodity. When the commodity is a metal it is called a *metallic standard*. Under a *fiat standard* the unit of account is some abstract value not linked to any commodity. The classification of monetary standards is primarily connected to the function of money as a unit of account, and not, for example, to whether notes or intrinsic value coins are the most common means of payment.

The difference between various standards is not black and white. For example, the date when Britain introduced the gold standard is difficult to pin down – the years 1717, 1774, 1816, 1819 and 1821 have been suggested depending on what criteria one uses.[28] Thus, a distinction must be made between the official monetary standard and the de facto standard in place (see Table 2.2). A country can be on a metallic standard officially, while de facto the metallic standard has been abandoned if the circulating notes are made inconvertible.

Under a pure metallic standard there must be complete freedom to exchange money for metal and metal for money.

One condition often set for a pure metallic standard is free minting, i.e. that anyone can go to the mint and procure for a quantity of unminted metal an amount of coins, with a deduction for seignorage (i.e. 'free' does not mean free of charge).[29] A pure metallic standard also presupposes unrestricted export and import of the metals from which the coins are minted.

Under a metallic standard based on free minting the price of bullion fluctuates – at least theoretically if the markets function efficiently – within the strict borders of the bullion points (gold, silver or copper points), as is further discussed by Håkan Lobell in Chapter 6 for the 19th century. These points are not determined arbitrarily, but are market prices. At the upper bound of the bullion price it is profitable

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27   Rolnick and Weber (1997, p. 1310).
28   Redish (2000, pp. 161–2).
29   Velde and Weber (1998, p. 5).

to turn specie coins into bullion. Bullion will then be exported. At the lower bound of the bullion price it is profitable to deliver bullion to the mint. Bullion will then be imported.

The interval between the upper and the lower bullion point is narrower for silver than for copper and even narrower for gold than for silver. An increase in seignorage rates lowers the lower bound of the bullion price and thus increases its distance from the upper bound. Furthermore, Thomas Sargent and Francois Velde argue that the 'intervals between the minting and melting points for large and small denomination coins identify a price level band within which the ordinary quantity theory operates, cast in terms of the total quantity of coins'.[30]

Free minting can be restricted and minting can be conducted on government account. In Sweden, free minting was periodically restricted, for silver coins in the 16th century[31] and for copper coins in the 17th and 18th centuries.[32] When the right to procure minted coins for unminted metal at the mint is restricted or does not exist, the market value of coins can be held significantly above their intrinsic commodity value. Under such circumstances, there is no lower bound for the bullion price, although the upper bound still exists, since the option of melting coins into bullion continues to be open.[33] The band within which the ordinary quantity theory operates will also be wider under such conditions.

The difference between free and restricted minting is not always clear, for instance in the case of a significant increase in the seignorage rate. If the fiat component of a coin's face value is large, the coin in question becomes de facto a token coin. Furthermore, Thomas Sargent and Francois Velde argue that in the absence of an explicit free minting policy, the ruler can still pursue a policy that resembles this. Provided the ruler tries to maximise profit, the mint would buy an unlimited amount of metal at a mint price.[34]

The *mono-metallic standard* is based on a single metal. The alternative is the *multi-commodity standard*.[35] In the West, the multi-commodity standard was not finally abandoned until the late 19th century.

The most common multi-commodity standard involves two precious metals. The most common combinations have been silver and gold, gold and copper, and silver and copper. Velde and Weber define a bimetallic standard de jure as one in which two different metals 'have unlimited legal tender at a fixed rate and both are freely minted'.[36] According to Eli Heckscher, while the *bimetallic standard* implies a fixed relation between two types of coins based on two different metals, the *parallel stan-*

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30 Sargent and Velde (2002, p. 11).
31 Heckscher (1935 vol. I:1, p. 202).
32 Heckscher (1936 vol. I:2, p. 606).
33 Sargent and Velde (2002, p. 20), and Cottrell (1997, p. 10).
34 Sargent and Velde (2002, p. 129).
35 Redish (2000, p. 26).
36 Velde and Weber (1998).

dard allows a floating exchange rate between coins of different metals.[37] The bime-tallic standard is rather unstable and usually de facto transforms into a parallel or a mono-metallic standard. The fluctuations in the relative prices of various metals cause the mint equivalent at some point in time to be lower than the bullion price for one of the metals. Coins minted from the latter metal therefore either tended to be exchanged at a premium or were withdrawn from circulation (see below). Some authors use a broader definition of bimetallism, referring to all monetary standards where two different metals back one or several currencies.

While fiduciary monies, bank notes and token coins, issued by private or public institutions, are convertible into precious metals, fiat monies are not.[38] Under a *fiat standard,* bank notes and token coins are inconvertible. In practice, it can sometimes be difficult to make a distinction between a fiat and a metallic standard.[39]

Under a *full metallic standard,* all monetary transactions are conducted in metallic coins. With the exception of the early 1660s, this was the case in Sweden up to around 1700. The full metallic standard was initially replaced by a *specie standard*, implying that fiduciary monies, notes convertible into coins, were issued. The classic example is the international gold standard in 1880–1914 (see Chapter 6).[40] Under a *bullion standard*, the circulated notes are partly covered by unminted bullion, which was the case when the gold standard was partly re-established internationally in the 1920s. Indirectly it implies that free minting is abolished (if unminted bullion could be exchanged for specie coins it would de facto be a specie standard). Under a specie or bullion *exchange standard* the national currency is convertible into currencies that, in turn, are convertible into specie or bullion. Only small fluctuations are allowed in the exchange rates. The classic example of a gold exchange standard is the Bretton Woods system after the Second World War (only the dollar was convertible into gold, while other currencies followed the dollar), lasting up to 1971 (see Chapter 7).

If free minting prevails (and the seignorage rate is very low), the value of coin types in the same precious metal would tend to be fixed (or fluctuate within a very narrow band). However, if free minting is restricted for at least one coin type, the exchange rate between different coin currencies of the same precious metal could fluctuate. Under such a system, it was usual for each coin currency to have its own legal status and sphere of circulation. For example, in 17th century Sweden, debts made in one coin currency usually had to be paid back in the same coin currency, i.e. there was a clear separation between different standards for deferred payment. Eli Heckscher names such a system a *coin types standard* (a free translation of the terms "sortmyntfot" in Swedish and "Sortengeld" in German that Heckscher actually used), which he distinguishes from the parallel standard. Under the latter, according to a narrow definition (especially if free minting is a condition), the exchange rate is

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37 Heckscher (1936 vol. I:2, p. 607).
38 Redish (2000, pp. 25 and 246).
39 Lobell (2000, pp. 13–14).
40 Redish (2000, p. 246), and Flandreau and Zumer (2004).

fixed for coin types of the same metal.[41] Some authors use a broader definition of the parallel standard that would include fluctuating exchange rates between coins types of the same metal.

In this chapter, the somewhat broader term *multi-currency standard* is introduced, defined as a standard in which several units of account exist that are not fixed in value relative to each other. This is contrasted to a *mono-currency standard*, based on a single currency (see Table 2.1). For example, the present division of one krona into 100 öre constitutes a mono-currency standard. It involves only one system of account, not two separate systems, since the relation between krona and öre is fixed.

While a parallel standard is always a multi-currency standard, the multi-currency standard can also be combined with mono-metallism. Furthermore, it can be combined with a fiat standard, if the exchange rates between two or more fiat currencies, or fiat and metallic currencies, fluctuate relative to each other.

Under a bimetallic standard, two different metals back the same unit of account or currency, and a fixed exchange rate is presupposed (at least de jure) between coins minted from the two metals. It is, therefore, a mono-currency standard (see Table 2.1).

Here the terms multi- and mono-currency standard are used to describe the domestic economy. At an international level, a multi-currency standard usually prevails. The introduction of various currency unions (for example, the euro or the international gold standard) can be described as attempts to introduce a mono-currency standard for several countries.

2.5. From commodity to fiat standard

Table 2.2 contains descriptions of the monetary standard in Sweden from the 12th century to the present. The riksdaler before 1777 and gold coins before 1873 were mainly international currencies, and have not been considered when establishing monetary standards. Table 2.3 is a summary of the value relations between various currency units, according to official and market rates. The categorisation of Table 2.2 should not be regarded as rigid, since in practice various monetary standards partly overlap.

Standards that exist on a permanent basis are easier to identify. One problem concerns periods with a temporary fiat standard, as a result of the need to finance a war. Although the currency was then made inconvertible, there were expectations that convertibility would be restored later at the original rate of conversion. Michael Bordo and Finn Kydland therefore argue that such arrangements should be seen as forms of metallic standards.[42] In Table 2.2 a differentiation is made between 'long-term' and 'short-term' standards. Before the collapse of the Bretton Woods system,

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41 Heckscher (1936 vol. I:1, p. 205).
42 Bordo and Kydland (1992).

Table 2.1. *Classification into monetary standards developed in the present study based on the relation between the currency(ies) and the object(s) backing the currency(ies).*

		Number of currencies	
		One currency (mono-currency standard)	Two or more currencies (multi-currency standard)
Object(s) backing the currency(ies)	One commodity (mono-commodity standard)	Mono-currency, mono-commodity standard.	Multi-currency, mono-commodity standard.
	Two or more commodities (multi-commodity standard)	Mono-currency, multi-commodity standard (for example, bimetallic standard according to a narrow definition). Is unstable and usually transforms into a parallel or a mono-currency, mono-commodity standard.	Multi-currency, multi-commodity standard. Two cases: 1) fixed relation between coins of the same metal (parallel standard according to a narrow definition); or 2) fluctuating exchange rate between coin types of the same metal.
	Abstract unit(s) and commodity/ies	Is logically excluded. Would be a mono-currency, mono-commodity standard with convertible fiduciary money circulating.	Combined fiat and commodity standard. Often de facto a fiat standard if commodity currencies play a minor role.
	Abstract unit(s) (fiat standard)	Mono-currency, fiat standard.	Multi-currency, fiat standard.

all fiat standards were more or less viewed as temporary (sometimes lasting several decades), and the link to a metal was sustained in one form or another.

