

Multiple paper monies in Sweden, 1789-1903: Substitution or complementarity?

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ABSTRACT

Complementarity of money mean that two or more kinds of monies together fulfil the demand of the users better than they would without the existence of the other(-s). In this paper we study complementarity between paper monies in Sweden. We address four questions: 1) What was used as money on a macro level (money supply) and on a micro level (monetary remittances)? 2) What was the relative value of different monies in parallel circulation? 3) Was there seasonal variations in use and/or value? 4) Was there geographical variations in use and value? What we find is that the complementarity helped to solve the problem of providing sufficient liquidity domestically over time and space and thus and to keep a stable value of the currency.

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Introduction

In relation to other European economies, Sweden experienced both an early and a widespread circulation of officially sanctioned paper monies of various origins. In 1661, the short-lived Stockholm Banco started to issue copper notes which initially came to circulate above par value. A few years later, the Parliament opened its own bank, Rikets Ständers Bank literally meaning the Parliament's Bank, now known as the Riksbank. It started to issue something similar to certified checks in 1701 which circulated as paper money side by side with specie money. In 1745 most specie was drawn out of circulation and Sweden went on a paper standard. This time the Riksbank started to issue notes with printed denominations. Since then the Swedish money supply has mainly consisted of paper money.

In 1789, the National Debt Office (Riksgäldskontoret) started to issue large quantities of small denomination interest bearing promissory notes which circulated simultaneously with the Riksbank notes for forty years. In 1831, *Enskilda* (private) banks started to issue notes which circulated side by side with the Riksbank notes for another seventy years. Besides these more officially sanctioned notes, the Swedish money supply also consisted of a mixture of notes issued by a variety of organisations and individuals. It is clear that during most of the period from 1789 to 1903, multiple paper monies circulated in Sweden.

Cases like the Swedish have not attracted much research with theoretical ambitions. Most monetary theorists assume the normality of homogenous monetary systems and the neutrality of money. There seems to be much in favour of one type of (national) money. In a multiple currency system, the main difficulty has been to achieve and maintain stable value relations between different monies in use.¹ Both instability as such and the attempts to stabilise relative values have increased monetary transaction costs.²

The Swedish monetary authorities attempted to handle the situation with unstable monetary value and supply in the same way as other monetary authorities in Europe at the time. The belief that specie was the only form of 'real' money remained unchallenged. With a limited amount of specie available, paper money was issued only to represent 'real' money at a fixed rate. Coins were what contemporary commentators at least until the end of the nineteenth

¹ Cf. for instance the recent contribution by T. J. Sargent and F. R. Velde, *The Big Problem of Small* (Princeton, 2002).

² The reduction of monetary transaction costs in the process of homogenising national currencies is discussed by E. Helleiner, *The Making of National Money: Territorial Currencies in Historical Perspective* (Ithaca and London, 2003).

century tended to see as 'real' money.³ Nevertheless, the monetary authorities repeatedly failed maintain this fixed rate and it had therefore repeatedly to re-establish the relationship between paper money and specie. Despite attempts to create a homogenous national money supply, multiple monies continued to exist in Sweden throughout the eighteenth and nineteenth century.

Apparently, systems with multiple monies are so persistent that they must have been of importance to contemporary actors. They are also prevalent in history. The Swedish case is only one of many historical situations in which monies of various descriptions and origins have circulated side by side. Still, in those cases when multiple monies are scholarly discussed, they are often perceived as anomalies which eventually were to disappear by an evolutionary process. Most of this research perceives different monies as competing substitutes. It is argued that a system with perfect competing monies would be efficient. However, since most historical cases of multiple monies are far from fulfilling the conditions of a free market, we are obliged to continue to look for some other logic behind the persistence and prevalence of multiple monies. Limited research is made to understand the reasons for or impact of the co-existence of different monies. Differences between monies are neglected and lost when all monies in circulation are reduced to substitutes for what is regarded as 'real' money.

Our aim is to discuss whether these cases of multiple monies are not better understood as cases of complementarity. Complementary monies would basically mean that an increase in the demand for one kind of money increases the demand for the other and that they together fulfil the demand of the users better than they would without the existence of the other. In short, by using the concept of complementarity we try to understand why there were multiple monies in circulation instead of only one kind of money.

In contrast to the other studies on complementary monies, we are concerned with complementarity between paper monies. Paper monies are of course in some respects different from specie money since paper monies have no intrinsic value and therefore often are seen as only representing 'real' money. However, in most cases in history specie coins were valued far above the metal value which indicates that the value of money, at least to

³ When the Riksbank notes in the smallest denomination, i.e. 1 SEK, was abolished in 1879 the official reason was that the existence of this kind of notes made the public confuse notes with coins, see A. Ögren, *Empirical Studies in Money, Credit and Banking: The Swedish Credit Market in Transition under the Silver and the Gold Standards, 1834–1913* (Stockholm, 2003); A. Ögren, 'Free or central banking? Liquidity and financial deepening in Sweden, 1834–1913' *Explorations in Economic History*, 43 (2006).

some extent, is determined by the demand for money or for its functions. In that case, the evaluation of paper money is made in the same way as of specie money.

We study two episodes with multiple paper monies in circulation in Sweden. During the first period, between 1789 and 1830, the National Debt Office issued notes in addition to the Riksbank notes. In this first case, there was a shift in the relative proportions of notes with a diminishing circulation of notes of higher quality and discounts in the value of them. During the second period, between 1831 and 1903, private note issuing banks complemented the Riksbank in providing liquidity. In this other case, multiple monies circulated side by side at stable relative values indicating that they served to adjust to the demands for liquidity without leading to changing internal value still without being substitutes.

In our empirical analysis, we address four questions: 1) We analyse what was used as money both on an aggregated level by looking at the money supply in absolute and relative terms and on a micro level by looking at the content of monetary remittances. 2) We study the relative value of different monies in parallel circulation. Our aim is to understand why some cases of multiple monies were successful in maintaining a fixed relative value whereas others were not. 3) We believe that the value of money is determined by the demand for money and since demand fluctuates in relation to economic activities, we try to establish seasonal variations in both use and value. 4) Kuroda has in his previous research identified complementarity between monies floating in different monetary circuits. We will therefore try to see whether money of different origin circulated in different ways.

