

Revisiting Heckscher on the monetization of Sweden

Klas Fregert

Department of Economics

Lund University

klas.fregert@nek.lu.se

Draft, August 2022

JEL: B22, E40, N13,

Keywords: monetization; Sweden; indirect barter; monetary exchange

Introduction	2
Heckscher' method: theory, history and institutions	3
The exchange system in the 16th century: Heckscher (1930, 1935)	5
Monetization in the 17th century: Heckscher (1936)	9
Revisiting Heckscher with new data	11
Conclusion	13
References	14
Appendix: Translation of Heckscher (1936, pp. 635-641)	16

Introduction

An important theme in Eli F. Heckscher's lifelong work on Sweden's economic history is the change from a barter economy to a monetary economy. Heckscher published one article on the topic in English, Heckscher (1930/1953) based on Heckscher (1923) and returned to the topic in *Sveriges ekonomiska historia sedan Gustav Vasa* (SEH).¹ I present his main findings in Heckscher (1930) and Heckscher (1935) on the exchange system in the 16th century and his follow-up findings on its change during the 17th century in Heckscher (1936, pp. 635-641), translated in the appendix.

Heckscher (1930) has received few citations.² The main reason appears to be that the topic itself has been largely neglected. The work by economists has been either purely theoretical or empirical. The initial theoretical contributions by Jevons (1875) and Menger (1892), did not spur any further inquiries until the 1970s, when models based on microeconomics began with references to Jevons and Menger. The models consider the thought experiment of introducing money into a non-monetary economy. If a monetary equilibrium exists and the public voluntarily chooses it, the model provides "microfoundations of money".³ The empirical work has been descriptive with empirical macroeconomic measures of monetization.

Regarding the historians, there is a fair amount of work on the monetization of Europe in the medieval period, which has been synthesized by Spufford (1988). Historical works by economic historians and economists on monetization are scarce with contributions by Cipolla (1956, ch. 1), Timberlake (1974), Bordo and Jonung (1987), Hicks (1989, ch. 5), and Selgin

¹ Heckscher (1930) is included in an anthology jointly published in 1953 by the American Economic Association (AEA) and the Economic History Association (Lane and Riemersma 1953). Heckscher's description of the relations between his contributions occur in a note to Heckscher (1930) "Most of the subjects treated in this article have been studied by the present author in Heckscher (1923)" and in a note in 1953: "Most of the subjects touched upon in the paper above have been treated more fully in the first two half-volumes of my economic history of Sweden since Gustavus Vasa SEH 1935-36."

² I find nine citations in Google scholar, none of which follows up on his empirical work.

³ The relation between Heckscher's findings and the microfoundation literature is discussed in Fregert (2015).

(2008).⁴ A related theme is the origin of money, recently developed by the legal historian Desai (2014) from a European perspective. The economists Einzig (1966) and Melitz (1974) discuss so-called primitive money described by anthropologists as potential original money.

There is hardly any exchange of ideas and findings between the theoretical, empirical, and the historical contributions.⁵ A renewed effort in Heckscher's footsteps to bring together theory and history could bring the topic of monetization closer to the center of economic history as hoped by Mitchell, in order

to frame the best account now feasible of the way men came to organize their dealings with each one another on the basis of money payments, the way this scheme spread from one sphere to another, [and] the material and cultural consequences to which it led. Mitchell (1944/1953, p. 205)

Fittingly, this paragraph ends the first essay in the section "Money and prices" in Lane and Riemersma (1953), just before Heckscher (1930/1953).

Heckscher' method: theory, history and institutions

Heckscher used the terms "natural and money economy" for barter and monetary exchange, originally coined in German by Bruno Hildebrand (1864) and still used by historians.

Heckscher (1930/1953) introduced the topic of natural and monetary economy as a showpiece for the need to use theory in economic history:

Now, if economic theory is at all what it ought to be, its reasoning should apply to economic life as such, and consequently to that of all ages. No doubt much remains to be done in the field of economic theory; but an attempt might at least be made to utilize economic theory for the work of economic history. Our subject [natural and money economy] will illustrate the need for that. Heckscher (1930/1953, p. 2).

⁴ I cannot find any references to empirical work on monetization in *The Oxford Encyclopedia of Economic History* (2003).

⁵ Arguably Heckscher's contributions were "too historical for the economists and too theoretical for the historians", as was suggested by his pupil Arthur Montgomery (1953/2003, p. 325) as a general explanation for why Heckscher's life's work on economic history had a limited impact.

His study appeared just after Heckscher (1929/1953), “A plea for theory in economic history”, cited as a forerunner to the postwar “New Economic History”.⁶ Heckscher (1929/1953) noted two uses of theory:

... the value of economic theory increases enormously when the work of historians is carried further than the stating of external facts; for its most important use refers to the *choice* of facts and the *explanation* of them. Heckscher (1929/1953, p. 425, Heckscher italics).

For choosing facts, theory for Heckscher meant in this case a typology of exchange systems. He began with a two-part classification of exchange systems:

From an economic point of view nothing in the domain of exchange is at all comparable in importance to the use or non-use of a medium of exchange. Heckscher (1930/1953, p. 208).

The second use of theory was the explanations of the chosen facts. Theory was used to study the effects of the exchange system on the economy in order to show:

... how each of the different forms of exchange and money was working in actual economic life at different times, as well as how they worked into each other... My intention is, ..., to make use of Swedish materials for a problem of general economic history. ... The most interesting part of the subject will be found in the implications and consequences of the methods of exchange. Heckscher (1930/1953, p. 210).