On a long-term basis, Sweden was, in one form or another, on a silver standard up to 1624, on a copper and silver standard 1624–1776, on a silver standard 1776–1873, on a gold standard 1873–1971, and on a fiat standard from 1971 onwards.

In Europe (and other parts of the world[43]) before the 19th century, silver was the main precious metal backing the currency commonly in use. Gold currency was used to a lesser extent, mainly for high-value transactions.[44] In Sweden, before the adoption of the gold standard in 1873, gold coins played only a minor part in domestic trade. The ones imported or minted were mainly used in foreign trade. In medieval and early modern Europe, silver formed a standard to which all currencies and prices could be related. It is therefore the practice of some price historians to transform

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43   See, for example, Flynn, Giráldez and von Glahn (2003).
44   Friedman (1990, p. 85).

Gold bars produced in Sweden in mid-1950s by Boliden. Each bar weighed 12½ kg and was worth 73,000 SEK according to the Bretton Woods arrangement, which Sweden joined in 1951. In 1955, this sum was the equivalent of a male manufacturing worker's pay for 7 years (see Chapter 10).
Source: http://www.riksbank.se/upload/Bilder_riksbank/Kat_sedlar_mynt1/huller_buller_high.jpg

prices in the local currency into prices in grams of silver, which makes historical prices comparable internationally.

Figures 2.1 and 2.2 present the 'world' gold-silver (value) ratio from 1400 to 2005 (average of France, Kraków, and Austria 1400–27 and 1542–51; England, France, Kraków, Luzern and Austria 1427–1541 and 1552–1686; Hamburg 1687–1832; and London from 1833 onwards). Apart from a rise in the first half of the 17th century, the ratio was quite stable before the classic international gold standard in 1880–1914. The exchange rate of one ducat (a gold coin) in riksdaler (linked to silver), presented in Chapter 4 for the period 1652–1776, also displays a surprising stability over time.

During the 15th and 16th centuries the 'world' gold-silver ratio was around 11. During the first half of the 17th century it increased from 11–12 to 14–15, and then stayed at 14–16 up to the 1870s. Gold became relatively more precious than silver when most developed countries went over from a silver to a gold standard. In the late 19th century the ratio increased to above 30. During the 20th century the value ratio was extremely volatile and its level was much higher than in the previous centuries.

One important source of depreciation was the wear from circulation and clipping of coins, which implied that newly minted coins (if not debased) tended to be under-

Figure 2.1. *'World' gold-silver (value) ratio 1400–1850*
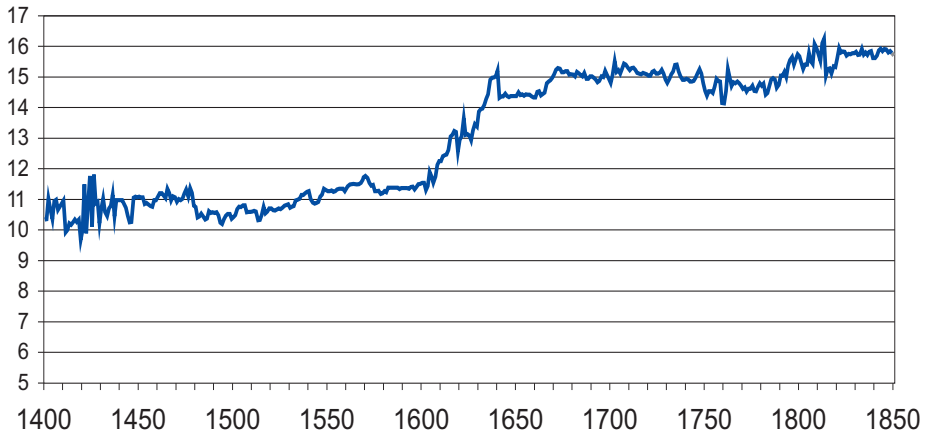
Sources: 'MEMDB – Medieval and Early Modern Data Bank' and 'Measuringworth. com'. Average of France, Kraków, and Austria 1400–26 and 1542–51; England, France, Kraków, Luzern and Austria 1427–1541 and 1552–1686; Hamburg 1687–1832; London 1833–50.

Figure 2.2. '*World' gold-silver (value) ratio 1850–2005.*
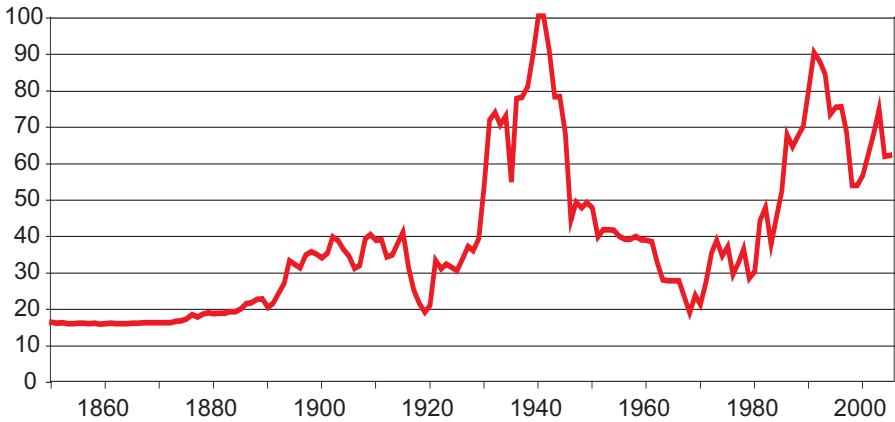
Source: 'Measuringworth.com". Based on London prices. Continues the series from Figure 2.1.

valued relative to older coins.[45] Short-term solutions were either recoinage, when clipped coins were exchanged for new ones at a reduced rate, or debasement, when new, inferior coins could circulate at par with the old ones.[46] The metallic standard was never a complete guarantee for the intrinsic metal content. A debasement cycle consists of rapid debasement followed by recoinage. In Sweden, debasement cycles occurred in the 1350s, the 1360s, 1521–24, 1561–76 and 1590–93, which are further discussed in Chapters 3 and 4. The period 1716–19, dealt with in Chapter 4, could also be described as a debasement cycle, although the debased coins rather resembled fiat money. Most of these debasement cycles were connected to war and the need to finance the war through increased seignorage, and tended to be accompanied by rapid price increases. During these debasement cycles older better coins circulated alongside the debased ones, multiplying the number of currencies.

The empirical evidence from Sweden shows that the exchange rates of coins often deviated somewhat from the theoretical exchange rates based on the relation between their intrinsic metal contents. Furthermore, there are examples of immediate as well as protracted adjustments of exchange rates and prices in response to debasement. There were also large regional differences. When free minting and the number of debased coins were restricted, these coins initially constituted only a small part of the total money supply, and their value could be upheld significantly above their intrinsic metal value. At times, there was a shortage of means of payment, allowing the successful implementation of this strategy. On some occasions there was an anticipation that the debased coins would later be exchanged for better coins, either at par or at least at a better rate than implied by their fine metal content, allowing them to temporarily and partly function as token coins. This occurred, for example, in 1590–92 and 1716–18.

Against this background, there was a need for a currency unit, alongside current money, with a stable precious metal content. In Sweden, the mark silver and various gold coins had this function during the Middle Ages (see Chapter 3), while the riksdaler had that role after the 1530s (see Chapter 4). In Amsterdam and Holland, bank monies arose in the 17th century that were linked to the better coins, according to the standard of the mint, implying that a premium was paid for those monies, as discussed further in Chapter 5. These two foreign currencies also played an important role in the Swedish economy.

From 1624, copper coins were minted in Sweden with the intention that they would circulate at their intrinsic value, which was unusual in Europe. For example, a two-penny copper coin was minted in England in the 1790s with an intrinsic value equal to its face value, weighing 56 grams, but such coins were ordered once only and later castigated as being too clumsy for ordinary use.[47]

Sweden was the world's largest producer of copper and the minting of copper coins was used to regulate the international price of copper. During the 17th century

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45 Redish (2000, p. 33).
46 Sussman (1993, p. 52).
47 Redish (2000, p. 108).

Copper plate minted in 1644 to the nominal value of 10 daler silver-mynt, weighing 19.7 kg. 10 daler silvermynt was the equivalent of a male unskilled labourer's pay for around 33 days' work in Stockholm, and could buy five hectolitres of grains or 30 kg of butter.
Photo: The Royal Coin Cabinet, Stockholm.

the value ratio of copper to silver was around 94.[48] The heaviest copper coins were minted in the form of plates weighing from 0.5 to 20 kg. The copper standard coexisted with the silver standard (see Chapter 4).

In 1777 Sweden returned to the sole silver standard (based on the riksdaler as its main currency unit), which, with the exception of suspended convertibility in 1809–34, then existed up to 1873. In the period 1834–73, free minting was the rule for both silver and gold coins. In the 19th century, minting taxes were introduced, amounting to 0.75 per cent from 1830 for silver coins and to 0.3 per cent from 1835 for gold coins.[49]

The first banknotes in Europe of a modern type were issued by Stockholms Banco in 1661, a precursor of the Riksbank, established in 1668, but it was in the 18th century that non-metallic money came to dominate money supply. The *fiat standard* was in place during four periods in the 18th and 19th centuries: 1716–19, 1745–76, 1789–1803 and 1809–34. All four periods were preceded by wars and the need to finance these by issuing fiat money, which exemplifies how monetary innovation is often the result of crisis. Convertibility was later restored in every case but the fiat

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48   Heckscher (1936 vol. I:2, pp. 602–3).
49   *Nordisk familjebok* (1913).

monies were exchanged at a reduced rate, even though the initial plan was to restore convertibility at the old par value.

