

# THE RELATIONSHIP OF HACKSILVER AND MINTING IN 10<sup>TH</sup> CENTURY SOUTHERN SCANDINAVIA

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## Introduction

The subject of this paper is the monetization in the Viking age with a focus on political and economic centralization. Hacksilver is a term for silver which has been fragmented or physically altered with disregard to its original form or function and is a development that is connected to the trading of metal by weight. Hacksilver is a specially defined term, but in the functioning of a truly weight-based economy, whether an object was cut or not played no role. Objects could be cut, in the case of hacksilver, or remain whole; it is clear that the shape the silver took was not as significant as the purity and substance. Coins, on the other hand, have a standard range of forms, but the purity and weight can vary depending on the accepted minting practices. In a monetized economy the valuation of coins and other forms of silver are differentiated, and a shift from a weight-based economy to a coin-based economy came with changing ideas concerning the use of silver.

How and when the monetization of Scandinavia occurred is an often debated subject. Coin use certainly predated widespread minting, but it is unclear whether these foreign issued coins were perceived as coins in the modern sense, such as having an accepted value that is not necessarily dependent on the material value. Coins of all origins might have been weighed with the aid of a scale, counted in pieces, or alternatively, its value could have been estimated through experience.

Efforts have been made to show that the 10<sup>th</sup> century Gotlanders had a monetized economy based on hints that the slightly heavier coins were handled differently than lighter coins (Herschend, 1989). Greshams Law is cited as the cause for sorting, but the evidence is not convincing upon closer examination (Metcalf, 1997, pp.330-2). We do not know when or where the coins were sorted. Several large hoards on Gotland have coins struck with the same set of dies and strongly suggest that the coins stayed together

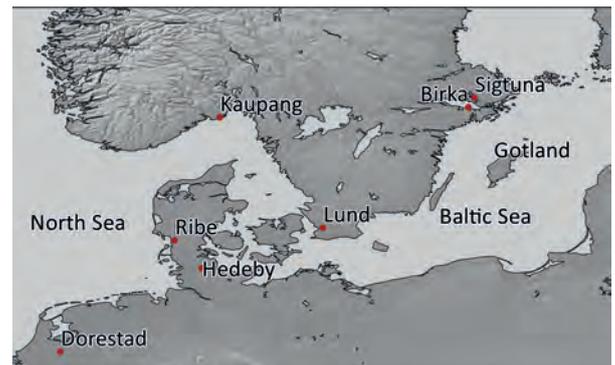


Fig. 1: Map of Northern Europe showing several important Viking Age settlements.

from the mint to deposition in Scandinavia and, therefore, argue against vivid circulation and sorting in Gotland (Naismith, 2005, p.201; Metcalf, 1997, pp.299-300). Basic questions such as “Were coins counted or weighed?” are challenging to prove due to the immense number of factors involved.

The monetization of Scandinavia is hard to grasp because there is a multitude of ways that silver could have been used at the same time, and the archaeological evidence is not clear. It can be argued that the beginning of a truly monetized system began with the growth of indigenous minting in Viking age Scandinavia, such as the proposed minting at Hedeby, Ribe, and other mints in Denmark and Sweden (Malmer 2002). Hedeby was founded by the Danes, and its political history is quite complex with relationships to the Swedes and Ottonians (Hilberg, 2009, p.84; Schlesinger, 1972, pp.80-82), but the minting at Hedeby (KG7-9 as well as Cross-coinage KG 10) most probably reflects the minting of Danish kings, or kings ruling Denmark (Malmer, 2002; Moesgaard, 2012; Wiechmann, 2013). The making of coins in 10<sup>th</sup> century Hedeby at the height of the hacksilver economy is a multifaceted issue; therefore, the discussion will be conducted on a theoretical level through the use of fragmentary archaeological evidence, historical comparisons and economic theory. Several facets of this

period of economic transition will be discussed, but a holistic view of the problem cannot be dealt with and is out of the scope of this paper (See Williams, 2007 for another prospective on the broad subject of monetization in the Viking age).

In the framework of our session theme, the potential political implications of coin-making and their importance to the financial situation of the Danish kingdom with particular reference to Hedeby will be highlighted. We should not just consider coins as being made just to suit public demand for a common currency system, and in contrast to Hårdh (1996, p.25) hacksilver should not be viewed as a development when there is insufficient 'official currency' for circulation. The hacksilver economy is a weight-based system that could have functioned without third-party enforcement such as a king; though there may have been indirect ways it could have been influenced. Anyone in the weight economy could take a silver ring and cut it in two to make a transaction, but it takes a state to make coins.