Regarding method, exchange mechanisms are prime examples of institutions, which are central to economic history. Heckscher (1929/1953) remarked on the peculiar character of institutions as economic facts, which makes economic history a challenge:

Economic History has an object and materials which are usually more intangible than those of other branches ... and while *economic facts are always internal, human, or psychological, like institutions, it has usually been nobody's business to put them on paper...* It is therefore greatly to be feared that Economic History, of which so much has been expected will be unable to do the work allotted to it unless a clear view is gained of what it really means, which sort of facts it has to work upon. Heckscher (1929/1953, p. 427, my italics).

⁶ See McCloskey (1994).

In the case of the exchange mechanism, a key problem is the paucity of written sources. Even when sources - such as accounts, receipts, and contracts - exist, we do not know if the goods were bartered or exchanged with coins, though often a monetary unit of account is given. Heckscher (1930) used as source material the letters and proclamations by the Swedish king Gustav Vasa. This source was unique in Heckscher's view in that it revealed in writing the relevant facts:

His long reign from 1521 to 1560, therefore, presents exceptional opportunities to the student of economic history. He was not only the principal landowner, but also the principal farmer; he was the all-important foreign merchant and the ablest trader within the country, being in fact master in every sort of acquisition, often not too scrupulous; ... When it is added that he had almost a passion for having everything *put upon paper* and brought to account, himself writing – rather dictating – singularly outspoken letters which fill twenty-nine stout volumes in print, it is clear that our opportunity to learn the economic life of Sweden in the sixteenth century is good. Heckscher (1930/1953, p. 210, my italics).

The exchange system in the 16th century: Heckscher (1930, 1935)

Heckscher began by dividing exchange system of a “natural economy” into three sub-categories:

a natural economy will then be found to contain no less than three different aspects held together only by the absence of a generally accepted medium of exchange, or currency: *absence of exchange, direct exchange, and indirect exchange without money*. Heckscher (1930/1953, p. 208, my italics).

I summarize Heckscher's main findings in three categories:

- 1) the prevalence of indirect exchange
- 2) the infungibility of money
- 3) the separation of the unit of account from the medium of exchange.

The two first findings concern the exchange system, while the last finding explains why written accounts with monetary units do not reveal whether the transaction is in kind or in

money. It is an issue in its own importance, but not directly pertinent to the choice of exchange system.

The first finding claimed by Heckscher (1930) was based his claim on indirect barter being the dominant type in Gustav Vasa's letters, which describe his own trades, but also other trade. Heckscher's prime example of indirect barter is triangular trade between the three regions Värmland, Dalsland, and Bohuslän between producers without an outside merchant in the 16th century. The trade is depicted in Figure 1, described in Heckscher (1930/1953, p. 215). Dalsland demanded dried fish supplied by Bohuslän. Bohuslän, in turn, demanded iron. Dalsland, however, did not supply iron, but salted butter. Värmland supplied iron and demanded butter.

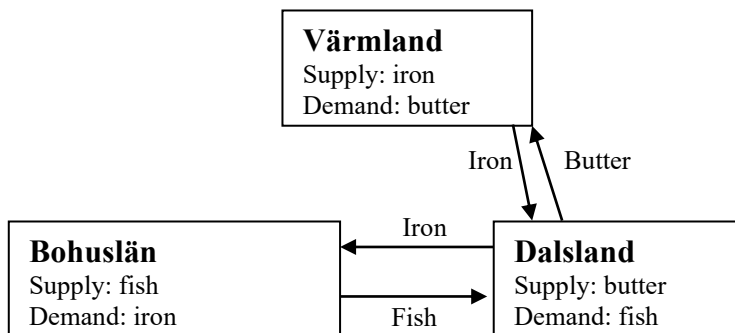


Figure 1. Indirect barter between three regions in 16th century Sweden.

The solution was indirect barter with Dalsland as the middleman and iron the intermediate good. Dalsland bartered its butter for iron from Värmland, and in turn bartered the iron for their demanded fish in Bohuslän. (Logistically butter or fish could also have been used as the intermediate good.) Two of the agents fulfill their desired trade with one transaction and the middleman fulfills it with two transactions, which makes for two transactions in total. None of the three potential trading pairs constitute a double coincidence of wants. Indirect trade thus expands trading opportunities as the “double coincidence of wants” required for direct barter is overcome. Note that the individual transactions in themselves cannot be identified as direct or indirect barter without further information, which stresses the need for full archival evidence.

Indirect trade entered all sectors of the economy. It was used in intertemporal trade involving credit. Citing a loan operation in kind including interest in kind, he concluded: “The sources

are full of these and other credit operations in kind.” Likewise international trade was also to a large extent carried out in kind. It occurred either through trade with foreign ships which demanded Swedish products and carried desirable import goods, passive trade in Heckscher words, which was favored by Gustav Vasa, or by Swedish ships trading at ports which sold export goods in exchange for desired import goods from Sweden. Finally, the public sector largely relied on taxes and expenditures in kind. One exemption was custom duties which were paid in money.

Figure 2 shows how the described in Figure 1 exchange could be solved with a generally accepted medium of exchange. Note that buyer will satisfy her demand directly, but will have to trade twice as buying goods is separated from selling goods. In total there will be three transactions as opposed to two transactions in the indirect barter case. Transportation costs will be lower as the good goes directly from the producer to the consumer.