The ducat, a gold coin, continued to be minted up to 1868. In 1868–72 another gold coin, the carolin, was minted to link the Swedish gold currency to the Latin Monetary Union, formed in 1865.[50] One carolin was equal to 10 French francs (or units of the Latin Monetary Union) and to 7.1 riksdaler riksmynt. Its fine gold content was 2.90322 grams. Since one riksdaler contained 25.5045 grams fine silver, this relation would imply a gold-silver (value) ratio of 15.59. In comparison, the Latin Monetary Union was based on a gold-silver (value) ratio of 15.5 to 1.

However, plans to join the Latin Monetary Union were abandoned after the Franco-German war in 1870–71.[51] Instead, a Scandinavian Currency Union was formed by Denmark and Sweden in 1873, and Norway joined two years later (see Chapter 6). The main currency unit was the krona (crown), which was exchanged for one riksdaler riksmynt. Counting in riksdaler banco and riksdaler specie was abolished. When the Scandinavian Currency Union was formed, Sweden also changed from a silver to a gold (specie) standard, which lasted up to 1914 (see Chapters 6 and 7). The fine gold content of one krona was 0.403 grams. Since the riksdaler specie was equal to 4 kronor, the derived gold-silver (value) ratio was 15.81, which was in accordance with international markets. The krona of Sweden, Norway and Denmark, respectively, were equal. After the Scandinavian Currency Union was finally abolished in 1924, the krona continued to be Sweden's currency unit.

When the gold standard was introduced in 1873, free minting was abolished for silver but continued for gold coins. The tax amounted to 0.25 per cent for 20-krona gold coins and ⅓ per cent for 10-krona gold coins.[52]

During the 20th century the fiat standard was in place in 1914–22/24, 1931–51 and 1971 onwards (see Chapter 7).

After the outbreak of the First World War, the Riksbank suspended convertibility into gold on 2nd August 1914. Convertibility was reintroduced at the old par value after the war, de facto in November 1922 and de jure on 1st April 1924, at the previous price of gold, but was suspended again on 27th September 1931 following the international Great Depression.[53] The period 1924–31 was not a full return to the gold specie standard of 1873–1914. Although gold coins were minted in 1920 and 1925, they were not widely circulated and were mainly used as gold reserves.[54] In June 1933 the krona was fixed to the British pound at 19.40 SEK (compared to 18.1–18.2 SEK under the previous international gold standard), and on 28th August 1939 to the US dollar at 4.20 SEK (compared to around 3.74 SEK under the previ-

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50 Wiséhn (1995, pp. 224–6), and Lobell (2000, pp. 117–8).
51 Lobell (2000, p. 117).
52 *Nordisk familjebok* (1913).
53 Jonung (2000, p. 19).
54 Wettmark (1995, p. 256).

ous international gold standard). The legal price of gold was 20.67 USD per ounce up to 1933, when it was raised in stages to 35 USD per ounce in early 1934.[55]

Although during the Second World War a de facto fiat standard was in place, the dollar exchange rate (and therefore also the price of gold in SEK) was stable. In 1946 the krona was revalued by 14.3 percent (1 USD = 3.60), but in 1949 it was devalued by 30.5 percent (1 USD = 5.17 SEK),[56] which is discussed further by Jan Bohlin in Chapter 7.

Sweden joined the Bretton-Woods system formally on 31st August 1951,[57] when a gold exchange standard prevailed, but at a higher gold price than during the previous gold standard. Central bank currencies would remain convertible into US dollars, and only the US dollar was convertible on demand into gold.[58] During the Bretton Woods system, one US dollar was linked to gold at the rate of 35 USD per ounce or 1.12527 USD per gram. Since one dollar was equal to 5.17321 SEK, this implies that the fine gold content of one krona during the Bretton Woods system was 0.17178 grams, i.e. half of the fine gold content fixed in 1873.

Since the fall of the Bretton Woods system in 1971, Sweden has been on a fiat standard. A difference between the present and earlier fiat standards is that the link to precious metals has been completely severed and there are no plans to reintroduce a metallic standard. Only from the 1990s onwards has the fiat standard been accompanied by price stability. This international price stability is based on the inflation targets of central banks, where inflation is measured by the Consumer Price Index. However, the commodity aspect of money has not been completely abandoned. Since the unit of account is backed by the commodities constituting the Consumer Price Index, the present fiat standard possesses some features of a non-metallic multi-commodity standard, resembling what Stanley Jevons called a 'tabular standard'.[59] Although the unit of account is backed by a decreasing amount of commodities over time (i.e. allowing some inflation), even during the metallic standard the amount of metal backing the unit of account (at least before the 19th century) tended to decrease over time.

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55 Friedman (2000, p. 86).
56 Jonung (1975, pp. 182–4), and Jonung (2000, p. 19).
57 Ahlström and Carlsson (2006, p. 64).
58 Redish (2001, p. 247).
59 In the late 19th century, Stanley Jevons (1875, Ch. xxv) favoured a 'tabular standard', under which a multiple legal tender would be adjusted in accordance with the general price level. He asked whether 'the progress of economical and statistical science might not enable us to devise some better standard of value'.

Table 2.2. *Monetary standards in Sweden since the 12th century.*

Period	'Long-term standard'	'Short-term standard'			
		Official monetary standard	De facto monetary standard	Main currency unit	Other currency units (on a floating market rate with the main unit)
12th century to 1624	Silver standard linked to the mark	Mostly full metallic, multi-currency, silver standard (different currencies were predominant in different regions)		Mark (penningar). Before 1300, different penny coins in Götaland and Svealand.	Mark silver/lödig*, mark gutnisk, Danish mark, gammal örtug, rhensk gyllen, noble
1534–1624		Mostly full metallic, mono-currency, silver standard (at some periods multi-currency standard based on silver, in 1590-1592 partly a fiat standard based on token coins)			Daler/rdr, gyllen (gold), krongyllen
1624–33	Copper and silver standard linked to daler koppar-mynt and daler silver-mynt as units of account	Copper standard	Full metallic, multi-currency, copper and silver, standard	Öre in copper coins	Öre in silver coins, mark in silver coins, rdr
1633–43		Silver standard	In the 1630s, full bimetallic, copper and silver, standard. In the early 1640s parallel standard.	Dsm/dkm	Rdr
1643–65		Copper standard	Initially bimetallic and later multi-currency standard	Dsm/dkm linked to plates, initially also to silver coins	Mark in silver coins, öre in silver coins, rdr, ducat, Palmstruch's credit notes
1665–74		Silver standard	Multi-currency standard	Dsm/dkm linked to plates and öre courant	Carolin, rdr, ducat, Palmstruch's credit notes
1674–81		Copper standard	Full metallic, multi-currency, copper and silver, standard	Dsm/dkm linked to plates	Öre courant, carolin, rdr, ducat
1681–86		Silver standard	Full metallic, multi-currency, copper and silver, standard	Dsm/dkm linked to plates and öre courant	Carolin, rdr, ducat
1686–1709			Initially bimetallic copper and silver standard, later mono-metallic, silver standard	Dsm/dkm linked to öre courant and carolins, initially also plates	Rdr, ducat
1709–16		Copper standard	Bimetallic, copper and silver, standard	Dsm/dkm linked to plates, öre courant and carolins	Rdr, ducat

Table 2.2 (cont.). *Monetary standards in Sweden since the 12th century.*

Period	'Long-term standard'	'Short-term standard'		Main currency unit	Other currency units (on a floating market rate with the main unit)
		Official monetary standard	De facto monetary standard		
1716–19	Copper and silver standard linked to daler kopparmynt and daler silvermynt as units of account	Suspended copper specie standard	Fiat standard (multi-currency, fiat, copper and silver standard)	Dsm in token coins	Dsm in plates, Görtz' carolin, carolin, öre courant, rdr, ducat
1719–45		Copper specie standard	Multi-currency, copper and silver, standard	Dsm/dkm linked to plates	Öre courant, carolin, rdr, ducat
1745–66		Suspended copper specie standard	Fiat standard (multi-currency, fiat, copper and silver standard)	Dsm/dkm, officially in plates, de facto in notes	Öre courant, carolin, rdr, ducat
1766–76		Silver standard		Officially rdr specie, de facto notes in dsm/dkm	Öre courant, carolin, ducat
1776–89	Silver standard linked to riksdaler specie/ riksmynt	Silver specie standard		Rdr specie	Ducat
1789–1803		Silver specie standard (banco)	Fiat standard (multi-currency, fiat and silver specie standard)	Rdr riksgälds	Rdr banco, ducat
1803–09		Silver specie standard		Rdr banco/riks-gälds	Ducat
1809–34		Suspended silver standard	Fiat standard		Rdr specie, ducat
1834–55		Silver specie standard		Rdr banco/riks-gälds/ specie	Ducat
1855–73				Rdr riksmynt	Ducat, carolin (gold)
1873–14	Gold standard linked to krona as a unit of account	Gold specie standard		Krona	
1914–1922/24		Suspended gold standard	Fiat standard		
1922/24–1931		Gold bullion standard (de facto from 1922, de jure from 1924)			
1931–51		Suspended gold standard	Fiat standard		
1951–71		Gold exchange standard			
1971–		Fiat standard (gold standard abandoned de jure in 1974, de facto in 1971)			

Sources: Fregert and Jonung (2003, p. 225), Jonung (2000, p. 19), and Wallroth (1918).

Abbreviations: d.s.m. – daler silvermynt, d.k.m. – daler kopparmynt, rdr – riksdaler

*Not a currency unit.