We find that in the Swedish case one kind of money could not fulfil the basic monetary function of providing sufficient liquidity and at the same time keep a relatively stable monetary value in relation to foreign currencies. In the Swedish experience 'real' money was not only scarce; it was also unevenly dispersed between different parts of the country and unevenly demanded over the seasons in line with the needs of the agricultural economy. A system of complementary served to solve the dilemma of sufficient liquidity domestically and a stable currency value both internally and externally.

Data on Macro and on Micro Level

A reason for the lack of theoretical interest in multiple monies might be that historical sources seldom disclose exactly what kind of means of payment that were used in practice. Account books and letters between traders state the value of the payments expressed in a certain unit of

account while in a situation with multiple monies, we do not know what monies were used to remit that stated value.

In the case of Sweden, there is a source which makes it possible to go beyond the unit of account and to do a rather unique study of what money people actually used when making payments, namely open registered-letter post receipts. These receipts are the result of the widespread practice of using the postal service for making long distant payments and the fact that between 1794 and 1872 it was by ordinance prescribed that the remitter should make a list specifying the content of the money sent by open registered-letter post.⁴

From 1794, the general procedure for sending money by post was as follows: The sender brought an unsealed envelope to the local post master, a list specifying the notes to be included and the money. The post master counted the money and acknowledged the list provided by the sender by signing it. The letter was then sealed either by the sender or the post master. Finally, the sender got a receipt, stating the name and place of the addressee, the total amount enclosed and from 1850 the fees paid, which was attached to the note list.

In this paper we make use of the collection of open registered-letter receipts held by the Postmuseum (Postal Museum) in Stockholm.⁵ The collection has not previously been used systematically although it is the largest known collection. It contains more than one thousand documents of which 580 are receipts from remittance between individuals or individual firm representatives from the period before 1872 (table 1). In slightly more than two third these cases, the list specifying the notes the letter contained also remains. In total, almost 30 000 notes have been identified with a value of 780 000 *Riksdaler Riksmünt*. The median payment for letters with the content listed is 646 *Riksdaler Riksmünt* while the median for those without a list is 300 *Riksdalar Riksmünt*. The average is 1966 *Riksdaler Riksmünt* and 613 *Riksdaler Riksmünt* respectively. Unfortunately, only 19 receipts remain from 1789 to 1830 of which 9 have the containing notes listed. This collection can therefore be used for an overview from late eighteenth century until 1872 and a detailed analysis from the late 1840s to 1872.

⁴ N. Forssell, *Svenska Postverkets Historia*, Band II, (Stockholm 1936), pp. 238–45.

⁵ Postmuseum, Archives, Stockholm [henceforth Postmuseum]: Öppen assurans, II.260.b [henceforth II.260.b].

Table 1. Overview of the collection of open registered-letter receipts at *Postmuseum*

Amount	Number of open registered-letters receipts		
	with note list	without note list	Total
< 300	88	82	170
300–699	117	49	166
700–2999	114	41	155
> 2999	83	6	89
	402	178	580

Source: Postmuseum, Archives, Stockholm: Öppen assurans, II.260.b., 1789–1872.

The macro data is in general taken from the statistical part of the history of the Riksbank.⁶ Regarding the money supply and in particular the note issuance of the *Enskilda* banks in the nineteenth century, data recently revised by Ögren has been used.⁷

Riksbank and National Debt Office Notes, 1789 – 1830

The National Debt Office originated from the Parliament's Office (Riksens Ständers Kontor) founded in 1719. This authority had had the task of managing and repaying the substantial debts accrued from the wars run by the former king Karl XII. When the National Debt Office was formed in 1789, the debt of the Swedish State to foreign lenders was substantial.⁸ At this time, notes issued by the Riksbank were redeemable into a fixed amount of specie. But, this had only been the case since the adoption of the silver standard in 1776. The experience of this adoption was that the deflationary effects had been severely costly for the Swedish economy.

In 1788 the strong regent of Sweden king Gustav III, requested funds to finance the war on Russia from the bank of the parliament; the Riksbank. But the board of the Riksbank denied this and argued that the newly established silver standard was to be protected. The king questioned this refusal of the Riksbank and took a loan against the will of the parliament.⁹ This measure further consolidated the government's independence of the parliamentary control.

⁶ 'Statistiska tabeller 1668–1924', in *Sveriges Riksbank 1668–1918–1924. Bankens tillkomst och verksamhet*. Del V: Bilagor (Stockholm, 1931).

⁷ Ögren, *Money, Credit and Banking*, Appendix – Numerical Data.

⁸ G. Ahlström, *Studier i svensk ekonomisk politik och prisutveckling 1776–1802* (Lund, 1974), pp. 93–4; B. Carlsson, 'Riksgäldsfullmäktige 1789–1989', in E. Dahmén (ed.) *Upplåning och utveckling. Riksgäldskontoret 1789–1989* (Stockholm, 1989), p. 35

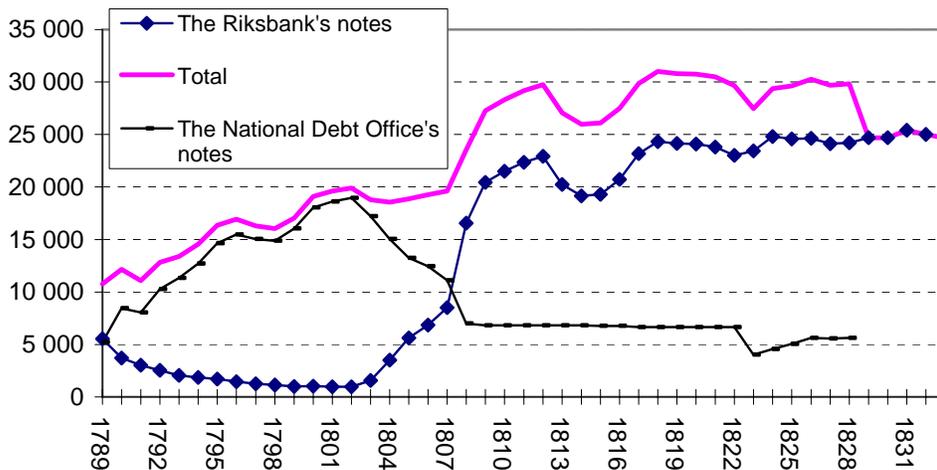
⁹ E. F. Heckscher, 'Riksgälds en unik fas i det svenska penningväsendets historia' *Ekonomisk tidskrift* 51 (1949), pp. 235, 246.