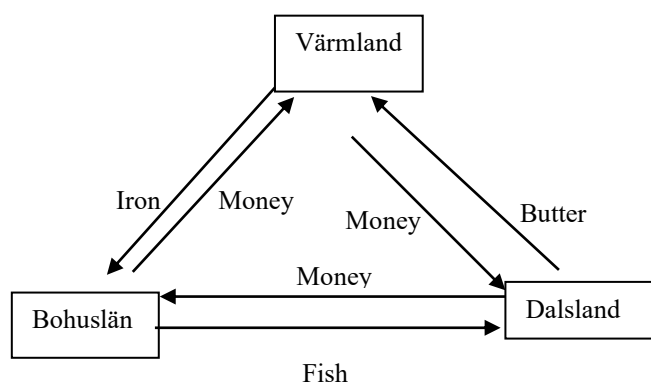


Figure 2. Monetary exchange with three agents.

Why then was monetary exchange so rare? Heckscher’s second finding: the “infungibility of money”, here coins, explains why indirect barter was preferable to monetary exchange.⁷ A seller accepting coins with limited fungibility may be forced to exchange them to another type of coin before making a purchase. An alternative would be to store the coin until a seller would accept the coins, a method used by Gustav Vasa. Another possibility would be to use money changers charging a fee for the exchange. Coins thus had the character of intermediate

goods, which increased transaction costs and reduced the scope for trade. Infungibility of the coins implied low liquidity (“saleability” in Menger’s terminology) as coins were not generally accepted medium of exchange.

Heckscher (1930/1953) based the non-fungibility finding on a number of observations:

- Monetary and barter transactions exist side by side, often without apparent cause, other than what is immediately available of coins and tradable goods, p. 216.
- Monetary exchange was sometimes combined with barter by the use of coins and goods in a single transaction, p. 217.
- Traders, like Gustav Vasa, kept separate accounts and separate inventories of different coins, p. 219.
- Different coins, domestic and foreign, circulated simultaneously, with less than perfect substitutability, p. 218.

Regarding the last point, Heckscher observed that:

... all sorts of foreign coins were continually imported and exported in the days of natural economy, in spite of the insignificance of trade; while at the present time, in spite of an enormous trade between countries, foreign monies practically are confined to tourist traffic. This shows the fundamental “natural economy” character of both money and foreign trade in earlier times, and the opposite in our day. Heckscher (1930/1953, p. 218).

Heckscher (1930/1953) summarized his explanation for indirect barter being the dominant exchange system as the lowest-cost exchange system of the three types: direct, indirect, and monetary exchange:

On the one hand, the difficulties of barter in a community where private trading prevails are clear. Each of the two parties to an exchange must hold the peculiar position of being at the same time able to offer what the other party wants and wanting what the other party is able to offer, all this at a rate agreeable to both. On the other hand, the introduction of money is often a difficult operation. Consequently both direct exchange and money exchange are in many cases out of the question. Heckscher (1930/1953 p. 214).

⁷ Definition fungible: “being something (such as money or a commodity) of such a nature that one part or quantity may be replaced by another equal part or quantity in paying a debt or settling an account.” Merriam-Webster dictionary.

His general reasoning follows the same logic as the modern microfoundation models. An equilibrium will occur such that the cost of the exchange system is minimized, in this case with indirect barter as the predominant form. The costs of direct barter caused by the lack of a “double coincidence of wants” in Jevons’s formulation, by restricting trading opportunities and thereby specialization in production are obvious. The cost of an infungible monetary system is the absence of the gains from monetary exchange through which all agents can satisfy their demand without the use of an intermediate good. Indirect trade alleviated the limits of direct exchange by broadening the scope of exchange, without realizing the full scope of monetary exchange.

Monetization in the 17th century: Heckscher (1936)

Heckscher’s (1936) main conclusion for the 17th century is that the exchange system monetized in the 17th century, but at a slow rate with barter remaining the dominant form:

The analysis is presented last in the chapter “The monetary system and payment habits”. The monetary system described in the first part serves as a backdrop for the analysis of the payment habits: “The monetary system that has now been introduced went hand in hand with the slow development of exchange in the direction of monetary exchange.” p.635.

The major change in the 17th century was the introduction of a copper standard in 1624 with full-bodied copper coins and plates. Their unwieldiness due to their low value per weight unit is well known,; 1 kilogram silver was on average equal to 94 kilogram copper in value. Payments in copper were therefore very costly, due to large transportation costs: “The consequence was a system which in its impracticality lacks counterparts”, (Heckscher, 1936, p. 603). It had one advantage though, the easy supply of small denomination useful for every-day personal transactions, (Heckscher, 1936, p. 617).

He hedged his conclusions by pointing out the difficulties in getting an accurate picture of the 17th century compared to the 16th century:

For this period, the public economy gives a less reliable picture of the general character of economic life and is perhaps directly misleading as an expression of the shift since the 16th century. p.638,

while maintaining that there was change:

All this indicates very unchanged conditions since the previous century, and here, as in almost all points, it must therefore be emphasized that the old was more important than the new. Nevertheless, *no major acuity is required to detect significant changes in the state of the economy.* (Heckscher, 1936, p. 639).