Table 2.3. *Exchange rates between Swedish currencies from the Middle Ages to the present.*

Period	Official rates of conversion	Market rates
Before 1290	1 mark = 8 öre = 24 örtug = 192 penningar (Svealand) = 384 penningar (Götaland)	1 mark silver = 2 or 3 to 4.56 mark penningar 1 mark gutnisk of somewhat lower value than the mainland Swedish mark
c. 1290–c. 1400	1 mark = 8 öre = 24 örtug = 192 penningar	1 mark silver = 3 to 8 mark penningar (in proper coins)
c. 1400–c. 1450		1 mark penningar = 1 to 4.5 mark gutniska 1 revalsk (Livonian artig) = 4 to 6 Swedish pennies 1 mark lödig = 6 to 11 mark penningar
c. 1450–1534	1 mark = 8 öre = 24 örtug = 192 penningar From 1523 1 öre = 2 minted örtugs 1 mark dansk = 3 mark gutniska = ¾ mark svensk = 6 Swedish öre (1450-1550)	1 mark lödig = 8 to 24 mark penningar (in proper coins)
1534–60		1 silver daler = 3 to 4.125 marks
1560–76	1 mark = 8 öre = 192 penningar	1 silver daler = 3.75 to 32 marks
1576–89		1 slagen daler = 4 to 4.5 marks
1589–92		1 slagen daler = 4.5 to 18 marks
1592–1624	1 mark = 8 öre = 192 penningar 1 (svensk daler) = 4 mark 1 slagen daler/rdr = 4.5 marks in 1607–19 and 6.5 marks in 1619–33.	1 slagen daler/rdr = 4.5 to 6.75 marks

Table 2.3 (cont.). *Exchange rates between Swedish currencies from the Middle Ages to the present.*

Period	Official rates of conversion			Market rates
1624–33		1 öre in copper coins = 1 öre in silver coins 1 rdr = 6.5 marks		1 rdr = 6.5 to 17.5 marks in copper coins 1 rdr = 6.5 to 12.8 marks in öre silver coins 1 rdr = 6.5 to 8 marks in mark silver coins
1633–43		1 d.s.m. = 2 d.k.m. 1 rdr = 12 marks k.m. = 1.5 d.s.m.		1 rdr= 12 to 17.5 marks k.m.
1643–65		1 d.s.m. = 2.5 d.k.m. 1 rdr = 15 marks k.m. = 1.5 d.s.m.		1 rdr = 15 to 21.75 marks k.m. 1 öre in silver coins = 2.5 to 3 öre k.m. 1 daler carolin = 2.5 to 3 d.k.m.
1665–81	1 daler = 4 marks = 32 öre	1 d.s.m. = 3 d.k.m.	1 carolin = 16 öre s.m. 1 rdr = 19.5 marks k.m. = 1.625 d.s.m. 1 ducat = 100 öre s.m. ≈ 1.923 rdr	1 rdr = 21 to 27.3 marks k.m. 1 öre courant = 3 to 3.5 öre k.m. 1 carolin = 16.5 to 20.8 öre s.m. 1 ducat = 40 to 54 marks k.m. = 1.92 to 2.06 rdr
1681–86			1 carolin = $18^2/_3$ öre s.m. 1 rdr = 24 marks k.m. = 2 d.s.m. 1 ducat = 128 öre s.m. = 2 rdr	1 rdr = 22.6 to 27.3 marks k.m. 1 öre courant = 3 to 3.1 öre k.m. 1 carolin = $18^2/_3$ to 20 öre s.m. 1 ducat = 48 to 52 marks k.m. = 1.91 to 2.08 rdr
1686–1716			1 carolin = 20 öre s.m. 1 rdr = 24 marks k.m. = 2 d.s.m. 1 ducat = 128 öre s.m. = 2 rdr	1 rdr = 24 to 27.1 marks k.m. 1 ducat = 47 to 60 marks k.m. = 1.88 to 2.29 rdr
1716–19				1 d.s.m. in token coins = 0.5 to 1 d.s.m. in proper coins 1 rdr= 26 to 140 marks k.m. 1 ducat = 1.99 to 2.03 rdr
1719–45			1 carolin = 25 öre s.m. 1 görtz' carolin = 16 öre s.m. 1 rdr = 3 d.s.m. (1718–76) 1 ducat = 2 rdr	1 rdr = 34 to 43 marks k.m. 1 öre courant = 3 to 3.4 öre k.m. 1 carolin = 25 to 31 öre s.m. 1 ducat = 68 to 90 marks k.m. = 1.97 to 2.06 rdr
1745–76				1 rdr = 38 to 108 marks k.m. 1 öre courant = 3.1 to 6.5 öre k.m. 1 carolin = 29.5 to 57.5 öre s.m. 1 ducat = 76 to 200 marks k.m. = 1.84 to 2.04 rdr

Table 2.3 (cont.). *Exchange rates between Swedish currencies from the Middle Ages to the present.*

Period	Official rates of conversion		Market rates
1777–89	1 rdr = 48 skillings 1 skilling = 12 run-stycken	1 rdr = 72 marks k.m. = 6 d.s.m.	
		1 ducat = 94 skillings ≈ 1.958 rdr	
1789–1803		1 ducat = 94 skillings specie	1 rdr banco = 1 to 1.67 rdr riksgälds
1803–09		1 rdr banco = 1.5 rdr riksgälds	
		1 ducat = 94 skillings specie	
1809–34		1 rdr banco = 1.5 rdr riksgälds	1 rdr specie = 1 to 2$^2/_3$ rdr banco
		1 ducat = 94 skillings specie (102 skillings specie from 1830)	
1834–55	1 rdr specie = 2$^2/_3$ rdr banco = 4 rdr riksgälds		
	1 ducat = 102 skillings specie		
1855–73	1 rdr riksmynt = 100 öre		
	1 rdr specie = 4 rdr riksgälds		
	1 ducat = 8.25 riksdaler riksmynt		
	1 carolin (gold) = 7.1 riksdaler riksmynt		
1873–	1 krona = 100 öre		

Abbreviations: s.m. – silvermynt, k.m. – kopparmynt, d. – daler, rdr – riksdaler

2.6.   Conclusions and summary

Monetary standards can be classified in various ways. A monetary standard refers to the objects that serve as the unit (or units) of account and that back the objects that are used as accepted means of payment. In this chapter, a distinction is made between a mono-currency standard, based on a single currency, and a multi-currency standard, based on several units of account that are not fixed in value relative to each other.

Under a commodity standard, the unit of account is backed by a fixed amount of a commodity, or by several commodities under a multi-commodity standard. In Sweden, gold, silver and copper have been used for this purpose. Under a mono-metallic standard, only one metal backs the unit of account. Under a bimetallic standard two different metals back the same unit of account, which therefore presupposes (according to a narrow definition) a fixed exchange rate between coin types made from the two metals. A parallel standard involves a fluctuating exchange rate between currencies made of different metals. Under a multi-currency standard, the market exchange rate between currencies of the same precious metal can fluctuate as well. Although Gresham's Law states that cheap money drives out dear money, one condition for that Law is a fixed exchange rate between the two. The existence of a premium on dear money allows it to remain in circulation alongside cheap money, which on numerous occasions in Swedish monetary history led to the formation of new currencies.

Under a fiat standard, the unit of account is some abstract value not linked to any commodity. The means of exchange consist of token coins or bank notes. While fiduciary money is convertible into specie or bullion, fiat money is not.

The difference between various monetary standards is not always clear-cut, and there is often a discrepancy between the official and the de facto monetary standard. Definitions of various monetary standards should not be applied too rigidly.

Up to 1624 Sweden was on a silver standard, with the mark as the main currency unit. In 1624–1776 a combined silver and copper standard was in place, with daler silvermynt and daler kopparmynt forming a common system of account, although a fiat standard was de facto in place in 1745–1776. In 1777 the sole silver standard was introduced, with the riksdaler as the main currency unit; this lasted only up to 1789 and was followed by a fiat standard with the riksdaler riksgälds as the main currency unit. The silver standard was reintroduced in 1803, was abandoned again in 1809 and reintroduced once more in 1834. In 1873 Sweden went from a silver to a gold (specie) standard. The krona replaced the riksdaler riksmynt as the main currency unit. Since the fall of the Bretton Woods system in 1971, Sweden has been on a pure fiat standard.

Appendix A2: Historical money terms

This list presents various money terms that have historically been in use in Sweden (as well as in Finland up to the early 19th century). Some foreign currency units are also included that have been used as means of payment in Sweden. The main sources are Wallroth (1918), *Kulturhistoriskt lexikon för nordisk medeltid från vikingatid till reformationstid* (1956-1978), and Lagerqvist and Nathorst-Böös (1968). For other sources see footnotes and various chapters of this book.

Abo: A coin that circulated in Finland in the 15th century and was worth 4–6 penningar.[60] It was the same, or of equal value, as the Livonian artig (revalsk).

Adolphin: During the reign of Adolf Fredrik (1751–71) the term 'adolphin' was sometimes used instead of carolin, equal to two marks in minted silver coins. One 'dubbel adolphin' was two carolins.

Albertustaler or Albertusdaalder: A silver coin first minted in 1612 in the Spanish Netherlands, with a fine silver content of 24.65 grams. See korsdaler.

Amsterdam rijksdaalder courant: One of the most quoted foreign currencies in Sweden during the 17th, 18th and 19th centuries. It was equal to 2.5 guilders. On the 25th of December 1681 the gulden was set equal to 9.613 grams of fine silver (having been 10.28 grams in 1620–59 and 9.74 grams in 1660–81). In 1845 the fine silver content of one guilder was decreased to 9.45 grams fine silver.[61]

Bondemark: A currency unit in Finland in the 15th century, equal to 24 abo or ¾ mark örtug.[62]

Carolin (early 17th century): A round gold coin minted in 1606–24 with the face value of 16 marks. It contained 4.8524 grams fine silver.

Carolin (1665–1776): A term used officially from the mid-1660s to designate two marks in actual silver metal coins. In the period 1665–1776 one carolin had the unchanged fine silver content of 7.2228 grams. Another term for carolin was 'halv svensk daler' (half Swedish daler). During the reign of Fredrik I (1720–51) the term 'fredrik' and during the reign of Adolf Fredrik (1751–70) the term 'adolphin' were sometimes used instead of carolin. One carolin was officially equal to 16 öre silvermynt up to 1681, 18⅔ öre silvermynt in 1681–86, 20 öre silvermynt in 1686–1716 and 25 öre silvermynt in 1716–76, although the market exchange rate was often higher.