## Exchange, Taxation and the King

Besides being a potential propaganda tool for the king (Steuer, 2004, p.138; Malmer, 1997, pp.53-6) and a way of lowering transaction cost in an economic sense (North, 1984), the making of coins was also a source of revenue for the state, and the importance of this revenue should not be underestimated (Spurrford, 1988, pp.93-5). In Anglo-Saxon and Norman England silver was commonly collected by the state and redistributed to the public in the form of coins, and with every reminting a portion of the silver remained with the state. The reminting policy in England was an effective way of taxing wealth accumulated through trade. Although centralization of currency in Viking age Scandinavia is far from that of England, it is clear that attempts were made by kings to control the wealth accumulated through long-distance trade, and this was achieved in two ways: controlling the port of entry so that large transactions could be supervised (Steuer, 1987a, pp.188-197; Gustin, 1997, p.175) and through regulating the means of exchange (Steuer, 1987b, p.492; Gustin, 1997).

When we talk about the means of exchange in the Viking period, silver comes to the forefront as the most wide-spread and commonly accepted form of movable wealth (Skre, 2011, pp.67-91). Between 800 and 1050 AD, several systems were developed to deal with transactions where silver was the medium of exchange. Hedeby and Ribe are thought to be the first

towns in Scandinavia to mint, and this was influenced by the Frisian North Sea trade (Malmer, 2002, pp.120-2). This minting was short lived, particularly in Hedeby, giving way to the production of weight-adjusted silver rings and ingots. The use of weight adjusted ingots, neck rings and ring money dominated in the 9<sup>th</sup> century, and exchange at that time seems to reflect large transactions between few people (Hårdh, 1996, p.166). A general shift occurs in Southwest Scandinavia in the late 9<sup>th</sup> into the 10<sup>th</sup> century where silver began to be fragmented and used by a wider segment of the population (Kilger, 2008, pp.320-1). This decentralization of the use of silver occurs at a time when large amounts of Islamic silver were flowing into Scandinavia via eastern trade routes. This new hacksilver (weight-based) economy seems to develop in conjunction with the introduction of an Islamic style weight system (Steuer, 2002, p.137). From the mid-10<sup>th</sup> century onwards, there is a general decline in the use of hacksilver and a growth in minting and the use of coins in southern Scandinavia (Hårdh, 1996, p.161). Though there are regional chronologic differences (Hårdh, 1996, pp.165-181), for a broad discussion these generalizations are sufficient.

At Hedeby, around the year 900, the minting of a local currency was re-established. The 10<sup>th</sup> century coinages in Denmark are distinctive in design from other 10<sup>th</sup> century coins, building upon the motif of the earlier, 9<sup>th</sup> century Hedeby coinage, and are light in comparison to other contemporary coins (Malmer, 1966; Hårdh, 1996, p.88). Hacksilver weights are shown to decrease over the course of the 10<sup>th</sup> century and there appears to be a need for very small units, even as low as a fifth of a gram (Hårdh 1996, pp.24 and 128-9). This suggests that silver was both expensive and that it was used in very small, everyday transactions (Hårdh, 1996, p.86; Malmer, et al., 1991, p.43). The early 10<sup>th</sup> century production of coins in Hedeby was intended for circulation within Hedeby and its hinterland, but the finding of weights, scales and hacksilver point towards a dual system where coins could be counted or silver could be weighed for making transactions (Wiechmann, 2007, pp.233-6; Hilberg, 2011, pp.217-20).

## Royal Regulation and the Relative Value of Silver

To compare the local Hedeby and early Danish coins with hacksilver, there are differences in size and shape, but they are not different in silver content. The hacksil-

ver of the 10<sup>th</sup> century Baltic is remarkably pure, typically above 90 percent (Ilisch, et al., 2003), and Danish minting was not so advanced that silver was refined and adjusted to a standard fineness (Elfver, 2007). Our own elemental and lead isotope analysis of the coins and hacksilver from Hedeby seems to indicate that no refining occurred, and, therefore, the silver content reflects what was circulating at the time. The implication of this is that coins and hacksilver belong to the same standard of fineness and could, theoretically, have been weighed together. Hacksilver and foreign coins were the raw material for the coinage at Hedeby and the other 10<sup>th</sup> century Danish mints, and the assumption that locally minted coins were a trusted exchange medium because the king insured their quality may be inaccurate and misleading for the early and middle 10<sup>th</sup> century Danish coinages. From the hoard evidence, the testing of silver by pecking in Baltic Scandinavia rarely occurred before the 2<sup>nd</sup> half of the 10<sup>th</sup> century (Moesgaard, 2011), indicating that silver quality may not have been an issue earlier.

The benefits for minting must have not only outweighed the costs of collection, policy enforcement and skilled labor, but must have had real economic and political advantages. If the economy was purely a weight-based system, Hedeby coins were interchangeable with foreign coins and hacksilver by weight, but in a coin-based economy, by definition, there must have been a preference for coins. Therefore, if we consider that the ruler not only wants to cover the costs involved with minting but wants to make a profit, the coins should have been traded at an artificially higher value compared with all other silver. The use of foreign and hacksilver may have been discouraged through special taxation to reinforce the use of overvalued locally produced coins.