Heckscher (1936) begins by quoting contemporary evidence of the dominance of barter in Sweden compared to other countries:

A typical example among many of the contemporary view of the unusually strong survival of barter in Sweden, compared with other countries, is a statement by Axel Oxenstierna (1646): "When the Swedes come to Denmark, they get money, but with us only goods." Another statement, from 1619, gives the impression that the change of barter exchange was considered to have even increased; in the Crown decree concerning the bourgeoisie it was said that, for example: "Among other things which in the cities prevent their improvement, is the lack of money in the realm, in that all trade is based on goods and their and their exchange." Of more value than such general judgments, however, is *evidence for more concrete phenomena*, where subjective ideas have not been able to influence nearly as much. (Heckscher 1936, p. 635, my italics.)

Difficulties aside, he provides “evidence for more concrete” instances of barter exchange from different economic spheres: the iron industry, trade in the cities, trade in the country, trade between city and country, trade among the rich, the truck system [paying employees with food and board] in the iron sector, and tax and expenditure payments by the public sector.

The change he can document also refers to a change in the “mindset” of the public, which he described as “the eagerness to get money instead of good” (Heckscher 1936, p. 639.) with several citations.

Heckscher's (1936) main explanation of the slow monetization was the continuing low fungibility of money in line with his general conclusion in 1930.

One was thus obviously in a time of upheaval between exchange in kind and monetary exchange; conditions had partly changed, and the interests at this point cut across completely different from before. In public finances, Gustav Adolf and Axel Oxenstierna worked to extend monetary exchange, although this movement was soon transformed into its opposite; but in the field of business, nothing seems to have been done to expand the exchange of money. Such an endeavor should have been in the line of mercantilism, but in reality it did not accomplish anything essential to the realization of its ideals on this point in any country. At the same time, *the complex and unreliable nature of the monetary system probably contributed in all fields to make it more difficult in to move to a more widespread use of monetary exchange.* (Heckscher 1936, p. 641, my italics.)
p. 641.

Revisiting Heckscher with new data

Heckscher's prediction: "It is certainly - and probably always will remain - impossible to get any kind of numerical yardstick for this change [monetization]" was proved wrong by Edvinsson and Ögren (2014), who calculated the velocity of money (GDP/money supply) from 1620 as an indicator of monetization. The measure appears in figure 7.4 at the end of their survey of Swedish money supply 1620-2012 with new yearly data. Yearly nominal GDP data from 1620 is provided by Edvinsson (2014). A decrease in velocity, or equivalently an increase in the ratio of the money supply to GDP, indicates an increase in monetization.⁸ The velocity of money calculated by Edvinsson and Ögren is shown in Figure 3.⁹

⁸ Another determinant of velocity is the degree of "financial sophistication" measuring the availability of alternative assets to money, see Bordo and Jonung (1987). This factor is not relevant until the 19th century with the growth of commercial banking and bond and stock markets.

⁹ Heckscher (1930, pp. 132-134) used the large increase in real note balances held by the public during the classical gold standard 1873 -1914 , which he attributed to monetization. He noted that the increase in banking during the period decreased the demand for notes, strengthening his conclusion that the underlying force behind the increase in real note balances was monetization. His measure was not the income velocity of, lacking data on nominal GDP, though with same conclusion of rapid monetization 1873-1914 reached with velocity measures, see Bordo and Jonung (1987). There is no doubt that velocity is the kind of "yard stick" he had in mind, but thought was not possible to measure.

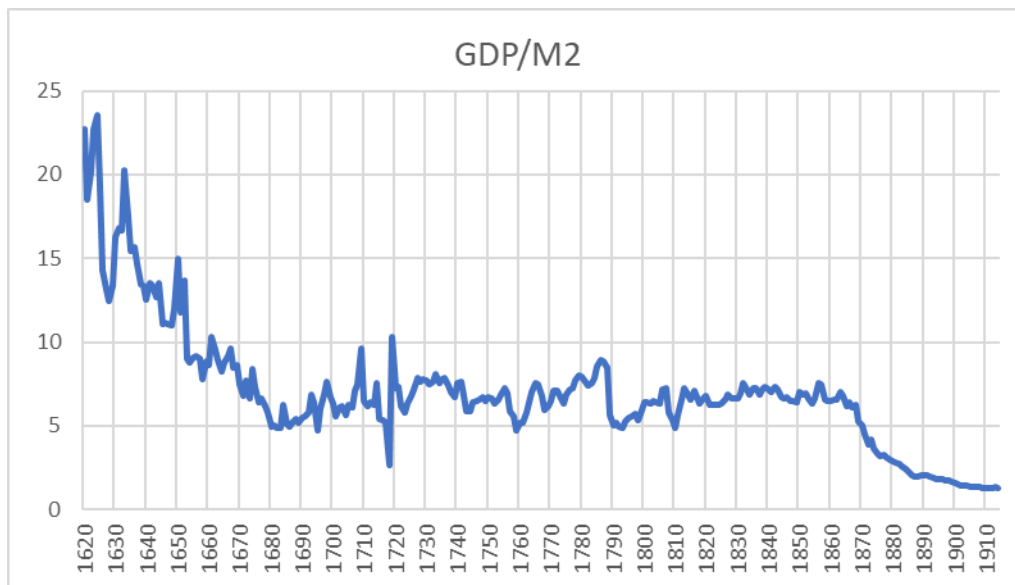


Figure 3. The velocity of money (GDP/M2) 1620-1914.