Carolin (19th century): A gold coin minted in 1868–72. One carolin was equal to 10 French francs (or units of the Latin Monetary Union) and to 7.1 riksdaler riksmynt. Its fine gold content was 2.9032 grams.

Carolin (Görtz): 'Görtzka caroliner' were minted in 1718. One of Görtz' carolins

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60 *Kulturhistoriskt lexikon för nordisk medeltid från vikingatid till reformationstid* (1956-1978), 'Abo'.
61 See Chapter 5.
62 Hyötyniemi, (2000, p. 50).

was equal to 16 öre courant (the official value of one carolin before 1681), or 16/25 of one 'old' carolin.

Christin: 8-mark silver coin (later 4 carolins) that was minted in 1649 with the portrait of Queen Christina. It had the same face value as the later dukaton, although the christin had a higher fine silver content, namely 31.6997 grams.

Daler: A silver coin minted in Sweden from 1534 to imitate the German Joachimdaler. Up to 1776 (when the riksdaler became the main currency unit), this coin was not much used in domestic trade. Its fine silver content was stable throughout its existence; in 1534–36: 28.0593 grams, in 1537–41: 27.6245 grams, in 1542–1638: 25.5957 grams, in 1639–75: 25.2739 grams, in 1676–1830: 25.6973 grams and in 1831–73: 25.5045 grams. From the 1570s, 'daler' also came to refer to the unit of account, equal to 4 marks. To distinguish between these two types of daler, the silver daler was called 'slagen daler' (minted daler), later riksdaler, and the unit of account 'svensk daler' (Swedish daler). In the 17th century, several different counting systems arose based on daler silvermynt, daler kopparmynt, daler courant and daler carolin.

Daler carolin: A term used after the mid-1660s up to 1776, equal to 2 carolins or 4 marks in silver coins. Another term for daler carolin was 'svensk daler' (Swedish daler). One daler carolin was officially set equal to one daler silvermynt up to 1681, to 1 1/6 daler silvermynt in 1681–86, to 1.25 daler silvermynt in 1686–1716 and to 1 9/16 daler silvermynt in 1716–76, although the market exchange rate was often higher.

Daler courant silvermynt: Before 1777, the same as 32 öre courant. Officially one daler courant silvermynt was equal to one daler silvermynt, but in some periods the market rate was higher.

Daler klippingmynt (1590s): A term for 4 marks in debased klipping coins.[63] In the late 1592, one daler klippingmynt was set equal to ¼ daler in proper mark coins.

Daler kopparmynt: A unit of account that arose in the 17th century to distinguish it from daler silvermynt, although it formed the same system of account. 1 daler kopparmynt = 4 mark kopparmynt = 32 öre kopparmynt.

Daler penningar (late 16th century): The same as Swedish daler, equal to 4 marks.[64]

Daler silvermynt: A unit of account that arose in the 17th century to distinguish it from daler kopparmynt. In 1624, when the first copper coins were minted, one daler in copper coins was supposed to equal one daler in silver coins. However, the copper coins soon fell in value relative to silver coins. One daler silvermynt was equal to two daler kopparmynt in 1633–43, to 2.5 daler kopparmynt in 1643–65 and to 3 daler kopparmynt in 1665–1776. 1 daler silvermynt = 4 mark

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63 Used, for example, in 1592 in *Stockholms stads tänkeböcker från år 1592*, part 1 (1939, pp. 70 and 90).

64 Used, for example, in 1596 in *Vadstena stads äldsta tänkeböcker 1577–1610* (1952, p. 226).

silvermynt = 32 öre silvermynt. Although the fixed relation between the daler silvermynt and daler kopparmynt was supposed to establish a fixed relation between silver and copper coins, in some periods there was a deviation between the two types of coin in the market, implying that actual silver coins did not follow daler silvermynt. 1 daler in actual silver coins was, therefore, termed daler courant or daler carolin. After 1776, daler silvermynt continued to be used as a term for 1/6 riksdaler or 8 skillings, and later for 12 skillings riksgälds.[65]

Daler silvermynt in specie or daler silvermynt i vitt mynt: Around the mid-17th century, a term for daler silvermynt when payment was made in actual silver coins. From the mid-1660s, the terms 'daler courant' and 'daler carolin' were used instead.

Dubbel pjes (double pjes): In 1739–76, a term for coins that were minted as 10 öre, but had the nominal value of 12 öre courant. Also called '12-styver'.

Dubbel slant: From the late 17th century the same as two öre silvermynt in copper coins. In 1777–1803 it had the nominal value of ½ skilling (banco).

Ducat or florin: First minted in Venice in 1285. A gold coin that was imported to, and from 1654 also minted in, Sweden. The fine gold content of one Swedish ducat was 3.3431 grams in 1654–64, 3.3966 grams in 1665–1835 and 3.4006 grams in 1836–68. One Swedish ducat was worth around two riksdaler (specie).

Dukaton or dubbel svensk daler (double Swedish daler): Coin with the face value of 4 carolins. It was minted in 1664–1704 and had the same face value as the earlier christin, although the dukaton had a lower fine silver content, namely 28.8985 grams.

Engelot: A gold coin minted in France and England (in England under the name of angel) that was imported to Sweden. In the 16th century it weighed 5.18 grams, but less after 1601. In 1541, one engelot was valued 7.5 marks.

Engelsk or själländsk engelsk (English): A Danish 3-penny coin (1/64 Danish mark), minted as an English sterling. It was common in Götaland in the early 15th century, and circulated then as 1/4 Swedish öre (6 Swedish penningar). It initially contained 0.66 grams fine silver (which was less than for the English sterling).

Enkel daler: In the 16th century the same as the silver daler.

Enskilling: In 1834–55 a copper coin with the nominal value of 2/3 skilling banco (= 1 skilling riksgälds).

Enstyver: In 1799–1855, a copper coin with the nominal value of 1/4 skilling riksgälds.

Florin: The same as ducat.

Fredrik: During the reign of Fredrik I (1720–51) the term 'fredrik' was sometimes used instead of carolin, equal to two marks in minted silver coins.

Fyrk: Equal to ¼ öre. Fyrks were minted in silver in 1523–1601 and in copper in

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65 Talvio (1995, p. 205).

1624–60. Also called 'halvöre' (half öre), since from 1633 ½ öre in copper coins was set equal to ¼ öre in silver coins.

Gammal örtug (old örtug): The örtug minted before 1478. In the late 15th century a premium arose on 'gammal örtug': 1 'gammal örtug' = 9 penningar = 1.125 new örtugs in 1481; 1 'gammal örtug' = 10 penningar = 1.25 new örtugs around 1500; and 1 'gammal örtug' = ¾ öre = 1.5 new örtugs after 1523. The 'gammal örtug' was also minted in 1589–90 to the nominal value of ¾ öre.

Gote or gute: A coin minted in Gotland between 1320–40 and the mid-15th century, originally the Gotlandic örtug. In the 15th century, 1 öre gutnisk was set equal to 4 gote, so that 1 mark gutnisk = 32 gotar, but the relation 1 öre gutnisk = 3 gote is also known.

Gros tournois: A French silver coin that circulated widely in Sweden during the late 13th century and the first half of the 14th century, valued at 17–20 penningar. The gros tournois initially weighed 4.22 grams and had 23/24 fineness. Its weight and fineness were unchanged until 1322. After 1329, its weight changed frequently; the coin was no longer minted after 1364. The sterling was reckoned as one third of the gros tournois. [66]

Gyllen (silver coin): A currency unit in silver minted in the 1520s.

Gyllen (gold coin): The name of several gold coins that circulated in Sweden in the 15th, 16th and 17th centuries. It was supposed to have the same fine gold content as the florin or the ducat, but later the gyllen (gulden) was debased, and several types of gyllen coins circulated at various values. The 'rhensk gyllen' (Rhine gulden) had a lower fine gold content than the ducat and the 'lätte gyllen' (light gyllen) had an even lower content than the rhensk gyllen, whereas the 'ungersk gyllen' followed the ducat.[67]

Halv carolin (1665-1776): Half carolin, the same as one mark silver coin.

Halvanstyver (one and a half styver) or bankovitten (19th century): In 1802–55, the copper coin with the nominal value of ¼ skilling (banco). Equal in value to one and a half styver.

Halvöre: After 1633, the same as ½ öre kopparmynt.[68]

Hamburger reichstaler banco: The most quoted foreign currency in Sweden in the 18th and early 19th centuries. One Hamburger reichstaler banco was equal to 3 mark banco. In 1622, the fine silver content of one mark banco was 8.66 gram and of one reichstaler banco 25.98 grams, in accordance with the Leipzig convention establishing the reichstaler in 1566. From 1790 the issue rate of a reichstaler banco was 9.25 per mark of fine silver and the mark banco 27.75 per mark of fine silver. Since the mark of fine silver in Hamburg was equal to 233.855 grams, one reichstaler banco was the equivalent of 25.2816 grams fine silver. Although the

66   Spufford (1986, pp. 184–6).
67   Hildebrand (1983, pp. 910–1 and 947).
68   Stiernstedt (1863, pp. 61–2).

Hamburger reichstaler banco was often used as an equivalent for the riksdaler specie, the value of the Swedish riksdaler specie was normally somewhat higher.

Hvid: A Danish coin, minted from mid-14th to the late 17th centuries. Circulated in parts of Sweden in various periods. 1 hvid = 4 (Danish) penningar = 1/3 skilling. In 1451, the Danish hvid was set equal to 3 Swedish penningar. It was also used at that value (also called albus) when counting was done in mark danska (= 48 hvid).

Joachimstaler: Minted since 1518 in Joachimsthal in Bohemia. From 1534 the Joachimdaler was minted in Sweden and called daler, later slagen daler, riksdaler and riksdaler specie.