Kilger and Gullbekk demonstrate the discrepancy in value with later medieval accounts from the Icelandic Sagas (Kilger, 2011, pp.267-9; Gullbekk, 2009). An inequality existed between the value of minted silver and hacksilver/unminted silver with coins as having a higher worth than their weight in silver. The kings of Anglo-Saxon England were able to maintain an artificially high value of their coinage, as opposed to the value dependent on the silver content, but this could only be achieved where the king had tight control of the silver supply (Spurrford, 1988, pp.93-4).

This artificially high value of local coinage could only be enforced if other forms of silver were discouraged or regularly taxed upon arrival. In England and as well as at the border town of Magdeburg, in the Ottonian Empire, it is thought that foreign silver was collected and reminted into the local currency, but



Fig. 2: Coin minted at Hedeby, 900-920 AD (Malmer KG7) from the Steinfeld Hoard, Kr. Schleswig-Flensburg, Inv.Nr. KS 19624.1, (Wiechmann 1996 Cat.Nr. 39.1). Photo: S. Merkel, Schloss Gottorf.

in Denmark the kingdom-wide enforcement of such a policy did not occur until the last quarter of the 11<sup>th</sup> century under the coinage reform of Harald Hen (Spurrford, 1988, pp.75, 87, and 95). The king could not monopolize the silver supply at Hedeby for minting, just like in Sigtuna, Sweden, where there is also evidence that minting occurred alongside a weight-based system (Gustin, 1997). A compromise must have been reached which allowed some to trade in hacksilver/unminted/foreign silver whereas others used the locally issued coinage and the king could still collect silver from circulation for minting.

There are hints that the weight-based trade of silver was regulated through the use of standardized weights. The use of normalized weights may have initially been introduced through trading networks tied to the influx of Islamic silver and culture (Steuer, 1987b) and may have been necessary to deal with the growing complexity of long distance trade (North, 1991, p.100). By the end of the 10<sup>th</sup> century it appears that the manufacture of normalized weights was associated with royal power. Finds from the royal mint of Sigtuna suggest that coins and weights were made in the same workshop area. The complex technology used to produce these special brass-coated iron weights could have easily been used to restrict access and to limit imitation (Steuer, 2002, p.137; Söderberg, 2011). The sites where production waste for the manufacture of these weights were found are important royal and commercial centers like Hedeby, Birka, Sigtuna and Kaupang. Commerce may have been regulated by controlling who was allowed access to these types of weights (Gustin, 1997, pp.174-6).



Fig. 3: Piece of hacksilver, c. 1000 AD, fragment of an Anglo-Saxon style brooch from the List Hoard, List Hoard, Isle of Sylt, hacksilver Nr. 5, (Wiechmann 1996, cat.no. 16.A.5). Photo: S. Merkel, Schloss Gottorf.

## Transaction Costs and Economic Centralization

Although the reduction of transaction costs is an excellent explanation of why changes to an economic system were accepted and were ultimately successful, it cannot explain why or how the changes were initiated. It can hardly be suggested that the king's motive for minting were purely to improve the workings of the economy. Such a long view of economic policy seems to be anachronistic in the light of later medieval economic discussion (Nederman, 2001). Under the right conditions, a common currency system lowers the cost of transaction. The conditions were met in Southern Scandinavia to allow the monetized economy to develop, but this development could not have happened without third-party enforcement. With monetization trade could be carried out with a reduced reliance on scales and the king was in an ever-growing position to profit from the control of the silver supply. The production of standardized weights also fits into this development. Not only was the use of standardized weights a way to lower transaction costs in which all parties benefitted, their use and production probably required regulation, a role that the king likely used to his advantage.

## Conclusions

To return to Hedeby, coins were traded alongside hacksilver and this can be regarded as an unstable situation. For the reigning authority, politically and

economically speaking, there were numerous reasons to replace hacksilver with state-issued coins. When it is possible direct, physical control over the access to silver, for example through minting, is the best way to insure revenue and it is more secure than the control over the means of measurement, i.e. access to standardized weights. The striking of coins relied on a constant supply of silver through the collection of old and foreign coins and hacksilver and required power structure that could enforce it. Based on the coin finds, coin production was small and implemented at Hedeby on a local scale at first, but intensified in number and expanded in distribution during the reign of Harald Bluetooth in the second half of the 10<sup>th</sup> century (Malmer, 2002, p.127; Spurrford, 1988, p.82). From hoard evidence, the use of hacksilver declined in the second half of the 10<sup>th</sup> century and in the course of the next century was replaced with indigenous issued coinage (Hårdh, 1996, pp.128-129 and 161). This transition reflects a streamlining of both the exchange system and the funding base of the king and demonstrates growing centralization in the Danish Kingdom.

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