Source: Edvinsson and Ögren (2014, figure 7.4)

Figure 3 indicates a large decrease in monetization in the 17th century from 25 to 5, belying Heckscher's conclusion that monetization was slow and "qualitative rather than quantitative". Furthermore, the 17th century stands out as a period of monetization with an almost stationary level after 1700 to 1860. Heckscher's archival micro evidence from archives is thus contradicted by the quantitative macro evidence. Which evidence should we believe?

Edvinsson and Ögren (2014) attributes the monetization to the growth of trade in Stockholm. Heckscher (1936) did analyze in urbanization in the 16th century and concluded that while the authorities actively supported incorporation new cities with the trading rights which were exclusive to cities, the new cities contributed very little to commerce and trade, including the western port city Gothenburg founded in 1621, but noted the growing size and importance of Stockholm. He did not however discussed its possible effects on monetization.

One possibility for the discrepancy between Heckscher's claim of slow monetization and the quick monetization found by Edvinsson and Ögren is the difficulty of measuring the money supply in the 17th century due to the simultaneous circulation of copper and silver coins from 1624. There are two main difficulties. The first is that the copper and silver coins circulated with period with

floating exchange rates, reflecting the changes in the relative price of copper to silver, which differed from the official exchange rates. The second is the export and hoarding of copper coins, in periods when the copper coins were undervalued and the official rates were operative.

The method used by Edvinsson and Ögren (2014), based on Edvinsson (2012), takes some account of this. They use the perpetual inventory method applied to minting data. The method assumes an exponential decline in the circulation of a certain vintage of coins defined by its half-life, which they adjust for copper at the end of the period to take account of increased copper exports. They constructed an aggregate measure of the money supply weighing the different coins according to their market exchange rates.

Conclusion

Heckscher's pioneering investigations using archives to unravel the actual exchange mechanisms is to my knowledge unparalleled. I see two reasons for the lack of studies in Heckscher's spirit. First and foremost the difficulty in finding direct evidence, which Heckscher saw as a severe challenge to research in economic history in general due to the lack of direct evidence of institutions as their nature is seldom "put on paper". The second factor is the disconnect between theorists and empiricists. Heckscher's theoretical base in his tripartite division of exchange systems led him to find pertinent facts, in particular the importance of indirect barter as an intermediate step in the monetization process before fully fungible money appeared. Theory also led him to the insight that all exchange systems carry costs, which change over time. Thus he followed his own program for research in economic history, that is, using theory to find facts *and* explanations.

Heckscher's conclusion of slow monetization in the 17th century may be faulty, which he himself indicated by the lack of appropriate macro data. In the introduction to SEH in 1935 he described his goal as:

The selection from the partly overwhelming archival material has been determined by the fundamental viewpoint. What has primarily been sought after is material for which one can follow the development of the country in its entirety over longer periods, if possible quantitatively. (Heckscher 1935, p. 7.)

To what extent the monetization was slow or fast in the 17th century should be a challenge for future research. A further avenue could be to examine the determinants of monetization from the 16th to the 19th century.

References

Bordo, Michael D. and Lars Jonung, (1987), *The long-run behavior of the velocity of circulation*, Cambridge: Cambridge University Press.

Cipolla, Carlo M., (1956), *Money, prices, and civilization in the Mediterranean world. Fifth to Seventeenth Century*, Princeton: Princeton University Press.

Desan, Christine, (2014), *Making money. Coin, currency, and the coming of capitalism*, Oxford: Oxford University Press.

Edvinsson, Rodney (2014), 'The Gross Domestic Product of Sweden within present borders, 1620–2012', in *Historical Monetary and Financial Statistics for Sweden, Volume II: House Prices, Stock Returns, National Accounts, and the Riksbank Balance Sheet, 1620–2012* (eds. Rodney Edvinsson, Tor Jacobson and Daniel Waldenström) Sveriges Riksbank and Ekerlids.

Edvinsson, Rodney and Anders Ögren (2014), "Swedish money supply, 1620–2012", in *Historical Monetary and Financial Statistics for Sweden, Volume II: House Prices, Stock Returns, National Accounts, and the Riksbank Balance Sheet, 1620–2012* (eds. Rodney Edvinsson, Tor Jacobson and Daniel Waldenström) Sveriges Riksbank and Ekerlids.

Edvinsson, R. (2012), 'Early modern copper money: multiple currencies and trimetallism in Sweden 1624–1776', *European Review of Economic History*, Vol. 16, pp. 408–429.

Einzig, Paul, (1966), *Primitive money in its ethnological, historical, and economic aspects*. New York: Pergamon Press, 2nd edition.

Fregert, Klas, (2015), "Heckscher on the Slow Monetization of Sweden and His Incidental Refutation of Jevons and Menger", Working paper 2015:23, Department of Economics, Lund University.

Heckscher, Eli F., (1923), "Svensk natura- och penninghushållning i äldre tid belyst ur Gustav Vasas brev", *Ekonomisk Tidskrift* 25, 258-275

Heckscher, Eli F., (1929/1953), "A plea for theory in economic history", *Economic Journal*, supplement, 525-534. Reprinted in Lane and Riemersma (1953, 421-430).

Heckscher, Eli F., (1930/1953), "Natural and money economy, as illustrated from Swedish history from the sixteenth century", *Journal of Economic and Business History*, 1-29. Reprinted in Lane and Riemersma (1953, 206-228).

Heckscher, Eli F., (1935), *Sveriges ekonomiska historia sedan Gustav Vasa., Medeltidshushållnings organisering.* Stockholm: Albert Bonniers förlag.