What kind of money was used?

As a compromise with the parliament the National Debt Office was given the task of raising further capital. Unlike the Riksbank, the board of this Office was influenced by the government, as the king's representative was appointed chairman. The National Debt Office was given the right to issue interest bearing promissory notes. According to the parliamentary regulation, the Office could issue notes to an amount of maximum 600 000 *Riksdaler Specie* which might be compared to the Riksbank which circulated approximately 5.5 million *Riksdaler Specie* in 1789. The National Debt Office had exceeded this 'maximum' amount within one month.¹⁰

As seen in figure 1 below, the massive issuance of notes conducted by the National Debt Office relative to the Riksbank, made the main part of the money supply consist of National Debt Office notes. Riksbank notes were officially legal tender. National Debt Office notes were in practice legal tender being accepted for all payments, including taxes, with the notable exception of not being possible to use for payments and deposits in the Riksbank. The Riksbank consistently refused to accept any connection to the notes issued by the Office, referring to its responsibility for the fixed exchange rate. No such responsibility limited the issuing capacities of the National Debt Office.¹¹

Figure 1. Note-circulation 1789–1833. 1000's *Riksdaler Specie*.



Source: Ahlström, *Politik och prisutveckling*, p. 24, 'Statistiska tabeller 1668–1924'

Throughout the period, the Riksbank maintained the specie standard. The first credit notes issued by the National Debt Office were interest bearing. Since the Office issued notes to such

¹⁰ Heckscher, 'Riksgälds', pp. 236, 245; 'Statistiska tabeller 1668–1924', p. 44.

an amount and these were accepted as means of payments by the public, the interest rate bearing feature of these notes was dropped in 1791. Until the settlement between the Riksbank and the National Debt Office in 1803, the notes issued by the two monetary authorities were indirectly valued at par since they were both denominated in *Riksdaler*.

In 1791 the promissory notes issued by the National Debt Office were no longer interest bearing. And to pay off earlier loans the Office maintained its note issuance, which continued until an agreement was settled with the Riksbank in 1803. It was then decided that the Riksbank should take over the responsibility for the notes in circulation that had been issued by the National Debt Office. In 1803 National Debt Office notes at a nominal value of no less than 19 million *Riksdaler Specie* was in circulation.¹²

Despite the limited number of note-lists remaining (table 2), it is possible to make some reflections based on the postal remittances. In 1790, the unit of account is only *Riksdaler*. The previous reference to '*Specie*' had disappeared. The first receipt with a proper note list is from August 1791. The letter remits fifty *Riksdaler* in three National Debt Office notes, one thirty *Riksdaler* note, one fifteen *Riksdaler* and one five *Riksdaler*.¹³ In the other two remaining letters from the early 1790s, sent from the same household to the same receiver, includes also only National Debt Office notes. Whatever notes that previously had been used; they were replaced by the National Debt Office notes in the early 1790s.

Table 2. Prevalence of types of money in open registered-letter post 1789-1830

Kind of money	No of letters in which they appear	First appearance	Last appearance
Nation Debt Office	5	1791	1828
Riksbank	3	1824	1830
Banco Transport (certified checks)	3	1824	1824

Source: Postmuseum: II.260.b.; 1789-1830.

While these receipts confirm the dominance of National Debt Office notes in circulation, it might question one advocated explanation for the popularity of the National Debt Office's notes among the public, namely that the small denominations of the National Debt Office

¹¹ See Heckscher, 'Riksgälds'.

¹² G. Hallendorf, 'Bankens öden från mössväldet till den andra realisationen, 1766–1803', in *Sveriges Riksbank 1668–1918–1924. Bankens tillkomst och verksamhet*. Del III. (Stockholm, 1931), pp. 209, 221–35, 290; Heckscher, 'Riksgälds', p. 254

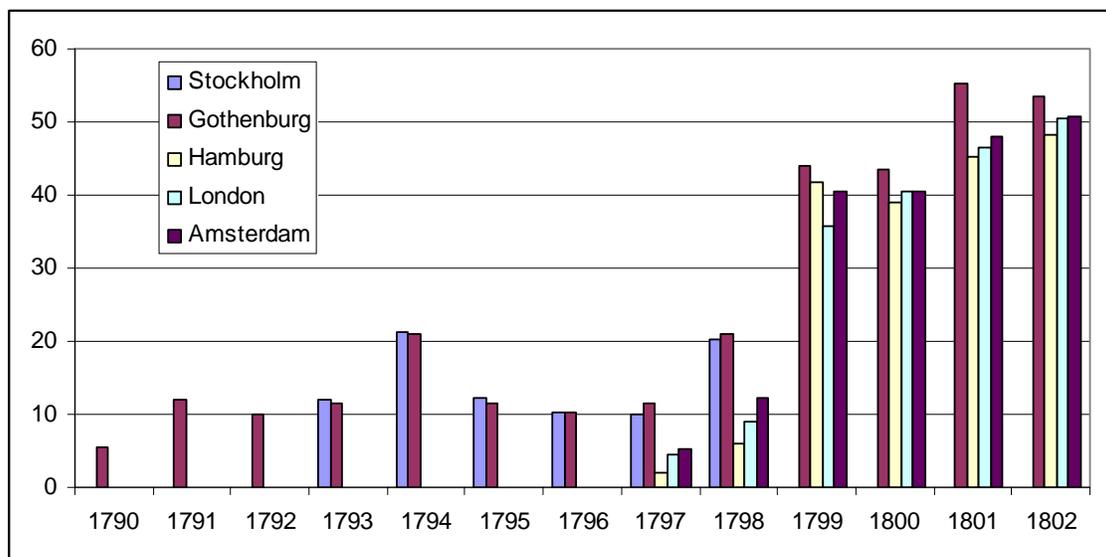
¹³ Postmuseum: II.260.b; Eksjö (1791), Ståhlhammar to von Krebs, Linköping.

notes were preferred to the larger Riksbank notes.¹⁴ For postal remittances, large denominations were preferred since that reduced the postage and in these few cases the notes were not particularly small.