Kopparrunstycke: A term used from 1719 to 1776 (previously only runstycke) for coins with the face value of one öre kopparmynt that were minted from 1719 onwards.[69]

Korsdaler: Probably the same as the Albertustaler (kreutztaler). A coin with a slightly smaller silver content than the riksdaler that was imported to and quoted in the exchange rate markets in 17th century Sweden. In the mid-1660s, the legal value of one korsdaler was set to 50 öre silvermynt, which can be compared to 52 öre silvermynt for one riksdaler.[70]

Kreutzer: A copper coin minted by Swedish monarchs in the 17th century for circulation in Germany.

Krona: The currency unit introduced in Sweden in 1873 to replace the riksdaler when the Scandinavian Monetary Union was formed. One krona was set equal to one riksdaler riksmynt, but was linked to gold instead of silver. The fine gold content of one krona was 0.4032258 grams. The krona of Sweden, Norway and Denmark, respectively, were equal. After the Scandinavian Monetary Union was definitely abolished in 1924, the krona continued to be the currency unit of Sweden. During the Bretton Woods system, one US dollar was linked to gold at the rate of $35 per ounce or $1.12527 per gram. Sweden joined the Bretton Woods system in 1951.[71] Since one dollar stood at 5.17321 kronor, this would imply that the fine gold content of one krona during the Bretton Woods system was 0.17178 grams, i.e. half of the amount fixed in 1873. 1 krona = 100 öre. The international code is SEK.

Krongyllen: A gold coin minted in 1569–73 and 1598–99. One krongyllen was equal to 1.25 slagen daler and its fine gold content was 3.0395 grams.

Mark (unit of account): A unit of account used in Sweden up to 1776, equal to ¼ daler or 8 öre. During the 17th century, mark kopparmynt and mark silvermynt became two different units, although forming the same system of account.

Mark danska: A unit of account used in Sweden (mainly Götaland) around 1450–1550. In 1451, the official rate of the Danish hvid was fixed to 3 Swedish pen-

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69   Stiernstedt (1863, p. 62).
70   Starbäck (1886, p. 563).
71   Ahlström and Carlsson (2006, p. 64).

ningar. Since one mark danska = 16 skillings = 48 hvider (or albus), one mark danska was equal to 144 Swedish penningar, i.e. 1 mark danska = 6 Swedish öre = ¾ mark svenska. This became purely a unit of account, and counting in mark danska was done in Swedish coins and not in actual Danish coins (i.e. one mark danska was not necessarily equal to one actual Danish mark). Another term was 'mark danska i svenskt mynt' (Danish marks in Swedish coins).

Mark grossa: Mark in Gotlandic 'grossa'.[72] Probably the same as mark gutnisk.

Mark guld (mark in gold): During the Middle Ages, the same as gold weighing one mark (around 210 grams, gross weight).

Mark gutnisk: The mark gutnisk was originally the mark of Gotland, which had its own monetary system in the 12th and 13th centuries. In the 13th century Gotlandic coins were also used as the main currency in Öland, Småland and Östergötland. In that century: 1 mark gutnisk = 24 örtug = 288 penningar. Some time before the 1340s, Gotland adopted the Hansaetic system, where one Gotlandic örtug or gote was set equal to 3 pennies of Lübeck or 6 Swedish penningar. According to one theory, the Gotlandic mark silver was the same as the mark of Lübeck counted in gotar, originally equal to 64 gotar or 2⅔ traditional Gotlandic marks.[73] In the early 14th century, 1 mark in Götaland was counted as 32 gotar (based on 1 gote = 6 penningar). Since gotar deteriorated in value, this mark, called tysk mark in the 1410s and mark gutnisk from the 1420s, came to be worth less than the mark örtug.[74] Mark gutnisk was worth only ½ mark örtug in the 1420s and early 1430s, and around ¼ mark örtug in the 1440s. Gotland is believed to have adopted the Danish monetary system in 1449, when the gote was replaced by the hvid (= 4 penningar = 1/16 skilling = 1/48 mark), but the old gotar continued to dominate circulation in Gotland and Götaland in the second half of the 15th century. After the mid-15th century the term 'mark gutnisk' probably referred to different types of currency. In the 1530s, in Götaland the mark gutnisk was used as a pure unit of account, equal to ¼ mark örtug or ⅓ mark dansk.

Mark härdalsk: A unit of account used in Härjedalen during the Middle Ages; it was probably the same as the mark jämtsk.

Mark jämtsk: A unit of account used in Jämtland and known from 1346 to the late Middle Ages, probably linked to Norwegian coins from the 14th century. In 1437, 1 mark jämtsk = 1 13/35 Swedish mark.

Mark kalmarsk: The same as mark stackota or mark gutnisk.

Mark karlgill and köpgill: These two mark currencies are mentioned in Upplandslagen, written in the late 13th century. 1 öre karlgill was equal to 12 penningar and 1 öre köpgill to 8 penningar. Mark karlgill has been interpreted as mark sil-

72   Sjögren (1944, p. 354).

73   Hyötyniemi (1999).

74   Hyötyniemi, (2000).

ver, which is unconvincing since one mark silver was valued at 3–4.5 mark pen-
ningar at the time when the Upplandslagen was written.

Mark klipping (1570s): Mark in debased klipping coins.[75] In 1575, one mark in
proper coins was set equal to 6.5 marks in debased klipping coins. In 1576, one
mark klipping was reduced to one öre (1/8 mark in proper coins).

Mark klipping or klippingmynt (1590s): Mark in debased klipping coins.[76] In late
1592, one mark in proper coins was set equal to 4 marks in debased klipping
coins, and in May 1594 one mark klipping was further reduced to ¾ öre (0.09375
mark in proper coins).[77]

Mark kopparmynt: A unit of account that was never minted. 1 mark kopparmynt =
8 öre kopparmynt = ¼ daler kopparmynt. Foreign exchange rates were often
quoted in mark kopparmynt. When the riksdaler was introduced as the main cur-
rency unit in 1777, it was set equal to 72 mark kopparmynt.

Mark kölnisk (Cologne mark): A silver weight unit used in large parts of Europe.
Equal to 233.8 grams of silver in gross weight, although the fineness could vary.

Mark lybsk: Lübeck coins were particularly common in Götaland during the 14th
and 15th centuries. 1 mark of Lübeck = 16 skilling = 48 Witten = 192 pennies. 1
mark of Lübeck circulated as 2 Swedish marks in the early 14th century, but dete-
riorated to 1 mark or somewhat above later during the century. The fine silver
content of the mark of Lübeck, equal to 48 Witten, was 50–55 grams in the late
14th century; it was reduced to 46 grams in 1401, to 40 grams in 1411, to 28
grams in 1424, to 25 grams in 1433 and to 20 grams in 1461.

Mark lödig: The same as mark silver, a silver weight unit (as opposed to "mark pen-
ningar", which was a currency unit), used in the Middle Ages and the 16th cen-
tury. The term 'mark lödig' is known from 1341 onwards. Before that, the term
mark silver was used instead. In the 16th century it was equal to 210.616 grams of
silver, although there is uncertainty concerning the fineness of this silver. Assum-
ing that the fineness could vary between 85 and 95 percent, the mark lödig prob-
ably contained between 180 and 200 grams fine silver. Mark penningar depreci-
ated continually relative to mark lödig during the Middle Ages.

Mark penningar (mark in pennies): A currency unit, in contrast to mark lödig. Up
to the late 13th century, 1 mark penningar was equal to 192 penningar in
Svealand, but to 384 penningar in Götaland. From the late 13th century, 1 'mark
penningar' = 192 penningar in both Svealand and Götaland. The equivalent term
'mark örtug' was in use from the late 15th century onwards.

Mark rigisk or revalsk: The currency unit in Livonia, composed of present-day
Estonia and Latvia (Reval was the Swedish and German name for Tallinn). In the
13th century the mark rigisk was equal to 24 artig of Riga. In the 14th century

75   Used, for example, in *Vadstena stads äldsta tänkeböcker 1577–1610* (1952, p. 98).

76   Used, for example, in 1592 in *Stockholms stads tänkeböcker från år 1592*, part 1 (1939, pp. 51
     and 62).

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

another mark rigisk came into use, set equal to 144 artig, originally at par with the mark silver.[78] In the 1420s a third mark rigisk came into use, set equal to 36 old artig (or new schilling). The Riga way of counting in coins was common in Finland during the 15th and first half of the 16th centuries. In the 1520s and '30s, 1 'mark rigisk' = 9 öre in Swedish penningar. Probably also used as a unit of account for Swedish coins.[79]

Mark silver (marcha argenti puri): The same as mark lödig. Up to the 14th century the weight of mark silver could differ between regions. In Stockholm the weight was 209 grams, in Skara 215 grams and in Uppsala 218 grams.[80] The Danish mark silver was 3-4 percent heavier than the Stockholm weight. The term marcha argenti could also refer to units with a much lower fine silver content than the marcha argenti puri, although in Sweden the two terms were often used synonymously.

Mark (silver coins): Coins with this denomination were minted in Sweden in 1536–1755. From around 1660, the term carolin was used to refer to minted two-marks. The fine silver content of a minted one-mark coin was 8.854 grams in 1534–35, 8.2272 grams in 1536–40, 6.0176 grams in 1541–61, 5.8296 grams in 1562, 4.1371 grams in 1563–68, 2.0568 to 3.0852 grams from late 1568 to early 1571, 1.0284 grams from July 1571 to 1574/75, 6.0176 grams in 1576–89 (based on half-mark coins), 2.9971 grams from 1590 to early 1591, 0.6473 to 1.1753 grams from May 1591 to 1592, 4.2311 grams in early 1593, 6.399 grams in late 1593, 6.0522 grams in 1594–1603 (based on half-mark coins), 4.0503 grams in 1604–33, 3.9003 grams in 1634–38, 4.1297 grams in 1639–49, 3.9003 grams in 1649–63 and 3.6114 grams in 1664–1776. The one-mark coin was last minted in 1721, the two-mark coin in 1754 and the four-mark coin in 1755.