Heckscher, Eli F., (1936), *Sveriges ekonomiska historia sedan Gustav Vasa. Hushållningen under internationell påverkan.* Stockholm: Albert Bonniers förlag.

Hicks, John, (1989), *A market theory of money*, Oxford: Oxford University Press.

Hildebrand, Bruno, (1864), "Naturalwirtschaft, Geldwirtschaft und Creditwirtschaft," *Jahrbücher für Nationalökonomie und Statistik.*

Jevons, William Stanley, (1875), *Money and the mechanism of exchange.* London: Appleton.

Lane, Frederic C. and Jelle C. Riemersma, eds. (1953), *Enterprise and secular change. Readings in economic history*, (1953), Homewood, Ill: Richard D. Irwin, Inc.

McCloskey, Donald, (1994), "Fogel and North: Statics and dynamics in historical economics", *Scandinavian Journal of Economics* 96, 161-166.

Melitz, Jacques, (1974), *Primitive and modern money*, Reading, MA: Addison-Wesley.

Menger, Carl, (1892), "On the origin of money", *Economic Journal* 2, 239-255.

Mitchell, Wesley C. (1944/1953), "The role of money in economic history", *Journal of Economic History* 4, supplement. Reprinted in Lane and Riemersma (1953, 199-205).

Montgomery, Arthur, (1953/2003), "Eli Heckscher som vetenskapsman", (Eli Heckscher as scientist), *Ekonomisk Tidskrift* 55, reprinted in Henriksson, Rolf and Mats Lundahl (eds.), (2003), *Janusansiktet Eli Heckscher. Nationalekonom och historiker*, Stockholm: Timbro.

Spufford, Peter, (1989), *Money and its Use in Medieval Europe*, Cambridge University Press.

Appendix: Translation of Heckscher (1936, pp. 635-641)

Heckscher, Eli F. (1936), *Sveriges Ekonomiska Historia, Hushållningen under internationell påverkan.*, bok 2, del 1, pp. 635-641. Stockholm: Albert Bonniers förlag.

Page 635

The monetary system that has now been introduced went hand in hand with the slow development of exchange in the direction of monetary exchange. It is certainly - and probably always will remain - impossible to get any kind of numerical yardstick for this change. A clearer idea of the nature of the change in general can probably only be gained through an extensive processing of especially court records and court documents, with material from different social classes and parts of the country. For this period, the public economy gives a less reliable picture of the general character of economic life and is perhaps directly misleading as an expression of the shift since the 16th century. The surveys of the tax system, especially in Älvsborg County, which H. Swenne has recently undertaken give a definite impression of a desire for increased payment of money by the farmers in comparison with an older time.¹⁰ This, of course, shows that the peasants had money to pay with, but their desire for a transformation of the natural taxes into money was largely due to the fact that both the Crown and the nobility's bailiffs demanded expensive and time-consuming transports over long distances, while on the other hand tax payment in money, the dependence on the bailiffs decreased and offered opportunities to have the benefits in kind replaced after a valuation that was below the *market* situation. If you look directly at the material that sheds light on actual transactions between individuals, there is no doubt that the nature of the exchange in the countryside still expressed predominantly payments in kind.

A typical example among many of the contemporary view of the unusually strong survival of barter in Sweden, compared with other countries, is a statement by Axel Oxenstierna (1646): "When the Swedes come to *Denmark*, they get money, but with us only goods." Another statement, from 1619, gives the impression that the change of barter exchange was considered to have even increased; in the Crown decree concerning the bourgeoisie it was said that, for example: "Among other things the cities prevent their improvement, is the lack of money in the realm, in that all trade is based on goods and their and their exchange." Of more value than such general judgments, however, is evidence for more concrete phenomena, where subjective ideas have not been able to influence nearly as much.

¹⁰ Swenne, Hakon (1993), *Svenska adelns ekonomiska privilegier 1612-1651: med särskild hänsyn till Älvsborgs län*. Göteborg: Diss.

p. 635/636

If you start with the conditions in Bergslagen (iron ore district), one should first mention the unusually striking expression of ancient monetary conditions, namely that iron was still used not only as a commodity in direct exchange, but even as a measure of value. In a detailed estate register after a miner in Englikbenning (Ängelsberg) in 1688, all receivables and liabilities are expressed in bar iron, to the extent that amounts in valleys have been converted into *skeppund* and *lispund* bar iron after 20 *daler* copper coins per *skeppund*; and the whole thing has since been summed up in this way. The character of forged Osmund steel as a general means of exchange was established almost at the same time (1687) in Nora bergslag, where this forging method stubbornly remained. The miner in the town then rejected a ban on osmund forging with the justification that flour, malt, all kinds of tissues, calfskin and cheese were mainly from Västergötland exchanged for osmund, "traded there as with ready money". The reference to Västergötland indicates trade by itinerant traders, and it is possible that this form of trade gave special support to the old direct exchange between iron and goods; for as early as the beginning of the eighteenth century (1712) it was mentioned that the merchants in the mines exchanged for themselves the miners' iron - indebted- for goods brought there. Conditions that had not changed in the slightest since Gustav Vasa's time - and which were probably several hundred years older - are also found in Bergslagen, e.g. when a priest (1636) bought oxen to exchange for iron against them, which he then sold to Norway - the same kind of indirect exchange in kind that has been discussed in detail in the previous book (above 61 ff.)