Relative value

Whatever the reason was for the practical diminishing of Riksbank notes in circulation, this development resulted in several important changes in the monetary situation in Sweden. Quickly a market where these notes could be exchanged was established. This market grew in importance and made its mark also on capital markets outside of Sweden. It is clear that the market did not value the Riksbank and National Debt Office notes at par (figure 2). On the contrary, there was almost immediately a divergence in value in the market between Riksbank and National Debt Office notes. It seems as Riksbank notes obeyed the monetary adverse selection mechanism labeled Gresham’s law, although this law originally concerns only metallic coins. As the relative value changed in favor of the Riksbank notes, the public would hold on to these notes and not circulate them.

Figure 2. Ratio between the Riksdaler Banco and the Riksdaler Riksgälds on different markets, 1790–1802. In per cent.



Source: S. Mårtenson, *Agiot under kreditsedelsepoken 1789–1802* (Göteborg, 1958), ‘Statistiska tabeller 1668–1924’.

As the value diverged, two ‘new’ currencies were invented. The former *Riksdaler Specie* was divided into *Riksdaler Banco* issued by the Riksbank and the *Riksdaler Riksgälds* issued

¹⁴ See K. Fregert and L. Jonung, ‘Inflation and switches between specie and paper standard in Sweden 1668 –

by the National Debt Office. Both these two currencies were in practice issued by the state and circulated simultaneously. As the latter circulated to a higher extent, prices quickly became quoted in the currency of the National Debt Office.¹⁵ Consequently, the new currency *Riksdaler Riksgälds* within short became the unit of account as a response to the higher supply of this currency and the changing relative value of the two currencies in the market.

Other observations: seasonality and geographical circuits

At present, we do not know much more about the seasonal aspects than that the issuance of the National Debt Office notes was made in lumps and that the premium on Riksbank notes was not stable throughout the year.¹⁶ This latter fluctuation might be explained by drastic shifts in the supply of National Debt Office notes or by fluctuating demand for notes narrowing the gap between the two.

When it comes to the circuits of Riksbank and National Debt Office notes, we know even less. The National Debt Office issued its notes in Stockholm and they were then dispersed throughout the country. The National Debt Office did not redeem its notes, but they were accepted for tax payment which was done at county level. This might give an explanation for the variation in the premium on Riksbank notes. In the spring, when taxes were to be paid, there might not have been any reason to accept a below par value for the National Debt Office notes.

This episode serves to give some insights in how a system of parallel currencies may work through a market mechanism. But it also shows how institutions based on a rigid idea of what constitutes money may work in contradiction with such a system. The situation with two independent national currencies was not accepted and as a consequence a restored monetary unity was on top of the political agenda at least from 1796. However, voices from groups whose income was not dependent on taxes or rents promoted the idea of maintaining the paper standard. In 1800 a detailed plan was agreed upon in the parliament. But external forces delayed the Riksbank's possibility to take over the liabilities of the National Debt Office, and thus these grew from 15 million to 19 million *Riksdaler Banco*.¹⁷ When the Riksbank took over responsibility for the National Debt Office notes in circulation in 1803, the exchange rate

1931: A public finance interpretation', *Scottish Journal of political economy*, 43 (1996).

¹⁵ See Heckscher, 'Riksgälds'; Fregert and Jonung, 'Inflation and switches', p. 458.

¹⁶ See A. Ögren, 'Monetary Theory and Practice: Parallel currencies in Sweden, 1789–1833' unpublished paper presented at the H2S EconomiX seminar at École normale supérieure (ENS) – Cachan, (22 March 2007); 'Statistiska tabeller 1668–1924'.

¹⁷ Hallendorf, 'Bankens öden'; Heckscher, 'Riksgälds', p. 254

was fixed at 1:1.5 in favor of the Riksbank. The division between these two currencies was visible until the monetary reform of 1855. Notes issued by the Riksbank, as well as the private banks were denominated in both currencies, but the denomination was regularly 'even' in *Riksdaler Riksgälds*.¹⁸

What the experience showed is that, while on the silver standard, Riksbank notes alone were insufficient to meet the economy's demand for domestic liquidity. The National Debt Office notes became a complement to the Riksbank notes. An exchange rate market quickly emerged to deal with the fact that the National Debt Office were issued at par value with the Riksbank notes without any binding connection to those. Consequently, the two currencies circulated side by side while their relative value fluctuated.

But the rigidity of the two authorities led to a competitive situation that turned the complementarity of the paper monies in to a process of substitution. The Riksbank was rigid in the way it preserved the specie standard and its denial to have anything with the National Debt Office notes to do. The National Debt Office was rigid in its refusal to accept the Riksbank notes as of higher quality and disregarding the effects of its massive note issuance. Due to these rigid views, monetary order could only be restored by the abolishment the independence of the National Debt Office notes.

Riksbank and Enskilda Bank Notes, 1831 – 1903

In 1824 the Parliament decided that it should be possible to establish banks. These banks should as all business run under the principle of solidarity and in order to fund the business the banks should have the right to issue credit notes. After the principle decision to readopt the silver standard had been taken in 1830 the first bank applied for a charter in 1831. Due to institutional constraints on banking establishment the number of banks first grew very slowly. In 1846 the first law that standardised the *Enskilda* banks charters came.¹⁹ The number of *Enskilda* banks continued to increase slowly to eight in 1848 and to twelve in 1856.

What kind of money was used?

The content of these letters clearly shows that there existed paper money of different origin circulating at the same time in Sweden. There are in some cases notes issued by private firms and private individuals, domestic bills of exchange, coins, stamps, and Danish and Norwegian

¹⁸ See Ögren, *Money, Credit and Banking*, Chapter 1. See also table 5 below.

¹⁹ Ögren, *Money, Credit and Banking*, Chapter 2; Ögren, 'Free or central banking?'

notes (before the formation of the Scandinavian currency union). However, in the letters we predominantly find official Riksbank notes and notes issued by private *Enskilda* banks. This is fully in accordance with expectations.

Table 3. Prevalence of types of money in open registered-letter post 1831-1872

Kind of note	No of letters in which they appear	First appearance	Last appearance
Riksbank	240	1837	1872
<i>Enskilda</i> banks	337	1844	1872
IOUs to be drawn on the Riksbank by firms or banks	42	1844	1872
IOUs to be drawn on private individuals	6	1848	1863
Specie coins	9	1854	1864
Stamps	48	1856	1871
Bills of Exchange	4	1859	1871
Foreign notes	3	1864	1868

Source: Postmuseum: II.260.b.; 1831-1872.