Mark silvermynt: A unit of account. 1 mark silvermynt = ¼ daler silvermynt = 8 öre silvermynt. Around the mid 17th century a difference in market value arose between the mark silvermynt as a unit of account and the mark silver coin, called 'halv carolin' (half carolin), even though their official values were the same up to 1681. The official value of a 'halv carolin' was raised to 1 1/6 mark silvermynt in 1681, to 1.25 mark silvermynt in 1686 and to 1 9/16 mark silvermynt in 1716.

Mark skånsk: The mark of Skåneland (Scania, Halland, Blekinge and Bornholm), which in the first half of 14th century was different from both the Danish and the Swedish mark. In this period, 1 mark skånsk was valued around 2 Danish marks and around 1.2 Swedish marks.[81] 1 mark skånsk = 240 penningar.

Mark stackota: A currency unit common in Götaland from the 1440s up to the late 15th century. There is evidence that the term was used as a synonym for mark

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78   Hyötyniemi, (1999).
79   Hallenberg (1798, p. 233).
80   Hildebrand (1894, p. 757).
81   See Chapter 3.

gutnisk, but some authors argue that the mark stackota was the traditional Gotlandic mark, equal to 24 gotar or ¾ mark gutnisk.[82]

Mark sterling: In the 13th and 14th centuries, the same as one mark silver in sterling coins. In 1272, one mark sterling was counted as 144 sterling coins, which contained 193 gram fine silver. In 1267 one mark sterling in Cologne weight was counted as 160 sterlings, which, in turn, was equal to two thirds of a pound sterling.[83]

Mark svenska (Swedish mark): Could refer to two different coins in the 15th and 16th centuries: (1) The same as mark örtug used in Sweden, as distinguished from mark dansk, gutnisk and jämtsk. (2) The same as mark danska in Swedish coins, and hence equal to ¾ mark örtug. Another term was 'mark danska i svenskt mynt'.[84]

Mark stockholmsk or holmsk: The same as mark örtug.[85]

Mark västgötsk: The same as mark stackota or mark gutnisk.

Mark örtug: The same as mark penningar.

Mark östgötsk: The same as mark stackota or mark gutnisk.

Myntsedel (coin note): Inconvertible notes issued in 1716 and 1717 with face values of 25, 10 and 5 daler silvermynt. These notes never circulated as widely as 'mynttecken' (coin tokens).

Mynttecken (coin tokens) or nödmynt (emergency coins): The coin tokens issued in 1716–19 at the face value of one daler silvermynt (except for the last coin token, 'Hoppet', issued at the face value of two öre silvermynt in 1719). A premium arose on proper coins relative the coin tokens.

Noble: An English gold coin imported to Sweden in the late Middle Ages and the 16th century. Its weight was 7.78 grams from 1354 and 7 grams from 1412. From 1464 the 'rosenobel' was minted, weighing 7.78 grams, the same as the noble before 1412. In the second half of the 15th century, 1 noble was worth 3–4 mark örtug.[86]

Palmstruchska kreditivsedlar (Palmstruch's credit notes): Initially convertible notes issued in 1661–64 by Stockholm Banco (forerunner of Sveriges Riksbank); the first banknotes in Europe in a proper sense. They were made inconvertible in 1664 and fell below their par values. After 1667 the notes were exchanged at their full nominal values.

Penning (Swedish penny): A currency unit from the Middle Ages to 1776. Up to the late 13th century, in Svealand 1 penning = 1/192 marks, in Götaland 1 penning = 1/384 marks (i.e. 1 Svealand penning = 2 Götaland penningar), and in

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82 Hyötyniemi (2000).

83 See Chapter 3.

84 Hallenberg (1798, pp. 35–6).

85 Used, for example, in *Stockholms stads tänkebok under vasatiden*, part 1, 1524–1529 (1915, pp. 82, 107 and 110).

86 See Chapter 3.

Gotland (and eastern Götaland) 1 penning = 1/288 Gotlandic marks (≈ 1 Göta-land penning). From the late 13th century, 1 penning = 1/192 marks in both Svealand and Götaland (but not Gotland). The penning was not minted after the 16th century, but continued to exist as a unit of account up to 1776.

Penning bla/blå: A monetary term used in Västergötland in the mid-12th century. The penning bla was most likely a foreign coin. According to one theory the term referred to a silver penny minted by the house of Blois in France, weighing 1.36 gram.[87]

Pjes/pjäs or enkel pjes: In 1719–76 a term for the silver coin that was minted as 5 öre (up to 1684 minted as 4 öre) but had the nominal value of 6 öre courant. It was also called 'sexstyver' and 'tolförestycke'. Its fine silver content was 1.5601 grams.

Plåt (plate): After 1715, two daler silvermynt in copper plates (later also 6 daler kop-parmynt in notes). Before 1715, the term riksdalerplåt was used.[88] After 1776, the term referred to 16 skillings (since 2 daler silvermynt = 1/3 riksdaler = 16 skill-ings), and later to 24 skillings riksgälds.[89]

Plåtmynt (plate coin): Copper coins minted as plates weighing between 0.378 and 19.7 kg and accepted as means of payment 1644–1776. They were denominated in daler silvermynt.

Pound sterling: The quoted currency unit for the exchange rate on London. One pound sterling was equal to 20 shillings or 240 pence. The fine silver content of one pound sterling (if counted in pennies) was reduced from 321.1 to 319.7 grams in 1278, and was further reduced to 308.4 grams in 1335, to 291.1 grams in 1344, 259 grams in 1351, 215.8 grams in 1412, 172.6 grams in 1465, 153.4 grams in 1524, 143.9 grams in 1542, 115.1 in 1552, 111.4 grams in 1601, and 104.6 grams in 1816. Britain went over to the gold standard in 1816. The gold content of the sovereign was fixed at 7.32 grams.[90]

Portugalös: The Swedish term for portuguezen, a gold coin. Some were minted dur-ing the reign of Johan III (1568–92). One Swedish portugalös weighed 34.4 grams and was set equal to 10 ducats or 4 rosenobel.

Reichstaler: The later term for the joachimthaler in Germany. The standard was introduced in 1566 by the Leipzig convention, which set the reichstaler as a coin containing 1/9 of a Cologne mark silver. In 1754, the Reichstaler was replaced by the Conventionsthaler, containing 1/10 of a Cologne mark silver.

Revalsk or räflisk (Livonian artig): The coins of Livonia that dominated circula-tion in Finland during the 15th century. The artig, minted from 1343, was ini-tially valued at 3 pennies of Lübeck or 6 Swedish penningar. In the 15th century, 1 revalsk was valued at 4–6 Swedish penningar. In the early 15th century, the

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87   Bjurling (1950).
88   Stiernstedt (1863, p. 62).
89   Talvio (1995, p. 205).
90   See Chapter 5.

term 'revalsk örtug' was also common; by the 16th century it had been replaced by the term 'rigisk skilling'.

Rhensk gyllen (Rhinish gulden): A gold coin imported to Sweden during the Middle Ages and the 16th century. Its fine gold content decreased from 3.4 grams in the late 14th century to 2.53 grams in the late 15th century. In the second half of the 15th century and the early 16th century 1 rhensk gyllen was valued around 1.5 mark örtug or 2 mark danska.[91] In 1533, 1 rhensk gyllen = 2/3 ungersk gyllen = 4/5 Joachimthaler.

Riksdaler: From the late 16th century the term used for the silver daler ('slagen daler'), in contrast to the Swedish daler, which was used as a unit of account and was equal to 4 marks. Later on the riksdaler could also denote other types of currency.

Riksdaler banco: In 1777–1809 the Riksbank notes were convertible into riksdaler specie and therefore linked to a fixed silver content. In 1809 the banco notes were made inconvertible and the riksdaler banco started to fall in value relative to the riksdaler specie. In 1834, the riksdaler banco (which in 1803 had been set equal to 1.5 riksdaler riksgälds) was fixed in value so that 1 riksdaler banco = 3/8 riksdaler specie.

Riksdaler carolin: The same as 3 carolins or 6 marks in silver coins. In 1633–65 the official value of one riksdaler was 6 marks or 48 öre in actual silver coins. The riksdaler counted in actual mark silver coins was termed 'riksdaler carolin', in actual öre silver coins 'riksdaler courant' and in actual riksdaler coins 'riksdaler specie'. The market value of the riksdaler specie rose and in 1665 its official value was set equal to 6.5 marks or 52 öre silvermynt. The counting of riksdaler in 6 marks in silver coins, riksdaler carolin, remained, but had a lower value than the riksdaler specie. When the carolin was appreciated in 1681 relative to öre courant, the official value of riksdaler carolin became higher than of the riksdaler courant. After 1665, one riksdaler carolin had the unchanged fine silver content of 21.6684 grams.

Riksdaler courant: In the 17th century equal to 48 öre courant, which towards the end of the century was the same as 48 öre silvermynt. In the 18th century it became a pure unit of account equal to 1.5 daler silvermynt (48 öre silvermynt). Up to 1681, 3 carolins were officially equal in value to 48 öre courant. However, in 1681 carolins appreciated relative to öre courant. From then on the riksdaler courant was probably not the same as the riksdaler carolin, although further investigation is needed on this issue.

Riksdaler riksgälds: A war with Russia led to the formation of the Riksgäldskontoret (National Debt Office), which started to issue riksgälds notes in 1789. These notes became inconvertible and soon dominated trade, replacing the Riksbank

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91 See Chapter 3.

(banco) notes. Riksdaler rikgälds fell in value relative to riksdaler banco. In 1803 the relation 1 riksdaler riksgälds = 2/3 riksdaler banco was fixed.

Riksdaler riksmynt: The main currency unit in 1855–73. Replaced riksdaler riksgälds at the same face value. 1 riksdaler riksmynt = 100 öre = ¼ riksdaler specie.

Riksdaler specie: The riksdaler with a stable fine silver content of 25.3-25.7 grams. The term was already being used in the first half of the 17th century. See daler.