p. 636/637

The examples now mentioned from Bergslagen, however, refer to the most old-fashioned part of iron-ore industry, namely the mining industry. In the use of mills, of course, the conditions were not nearly as primitive; but it is important and remarkable that precisely the increasingly consistently designed and well-preserved mill finance system (*bruksförlaget*) in all stages at all stages largely meant an admittedly modernized but unmistakable exchange in kind. The merchants' lending to the mills received their most characteristic features by consisting of the deliveries of consumer goods against iron; as a result, interest calculation could generally be avoided, because the lender instead received payment through low iron prices and often high prices on the deliveries, as has been mentioned in its place. Even more pronounced was the exchange in kind for the mills' relationship to their own workers as well as to coal and timber suppliers. Letters both from 1642 and from 1700 explicitly gave the mills the right to "exchange" a varying number of goods, such as grain, salt, butter, cheese, meat, pork, fish and textiles for ore, pig iron, coal, wood, hay and straw; the nature of direct exchange was thus clearly *marked*. The mills' settlement books with workers, miners and farmers also show how insignificant amounts were paid in cash, while the rest consisted of goods of all kinds exchanged for benefits from the recipients. Along with the payments in kind preserved by the military through the military and civilian *indelningsverket*, this actually new organization of mill management was what has contributed most to the conservation of payments in kind in Sweden.

The equivalent of lending to miners and iron ore mills, which lay in the peasants' dependence on the city merchants - what in Finland was called the *majmiseriet* (above 570) - had the same character of payments in kind, and there is also information about payments in kind between city dwellers and farmers. Undoubtedly, the trade by travelling traders in the rural sector (*gårdfarihandeln*) also extended to payments in kind to the peasants as well as to the miners. The previously (above 81) mentioned "threshers" - i.e. day laborers who were employed at harvest time and who Gustav Vasa with obscure motivation gave a large part of the responsibility for "the dear time", because they received payment in grain and not in money - are still found (1636) to come in the fall to "earn grain", i.e. to get paid in kind a benefit that they apparently sold in the same way as a hundred years earlier.

In addition, the exchange in kind was far from limited to transactions with rural populations of various kinds; also the urban population within themselves apparently often acted in the same way. In Gothenburg, for example, (1646) payment of the salt tax in kind was permitted, and shortly afterwards (1654) a Dutch creditor took iron instead of money on an accepted consignment. The city itself donated (1646) 16 *skeppund* of bar iron to the resident Harald Appelboom for his activities in Gothenburg's interests.

Also credit in kind apparently remained common. Both the interest rates of 1666 and 1687 give an unchanged impression of the unusually harsh conditions of credit in kind (cf. above 68 f., 196 f.). There is still talk of such abuses as that repayment of double amount in such cases was required by creditors, and illustrative is a reference to cases where pre-payments in the form of grain, fish or salt were pretended to have constituted exchange.

p. 637/638

The exchange in kind also extended to circles at the top of society. Johan Oxenstierna (1657) e.g. extended a loan to the crown "mostly in meat". Jakob de la Gardie made his payment in the first Copper Company (1627) with 2,000 barrels of oats and 3,000 weights of gilded silver in the credit; and correspondingly he paid his share of Louis De Geer's naval equipment (1644) partly with iron. These cases are of particular interest for the reason that the delivered the goods could not have served the business to which they were handed over, that in other words there was no question of an in-kind supply of what the business needed. This characteristic feature of the pure exchange in kind, i.e. that the received service must be resold in order to fulfill its purpose, occurred in many different places. In particular with regard to the crown's service but also with regard to individuals, the payment was largely executed with metals, especially copper. The central government offices [*kollegierna*] were remunerated under Kristina's guardians, to the great difficulty of the assessors, with copper in kind, until De Geer took over the copper and at the same time contested their remuneration.

Foreign diplomats were often honored with copper; so it has been mentioned before (above 455) how Kristina had a whole small fortune brought in this form on board Whitelocke's ships, when he (1654) left the country. In general, at least during the early part of the 17th century, there were plenty of in-kind transactions with foreign countries as well, despite the presence of bills of exchange. Axel Oxenstierna paid

e.g. (1615) Sweden's then envoy to The Hague Jakob van Dijck for private book purchases through Abraham Cabeliau with bar iron and money; and five years later, his skipper from the Chancellor's Finnish Baron Kimito had to order beer instead of money in payment for goods in Lübeck. Some time later (1629) a transaction was planned with the French state, such that it would buy copper at a favorable price and in exchange supply salt, which was then unusually expensive in France. The same was the case with pure trading transactions; so e.g. In 1632, a galley was sent to Elbing with bar iron, to be exchanged for lead and fuse. When De Geer's winemakers had taken over his clothing factory the year before, they intended to similarly exchange wool for butter in Stralsund, although only to find the butter there cheaper than at home. In the Crown's settlements with individuals there were innumerable changes in kind: "*tommiss*" (coarse cloth for the needs of the army), grain, wine, salt, hemp, canvas, weapons, silk cloth, etc., etc. were paid for mainly with copper and iron, also in foreign locations.

p. 638/639

Of particular interest is the monetary system's own "infungibility" or in-kind character. The property of the various types of coins already mentioned property that they did not to represent an "abstract unit of value", not to be money in general and interchangeable with each other, is very characteristic and of great importance in various respects, as has already been shown. The cameral terminology's use of the word "*partzel*" (*persedel*, item) also about money is a linguistic expression of their preserved in-kind character. Although foreign currency apparently declined in importance during the century, it still played a far greater role than currently; so e.g. it so happened that Louis De Geer paid the court people with - Spanish reals.