The Riksbank notes and *Enskilda* bank notes were definitely not perfect substitutes. Riksbank notes could, in contrast to *Enskilda* bank notes, be transferred abroad and used for tax payments. However, the *Enskilda* banks started to pay tax collectors for exchanging the *Enskilda* bank notes into legal tender when tax payments were done.²⁰ Furthermore, throughout the period the Riksbank had the right to issue notes in smaller denominations than the *Enskilda* banks. But the amount of notes in the smallest denomination available for the *Enskilda* banks was quite substantial. In 1834, about 55 per cent of the Riksbank notes in circulation were in small denominations.²¹ From then on, the share of large notes increased, the share of middle range notes remained low and that of small notes stagnated.

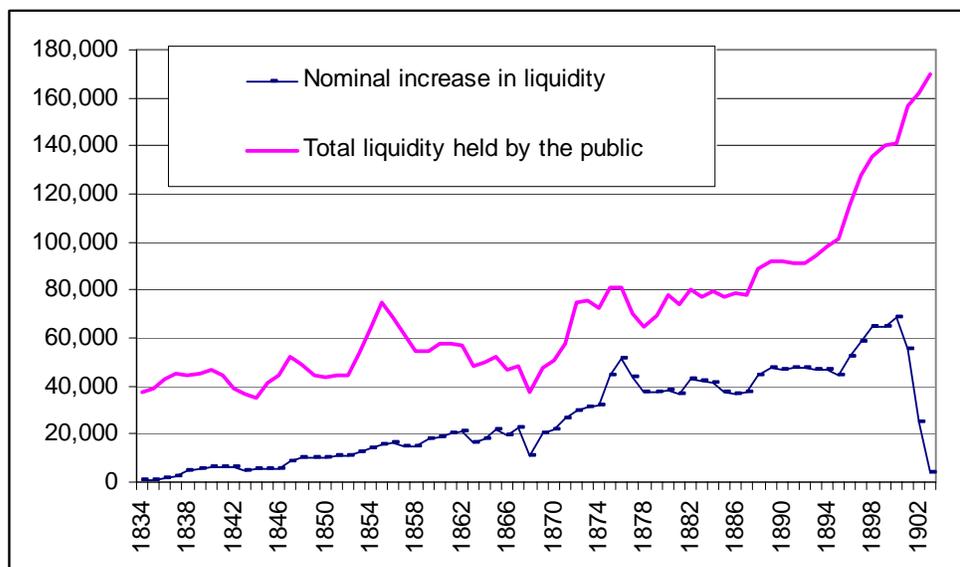
Throughout the period the *Enskilda* banks would operate with reserves consisting of Riksbank notes, thus withdrawing Riksbank notes from circulation. Since the *Enskilda* bank notes came to replace other forms of money that are more difficult to find data on we can not know exactly to what extent the *Enskilda* bank notes served to increase liquidity. We have defined liquidity as the amount of Riksbank notes not being held as reserves in the banking system plus the amount of *Enskilda* bank notes. The increase in liquidity by the *Enskilda*

²⁰ Ögren, *Money, Credit and Banking*, Chapter 2; Ögren, 'Free or central banking?'

²¹ That is up to 4 ½ riksdaler riksgäld. T. Lindgren, *Riksbankens sedelhistoria 1668–1968* (Stockholm, 1968), p. 199.

banks has been calculated as *Enskilda* bank notes in circulation minus Riksbank notes held as banking reserves.

Figure 3. Nominal increase in liquidity and total liquidity, 1834–1903.



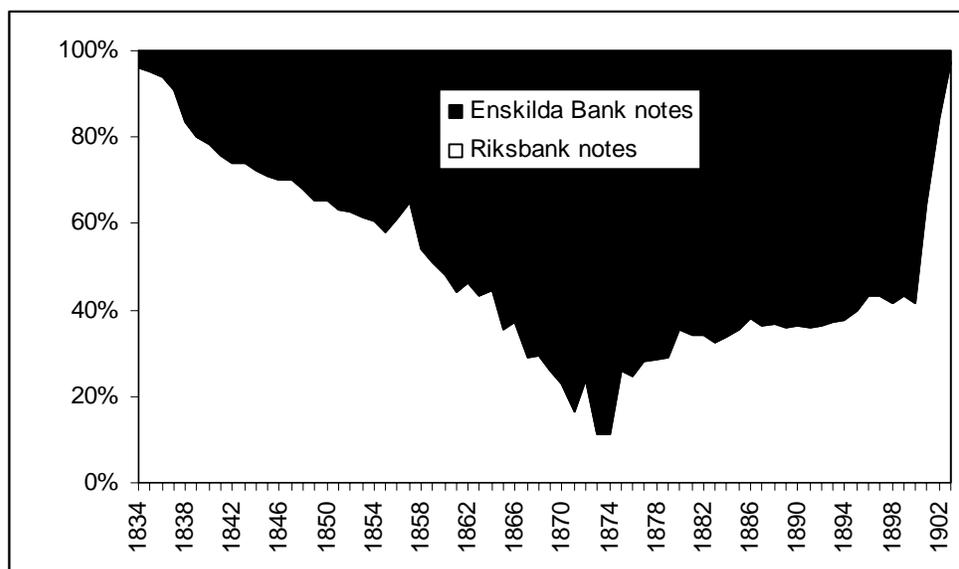
Source: Ögren, *Money, Credit and Banking*.

Remark: Liquidity is defined as Riksbank and *Enskilda* bank notes being held by the public

The *Enskilda* banks may have been few in numbers but their notes quickly helped release the constraint on liquidity that the silver standard meant. But the *Enskilda* bank notes did not only increase liquidity, they replaced less trustworthy money in circulation such as IOUs, promissory notes and/or authorized assignments. They also as a matter of fact decreased the number of varieties of money in circulation since the laws more and more came to standardize the note issuance as well as the basis of operations of the *Enskilda* banks. The practice of using private IOUs in circulation might have come more or less to an end in the late 1840s when the public suffered an economic loss following a trade crisis when several merchants known to have issued private notes went bankrupted.

The composition of the money in circulation was altered radically. Already by the late 1850s more *Enskilda* bank notes were circulating than Riksbank notes. At first this was due to the *Enskilda* banks use of Riksbank notes as reserves which kept them from circulating. This was particularly true during the early and middle 1870s when most of the notes issued by the Riksbank were held by the *Enskilda* banks.