Riksdalerplåt: In 1681–1715 a term for the copper plates with a nominal value of two daler silvermynt. In 1681, the official value of the riksdaler was set equal to two daler silvermynt. In 1715 copper plates were revalued by 50 percent, and in 1718 the official value of one riksdaler was set equal to 3 daler silvermynt. From 1715 the term 'plåt' was used for two daler silvermynt in copper plates, and later for Riksbank notes of 6 daler kopparmynt.

Rosenobel: A gold coin imported to Sweden, above all in the 16th century, weighing 7.78 grams. A double rosenobel (set equal to ½ portugalös or 5 ducats) was minted in Sweden during the reign of Johan III (1568–92) and weighed 15.3 grams.

Runstycke (before 1777): A term used from the early 1630s for one öre in copper coins,[92] while one öre in silver coins was termed (h)vitrunstycke. From 1719, the term kopparrunstycke was used.

Runstycke (1777–1855): 1/12 skilling. Coincided in value with the kopparrunstycke or öre kopparmynt of the currency system before 1777 (since 1 riksdaler = 6 daler silvermynt = 576 öre kopparmynt according to the conversion rate from old to new currency and 1 riksdaler = 48 skillings = 576 runstycken according to the new currency system of 1777).

Räknedaler: Daler that began to be used in the 1570s as a unit of account, in contrast to the silver daler.

Sessling or sexling: From the mid-1660s the same as the copper coin with the designated value of 1/6 öre silvermynt. From the early 1680s the term 'halvöre' (half öre) was used instead, since 1/6 öre silvermynt = ½ öre kopparmynt.

Sexskilling: In 1849–55, a term for the copper coin with a nominal value of 4 skillings banco (= 6 skillings riksgälds).

Sexstyver (18th century): In 1719–76 the same as pjes.

Sexstyver (19th century): In 1802–55, a term for the copper coin with a nominal value of one skilling banco.

Skilling: Introduced in 1777, when the riksdaler became the main currency unit in Sweden. 1 riksdaler = 48 skillings and 1 skilling = 12 runstycken. Later a difference arose between skilling banco, riksgälds and specie.

Skilling banco: 1 riksdaler banco = 48 riksdaler banco. From 1803, 1 skilling banco = 1.5 skilling riksgälds.

Skilling (Danish): 1 skilling = 1/16 mark = 3 hvids. A currency unit also used in

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92   Stiernstedt (1863, p. 61), and Hayes (2001 [1740], p. 337).

parts of Sweden (mainly Götaland) around 1450–1550, where 1 Danish skilling = 1/16 mark danska = 3/64 mark svenska = 3/8 Swedish öre.

Skilling riksgälds: Equal to 1/48 riksdaler riksgälds.

Skilling specie: Equal to 1/48 riksdaler specie. This was rather a unit of account; no coins were ever minted in this denomination.

Skilling svenska penningar (skilling Swedish penningar): A term used before 1550 when accounting was done in mark danska in Götaland. There were no Swedish skilling coins in this period. Neither was payment made in Danish skillings (i.e. one 'skilling svenska pengar' was not necessarily equal to one skilling in actual Danish coins); it was purely an accounting system based on Swedish coins. One 'skilling svenska penningar' was equal to 1/16 mark danska, 3/64 mark örtug or 3/8 Swedish öre.

Slant: From the mid-1660s the same as the copper coin with the designated value of one öre silvermynt. In 1777–1803 it had a nominal value of ¼ skilling (banco), since in 1777 1 riksdaler = 48 skillings was exchanged for 192 öre silvermynt (6 daler silvermynt). Another term was 'enkel slant'.

Styver (from the late 1710s to 1776): The same as one öre courant.[93]

Styver (1777–1855): A term for skilling coins, where one styver was initially equal to ¼ skilling (banco),[94] and later (from around 1800) ¼ skilling riksgälds or 1/6 skilling banco. This custom arose since the old copper coins continued to circulate in 1777–1803 at the nominal value of ¼ skilling (banco) per one öre silvermynt. The term styver was usurped by the coins in skilling riksgälds that were minted from 1799 onwards.

Svensk daler (Swedish daler): A unit of account used from the 1570s to designate 4 marks in silver coins, in contrast to slagen daler, which fluctuated in value relative to the minted mark coins. Later the term 'svensk daler' referred to two carolins.

Tjugostyver (twenty styver): The name for 10 öre after 1855. The value of 'tjugostyver' from 1855 onwards was somewhat less than the value before that of 20 styver, which was equal to 5 skilling riksgälds or 10/96 riksdaler riksgälds.

Tolvörestycke (twelve-öre piece): The same as pjes. Up to 1684, these coins were minted as 4 öre (from 1690 as 5 öre), which initially had the nominal value of 12 öre kopparmynt (since one öre silvermynt = 3 öre kopparmynt).[95] In 1717 the nominal value of this coin was increased to 6 öre silvermynt.

Tolvskilling (twelve-skilling): From 1834 the same as 1/16 riksdaler specie (since 1 riksdaler specie = 192 skillings riksgälds in 1834–55). After 1855, a term for 25 öre (since 1 riksdaler specie = 400 öre).

Treskilling (three-skilling): In 1834–55 a term for the copper coin with a nominal value of 2 skillings banco (= 3 skillings riksgälds).

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93 Stiernstedt (1863, p. 62).
94 Talvio (1995, p. 205).
95 Stiernstedt (1863, p. 62).

Tvåstyver (two-styver): In 1799–1855, a term for the copper coin with a nominal value of ½ skilling riksgälds.

Trestyver (three-styver): In 1802–55, a term for the copper coin with a nominal value of ½ skilling banco.

Tysk mark: In the 1410s in Götaland, the name for the mark counted as 32 gotar. From the 1420, the term mark gutnisk was used instead.

Tunna guld (barrel of gold): A unit of account for larger sums of money, a term borrowed from Germany.[96] First used in the late 16th century. Equal to 100,000 daler silvermynt, originally 100,000 silver daler. Since the daler silvermynt fell in value relative to the riksdaler, one tunna guld expressed in riksdaler fell over time. In 1777 it was equal to 16,666⅓ riksdaler specie (since one riksdaler specie was exchanged for 6 daler silvermynt), and in the 19th century the same as 16,666⅓ riksdaler banco (from 1834 equal to 6250 riksdaler specie). Although the term gives the impression of a specific weight of gold, the amount of gold that one tunna guld could buy fell over time: it could buy around 200 kg gold in the late 16th century, 28–29 kg gold in 1777 and around 10 kg gold in 1834.

Ungersk gyllen (Hungarian gulden): A gold coin that was imported as well as minted in 1568–73. One ungersk gyllen minted in Sweden was valued at 1.5 slagen daler and its fine gold content was 4.1245 grams. Internationally the coin was equal to one ducat, but in Sweden the minted ungersk gyllen had a higher fine gold content and was, therefore, not equal to one ducat.

Vit penning or Witten (white penny): A German 4-penny coin (1/48 mark of Lübeck) that was common in Götaland in the late 14th and early 15th centuries. In this period it circulated as 1/3 Swedish öre (= 1 örtug = 8 penningar).

Vitrunstycke: A term used in 1633–1776 for one öre courant.[97]

Vitten: Before 1777 a term for one öre silvermynt, in 1777–1855 for ¼ skilling (riksgälds from 1799) in copper (since in 1777, 1 riksdaler = 48 skillings was exchanged for 192 öre silvermynt), and in 1855–73 for ½ öre in bronze.

Åbo-mark: A currency unit used in Finland during the 15th century, equal to the Swedish mark but counted in coins of Riga (usually 32–48 revalska).

Öre (from 1855 onwards): The öre unit was reintroduced in 1855, although it only shared the name with the old öre. 1 riksdaler riksmynt (from 1873, 1 krona) = 100 öre. For comparison, while in 1777 one riksdaler specie was exchanged for 576 öre kopparmynt, in 1855 one riksdaler specie was set equal to 400 öre.

Öre (up to 1776): In the Middle Ages one öre was equal to 1/8 mark and 3 örtug. From the 1290s, 1 öre = 24 penningar in both Svealand and Götaland, but not in Gotland. In the 17th century a difference arose between öre silvermynt, öre kopparmynt and öre courant. The öre was abolished as a currency unit on the 1st of January 1777.

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96 *Nordisk Familjebok* (1892). See also Heckscher (1941, p. 11).
97 Stiernstedt (1863, p. 61), and Hayes (2001 [1740], p. 337).

Öre courant: The term for öre in actual silver coins. In some periods, for example 1686–1715, one öre courant was equal to one öre silvermynt, but in other periods there was a premium on öre courant.

Öre kopparmynt: A unit of account in 1633–1776. 1 öre kopparmynt = 1/8 mark kopparmynt = 1/32 daler kopparmynt.

Öre silvermynt: A unit of account in 1633–1776. 1 öre silvermynt = 1/8 mark silvermynt = 1/32 daler silvermynt. In 1624, when the first copper coins were minted, one öre in copper coins was supposed to be equal to one öre in silver coins. However, one öre minted in copper soon fell in value relative to one öre minted in silver. One öre silvermynt was set equal to 2 öre kopparmynt in 1633–43, to 2.5 öre kopparmynt in 1643–65 and to 3 öre kopparmynt in 1665–1776.

Örtug: A currency unit in Sweden in the Middle Ages and the 16th century. As a unit of account, 1 örtug = 1/3 öre = 1/24 mark. In 1523, the fine silver content of the öre was reduced, and thereafter 1 minted örtug = ½ öre. In 1589–90, the 'gammal örtug' was minted to the value of ¾ öre (in proper coins). This was also the last time örtugs were minted in Sweden. The örtug continued to exist during the 16th century as a unit of account (1 mark = 24 örtugs), which became different from the minted örtug. Furthermore, one 'mark dansk' (used in Götaland as a unit of account around 1450–1550) was also divisible into 24 örtugs. Therefore, the örtugs of the two different systems of account in Götaland and Svealand were different (hence, around 1450–1550, one öre was equal to 3 örtugs in Svealand, but to 4 örtugs in Götaland).[98]

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98 Hallenberg (1798, p. 175).

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