All this indicates very unchanged conditions since the previous century, and here, as in almost all points, it must therefore be emphasized that the old was more important than the new. Nevertheless, no major acuity is required to detect significant changes in the state of the economy. Already what has been said before about the spread of the bill of exchange shows that foreign trade usually took place in the forms of monetary payments. Within the country, there is a strong tendency among merchants to keep current accounts for each other, so that they would both avoid the enormous clumsiness of payments in kind and the confusion that payments in money could hardly avoid. Despite all the weaknesses of the payment system, there was also a gap between the transactions of merchants, perhaps especially foreign-born merchants, during the 17th century and the primitive forms in which trade had taken place during the previous century. Although, as has been said, one is unable to find fixed points of reference for the quantitative shift between in-kind and monetary exchange, it may nevertheless offer some guidance to see the proportion between extensions in cash and in goods to the crown during the years 1665-70. Apart from interest and commissions, the amounts were adjusted as follows after two different calculations:

Cash	Goods	Goods
d. s. m.	d. s. m.	in percent
965 000	428 700	31.35
1 040 000	441 800	29.80

However, the change was qualitative rather than quantitative. Above all, it consisted in the fact that the payments of nature fell in the eye and felt like a compulsion, often even as a form of oppression. This had not been the case in Gustav Vasa's time, as was shown in detail in the previous book. The new constitution of the mind is easy to exemplify. The new mindset is easy to exemplify.

p. 639/640

A common expression of the new situation was the eagerness to get money instead of goods. In another context (above 578), Klas Fleming's statement (1638) has been mentioned that the krona should be willing to an interest rate of up to 20 percent, if it was allowed to pay in goods and not in money. On a later occasion (1661), a loan interest rate of 6 per cent was determined for the Crown's debts on trade receivables, otherwise up to 8 per cent, and accordingly Magnus Gabriel de la Gardie (1666) rejected an interest rate of 8 per cent for the Crown, because it concerned goods. When the Crown needed a loan at the same time, it sought to obtain this only in money but was rejected by the lender, who wanted to earn on the goods; and this was repeated two years later. A little later (1672), the nobility of Finland stated in their complaints that it had to wait a long time for payment in the Chamber of Deputies and still be content with only prescriptions, "[för dem vi för nöds skull nödgas och icke penningar utan varor taga måste# CHECK as a result of the merchants' price calculations, only a quarter of the amount would have remained.

This leads to the question of the situation that is usually called truck system, i.e. that the employer (or supplier) fed his people or his counterpart with payment in goods that he did not want to receive and at a price that included a real reduction in the promised payment. value. It is even surprising to find how common this phenomenon, judging by the sources, must have become during the 17th century, after having not to my knowledge played any significant role in Sweden before that. Above all, but far from only this applied to bergslagen.

In the case of Kopparberget, where the phenomenon seems to have been most common, the 1619 and 1620 privileges for the Swedish Trade Company included a ban on buying copper from the miners for "*hande goods*" - an expression whose meaning I however do not know - "or goods, but only and only for ready money ", so that "the miner must not make money ", with a lot of control regulations; therefore, the company was also forbidden to "lend goods to the miners on copper", without a ban on lending on copper to them in general. A negotiation with the Copper Miners in 1635 about the formation of the new Copper Company showed the same tendency; so e.g. said the national treasurer: "Ready money by the purchase at

26 *riksdaler* in cash; would be better than 32 in goods from the merchant, such as sour herring and nasty cloth." Axel Oxenstierna, who was still abroad at the time, also warned at the same time against "bargaining and exchange" with copper miners. The inappropriateness of the situation at Kopparberget was apparently generally known.

p. 640/641

In the same way, though perhaps not to the same degree, it seems to have been the case in other areas. One of the Geijers' two Swedish ancestors was accused in the 1630s of a malicious case of trucking in Ljusnarsberg; he was said to charge the miners iron pots, etc., as payment, instead of the copper notes that the miners had the right to demand and for which they could get money through the governor. Even in the area of iron ores, the lending (*förlag*) most favored area (in the legal Swedish sense of the word), the hammersmiths (1673) complained that they did not receive their payment in cash but in expensive goods; *Bergskollegium* resolved that the payment to one third would be made in cash and to two thirds in good goods according to practice abroad. Craftsmen under what in international terminology is called the lending system (*förlagssystem*) were also considered - in this case fully in line with foreign conditions - to suffer from not receiving cash payment but being forced to receive goods according to *markegången* [official price lists for the conversion of payments in kind to money] "as the owner also would eagerly gain something from the goods as well as from the work supplied". And finally, in a deliberation in the *Kammarkollegium*, 1636 on the tenants of the Crown, as a reason for the peasants' reluctance to work, it was stated that the former "do not give them [the peasants] money but (as the treasurer confessed) pay them with salt and other goods".

One was thus obviously in a time of upheaval between exchange in kind and monetary exchange; conditions had partly changed, and the interests at this point cut across completely different from before. In public finances, Gustav Adolf and Axel Oxenstierna worked to extend monetary exchange, although this movement was soon transformed into its opposite; but in the field of business, nothing seems to have been done to expand the exchange of money. Such an endeavor should have been in the line of mercantilism, but in reality it did not accomplish in any country anything essential to the realization of its ideals on this point. At the same time, the complex and unreliable nature of the monetary system probably contributed in all fields to make it more difficult in to move to a more widespread use of monetary exchange.