Figure 4. Share of Enskilda and Riksbank notes in circulation in percentage, 1834–1903



Source: Ögren, *Money, Credit and Banking*.

If we compare this aggregated stock of Riksbank and *Enskilda* bank notes with the proportion between Riksbank notes and *Enskilda* bank notes changed between 1850 and 1875 in the postal remittances. In table 4, it is shown that the proportion of Riksbank notes used in circulation in our sample is below the share of Riksbank notes of total money supply. This indicates that there was a tendency to hold Riksbanks notes if possible. On the other hand, since a not negligible share of the Riksbank notes were in small denominations and these were not used frequently for postal remittances (table 5) the use of Riksbank notes was perhaps proportionate after all.

Table 4. Proportion of Riksbank notes and *Enskilda* bank notes in open registered-letter post, 1848–1872

5-years period	Totalt (Riksdaler Riksgälds)	Riksbanken	<i>Enskilda</i> banker	Miscellaneous	Total
1848–1852	34063	66%	31%	4%	100%
1853–1857	95560	28%	65%	7%	100%
1858–1862	360522	18%	74%	8%	100%
1863–1867	250641	11%	78%	11%	100%
1868–1872	40614	10%	72%	18%	100%
	781501				

Source: Postmuseum: II.260.b.; 1848–1872.

Table 5. Frequency in the use of notes of different denominations (per cent of notes), 1831–1858.

Rikdaler Banco	Riksdaler Riksgälds	1831-1858 (n=3909)	Riksbank (n=635)	<i>Enskilda</i> banks (n=3195)
0:32	1.00	1%	4%	0%
2:00	3.00	2%	12%	0%
3:16	5.00	14%	1%	16%
5:00	7.50	5%	0%	6%
6:32	10.00	29%	11%	34%
10:00	15.00	7%	28%	3%
16:32	25.00	1%	8%	0%
33:16	50.00	31%	12%	35%
50:00	75.00	2%	0%	2%
66:32	100.00	2%	0%	3%
100:00	150.00	3%	16%	0%
500:00	750.00	1%	6%	0%
Misc.	Misc.	2%	2%	1%
		100%	100%	100%

Source: Postmuseum: II.260.b.; 1831–1858.

Annual bank data indicates that Riksbank notes were actually drawn out of circulation. But we know that this to a large extent was to fill reserves of the *Enskilda* banks. More importantly, the analysis of the remittances indicates that the Riksbank notes were used in circulation to a higher degree than expected. That would indicate that there was no attempt by the business people to withhold Riksbank notes from circulation despite their larger possibilities for transactions (including abroad and for taxes). Whether this was forced on the merchants by shortages of notes in general or if it was because they did not care what note to use is hard to tell. It is probably the former but if not, that does not affect the general argument in this paper.

Relative value

The content of the remittance represented an amount that was stated on the official form that was assured by the postal service and it was this amount that was later acknowledged in the business correspondence. Still, the amount was the sum of the valuation of the various notes the letter contained.

It is thus important to make the distinction between the expressed amount and what kinds of money that was used in the remittance as payments. It is also important to compare the official amount stated in the remittance with the nominal amount of the different kinds of money enclosed in the remittance. This provides information whether certain kinds of notes

were valued with a premium or a discount in relation to their nominal value (and thus other kinds of money).

As far as it is possible to determine, each note contributed to the total amount of the remittance with its nominal value. There are many examples of letters with a wide variety of notes with their face value aggregated to a total sum. Actually, there is no indication of any discriminatory treatment of any kind of notes in any of all the letters compiled. For instance, in 1863 Halén sent 1301 rdr rmt 48 öre from Härnösand to Bergström in Umeå. The letter contained in total 108 notes and some stamps, all denominated in *Riksdaler Riksmynt*. There were two Riksbank notes, one of 100 *Riksdaler* and one of 1 *Riksdaler*, one Filialbank assignation of 100 *Riksdaler*, eight Stockholm Enskilda bank notes of 10 *Riksdaler* each and then a mixture of 5, 10, 50 and 100 *Riksdaler* notes issued by Mälareprovincernas Enskild bank which had a branch office in Härnösand at the time. This is only one example that clearly shows that the exact amount was important, not least since the stamps were added to achieve the exact amount.²²

This example proves that Riksbank notes and *Enskilda* bank notes circulated side by side in payments fixed at par value. It also shows that assignations issued by the *Filialbanks* and drawn on the Riksbank were valued at par with other forms of notes. The *Filialbanks* were private banks without the right to issue notes that operated between 1854 and 1872 and funded their business with equity capital and credit from the Riksbank.²³ In addition stamps would be used as a kind of token coins to cover for the smallest denominations. In one case, we have found an instruction to the postmaster to exchange small silver coins for stamps to be included in the letter.

One *Enskilda* bank failed in 1878 due to embezzlement with the note issuance. Not even this episode led to discounts of the banks notes. Instead the notes were refused as means of payments until another bank guaranteed the liabilities of this bank. Immediately after the news of its unjust business was out other actors, not least the Riksbank, refused the notes of the bank. We do not know, however, how soon the news found merchants and other holders of the bank's notes.²⁴

²² Postmuseum: II.260.b; Härnösand (1863), Halén to Bergström, Umeå. The amount listed differed from that specified on the receipt without any obvious reason in only two instances. Postmuseum, II.260.b.; Härnösand (1863), Halén to Cederlund, Stockholm and Trelleborg (1864), Persson to Linderholm, Karlshamn.

²³ See Ögren, *Money, Credit and Banking*, Chapter 2

²⁴ The bank was Wadstena Enskilda bank. It was taken over by a local competitor, Östergötlands Enskilda bank. B. Segrell, *Vadstena enskilda bank: 1857–1887* (Vadstena, 1993).

Seasonal distribution

The notes issued by the *Enskilda* banks also followed a seasonal pattern. This pattern rhymed well with the seasonal demand for liquidity of the agricultural cycle in Sweden.²⁵ A large form of lending, which was how the *Enskilda* bank would issue their notes, was in the form of credit granted or overdrafts. This means that the borrower could utilize the funds (or the credit) of the bank when necessary. Such an arrangement served well to smooth the changing demand for liquidity by merchants, large-scale farmers and manufacturers. Moreover, the *Enskilda* banks normally did not utilize their legal right to issue notes to the fullest extent why they had room for flexible note issuance.²⁶

There is nothing in the registered-letter that discloses the reason for sending money. But we know from previous studies on the business correspondence of some Swedish iron-masters and grain traders in the nineteenth century that remittances seldom were directly related to specific transactions of goods or services. They either forwarded money to agents purchasing grain directly from farmers or remitted money more or less regular to settle the accounts with trading partners. Clear is also that the business men tried to avoid making payments in the busy part of the seasons and waited for numerous transactions to level out the claims before the balance was eventually settled by a remittance.²⁷ We might therefore expect that the money sent by registered-letter post was for settling accumulated debts and not directly for making payments.

The seasonal distribution of the remittances analysed fit with the expected pattern. There are two peaks a year, in February to April and in October and November (Table 6). Therefore, we assume that the data is somewhat representative and that it is possible to make a few observations with theoretical implications. The difference between the peak and the trough is about 4.5 times. Since the number of remittances only increased by 50 per cent, the size of the remittances increases 3 times in the peak months. This indicates the flexibility that the demand for money required.

²⁵ Ögren, 'Free or central banking?'; A. Ögren. 'The Force of Private Note Issuance: Note Issuing Commercial Banks in the Economic and Financial Development of Nineteenth Century Sweden, unpublished paper presented at the European Business History Association Conference in Geneva September 13 – 15 and EHHF Economic History seminar, Stockholm School of Economics, 27 Feb. (2007)

²⁶ Ögren, *Money, Credit and Banking*.

²⁷ T. Engdahl, 'Making better money. Merchant demand for regional banking, 1830–1870', WP, Department of Economic History, Uppsala University (forthcoming).

Table 6. Monthly variation in the use of bank notes in postal remittances, 1830–1872.

Month	Number of receipts	Value of receipts Riksdaler Riksgäld	Distribution of total value Per cent	Average remittance value Riksdaler Riksgäld	Distribution of Riksbank notes Per cent	Distribution of <i>Enskilda</i> Bank Notes Per cent	Riksbank notes, proportion of all notes Per cent
Jan.	35	68013	7%	1973	21%	5%	52%
Feb.	51	106620	12%	2092	12%	12%	19%
Mar.	58	129130	14%	2242	9%	17%	12%
Apr.	59	121555	14%	2069	16%	14%	22%
May	47	53329	6%	1137	5%	6%	15%
June	51	47725	5%	942	6%	5%	24%
July	44	33872	4%	776	2%	3%	13%
Aug.	40	27585	3%	691	2%	2%	15%
Sept.	39	56516	6%	1451	2%	7%	7%
Oct.	65	100550	11%	1549	14%	12%	22%
Nov.	42	95727	11%	2281	9%	11%	15%
Dec.	49	55368	6%	1133	3%	6%	10%
	580	895990	100%	1551	100%	100%	

Source: Postmuseum: II.260.b.; 1830–1872

In table 6, it is shown that the proportions between the use of Riksbank notes and *Enskilda* bank notes were rather stable between the months with a few the exceptions. The large share of Riksbank notes in January is explained by one outlier, while the low share in March might be explained by the fact that Riksbank notes were used for tax payments then.

Circuits and geographical patterns

It is difficult to find any regional patterns in the material but a few things are clear. Remittances sent from Stockholm contained mainly Riksbank notes and only a very limited number of *Enskilda* bank notes. This might further contribute to the interpretation of table 4, that the sample shows a high proportion of *Enskilda* bank notes, since the remaining registered letter receipts show a clear bias in favour of middle-sized trading centres.

This fits with another general observation. It seems as the kind of private notes sent from one location depends on which banks that had a branch in that location. In a few cases, where the sender has listed the serial numbers of the notes, it is shown that the letter contains up to seven consecutive notes from the local bank.²⁸ This indicates that the local branch supplied the remitter with cash in order to allow him to send money to another location. Almost all

²⁸ See for instance Postmuseum: II.260.b; Västerås (1848), Almström to Glosemeyer, Stockholm; Härnösand (1859), Halén to Asp, Hjo.

major note-issuing banks were located in regional trading centres outside Stockholm and Gothenburg. It seems that in these two main cities in Sweden there was an ample supply of Riksbank notes.

There does not seem to be any tendency as to where the money was sent. All kind of private notes were sent all over the country which is shown by two receipts from local branches of the Kalmar Enskilda Bank. The branches send money to the limited liability commercial bank Skandinaviska Kredit Aktiebolaget in Stockholm which had become the centre for a national clearing system for *Enskilda* bank notes. The letters contain about 350 and 150 notes respectively from 20 and 13 different banks from Westerbotten and Sundsvall in the north to Skånes Enskilda Bank in the South.²⁹

Conclusion – Theoretical interpretations

This section initiates a discussion on the theoretical implications of the Swedish case for our understanding of complementary relationships among multiple monies. Sweden re-adopted the silver standard both in 1776 and in 1834. Despite this measure, the means of payment in circulation did not become homogeneous with respect to origin. On the contrary, the number of co-circulating notes expanded shortly after the re-adoption in both cases. However the experiences in these two cases differ.

The Swedish monetary system had different kinds of means of payments with different qualities. We would in accordance with Mundell's version of Gresham's Law expect either that these were treated at different rates, probably with fluctuating values. Or, if they were traded at par, we would expect that the notes of high quality, the Riksbank notes, were drawn out of circulation. While the findings of the late eighteenth century partly support this prediction, the findings of the late nineteenth century do not.

In the late eighteenth century, only a fraction of the notes redeemable in silver remained in circulation and there existed a premium on these notes in the market although for several years smaller than expected. In the mid-nineteenth century, although some notes redeemable in silver were withdrawn from circulation by the private banks, a substantial amount of notes remained in circulation and there is no evidence of a premium on these notes. It seems as the key to maintaining the stability in monetary value and the balance between different monies

²⁹ Postmuseum: II.260.b; Borgholm (1874) and Mönsterås (1871): Kalmar Enskild Bank to Skandinaviska Kredit Aktiebolaget, Stockholm. These two documents have not been included in the database otherwise used in this paper.

during these two periods was whether a complementary relationship between varieties of paper money in circulation was achieved.

When we try to understand why not one homogenous national currency appeared in any of these two instances, the evidence suggests that the attempt to stabilise the currency by fixing the foreign exchange rate of official money through the silver standard limited the supply of money for the domestic market at a level below demand. It appears that there was a shortage of means of clearing of debts. The Swedish economy was to a large extent based on bilateral credit relations maintained by book keeping while all kind of cash payments seems to have been kept at a minimum. The problem was how to clear debts with a limited amount of official money supply and without a national banking system allowing a more efficient clearing.

We suggest that the cause for coexistence of multiple monies is that without the multiple means of settlement in circulation, the money supply would have been too restrictive on economic activity. This was especially obvious in the busy months of the year. In the Swedish case, the demand for money would culminate in February and March when winter conditions allowed for the transport of goods, especially last autumn crops, and in September when most annual accounts were cleared before the end of the financial year. No one in the Swedish economy, not even the state, had the capacity to create flexible liquidity nearly to the required amount necessary to facilitate trade and production decisions.

The main support for our hypothesis is the fact that the introduction of new money with a doubtful legal position, limited official acceptance for instance for tax payments and with inferior backing was accepted at par value or close to par value with legal tender; i.e. Riksbank notes. As the case with Wadstena Enskild bank shows, if one form of money came to be regarded as of larger risk it would not lead to discounts in the domestic market but that kind of money would simply disappear since it would not be accepted for transactions any longer.

It seems clear that the quality of the supply did not determine the value of notes. As long as the aggregated supply of various origins was below total demand relative prices between these various monies tended to be stable. That can be explained by the argument that the utility of accepting or treating different monies as equal was higher than the risk of a relative fall in value of the monies held. One factor which affected the relative risk of a fall in value is of course how long time each individual kept their money. If shortage was a reality, those

periods would be short since incoming money was used for immediate clearing of other debts. This seems to have been the case in eighteenth and nineteenth century Sweden.

Since demand was fluctuating, this required that the supply was made flexible as well. The monetary sector of the economy must have been flexible enough to respond to the varying demand for money without causing instability by over issuing of money. The solution to this shortage of money (especially when a war is on its way) is not trivial.

The different episode in this case is the episode with the National Debt Office notes and Riksbank notes. Although the increase of money supply at first was welcome, it tended in the long run to be too high and the stability between the relative values of different monies were not maintained. This has previously been understood as caused by the over-issuing of parallel money. We suggest, however, that it was caused by the lack of flexibility in the money supply, especially in the lack of a mechanism for redeeming money during seasonal slacks in demand. Still, it is not impossible that the system of complementary monies could have sustained given the existence of a market to price these two currencies and the fact that both currencies could be used for tax payments. These two features might together have been an effective mechanism for restraining over issuance of a currency in the long run. This we will never know since politicians decided to fix the relative value of the two monies and put thereby effectively a stop to the evaluation by the market.

The question is why the attempt to fix the value of the currency turned out to be sustainable in the nineteenth century. There seem to be many conditions that are not in favour of the successful adoption of a metal standard at this time. The Swedish monetary authorities did not hold much metal as reserves, the economy experience a substantial balance of payment deficit for more than sixty years, the seasonal fluctuations in the economy remained significant and, in addition, the economy went through a thorough transformation from a basically agrarian and proto-industrial economy to one with a industrial sector contributing substantial to the national income. Hence, there are no reasons to believe that structural changes caused the sudden monetary stability but instead that it was due to innovations within the monetary system.

We suggest that the explanation lies in the expansion of the multiple monetary system that emerged in the nineteenth century. Due to this system, demand could really steer supply since banks would have to redeem notes that they over issued. The banks also had the possibility to alter their portfolios to follow demand. When the early private banks started their activities in the 1830s and 1840s, they organised a clearing system as a remedy for one of the causes of

illiquidity. With a debt creating system (private or banks) the number of accounts increases and the mechanisms to transfer “funds” between these accounts increase. Initially, it seems as these credit accounts mainly were a reorganisation of the clearing mechanism by a concentration of accounts in one place. This concentration allowed for multiple clearing between large numbers of traders. The banks accounts thereby help to synchronise the flows of incomes and the need for clearing debts. Furthermore, it put the clearing of accounts in the hands of a third part, at least nominally.

Still, the clearing systems was not ‘integrated’ enough to ensure that money was allocated to the ‘right place’. Individual persons (due to his personal position) could not access money of any other kind than that created either by himself or after 1850 by the bank at his locality. The endogenous process of money creation and the clearing mechanism for money destruction are two significant parts of the Swedish monetary system. Hence endogenous credit allowed for a more flexible money supply by the creation of liquid credit both at the right place and the right time.

The conclusion is that we find the complementary relationships among monies in the multiple sources of endogenous money that supply the economy with the means of settlements needed to balance all the various transactions systems in which an economy is involved. Complementary monies are a response to the markets need for flexibility of liquidity in time and in space. The supply of paper monies is always there – the supply will increase if demand increases – but is stopped if the increase leads to devaluation. The question is how the supply is organized to better adjust to a volatile demand of money, a demand that varies with the demand for money for seasonal, regional, domestic and international transactions.

References

- Agardh, J.M. (1865) *Om Bank-väsendet och penninge-theorien*. Norstedts. Stockholm, Sweden.
- Ahlström, G. (1974) *Studier i Svensk ekonomisk politik och prisutveckling 1776-1802*. Studentlitteratur. Lund.
- Carlsson (1989). “Riksgäldsfullmäktige 1789-1989” in Dahmén (Ed.) *Upplåning och utveckling. Riksgäldskontoret 1789-1989*. Norstedts Stockholm.
- Engdahl, T. (2007) “Making Better Money. Bank Notes vs. Assignations in Nineteenth Century Sweden” Paper Presented at the Workshop *Paper Money in Theory and Practice (XVII – XX Centuries)* at Université Paris X – Nanterre October 23, 2007
- Forssell, N. (1936) *Svenska Postverkets Historia*, Stockholm

- Fregert, K. & Jonung, L. (1996) "Inflation and switches between specie and paper standard in Sweden 1668-1931: A public finance interpretation." *Scottish Journal of political economy* **43**,
- Goodhart, C.A.E. (2003) "The two concepts of money: Implications for optimal currency areas" in Bell, S.A. & Nell, J.N. (Eds.) *The State, the Market and the Euro. Chartalism versus Metallism in the Theory of Money*. Edward Elgar, UK.
- Hallendorf, G. (1931) "Bankens öden från mössväldet till den andra 1766-1803" in *Sveriges Riksbank 1668-1924-1931. Bankens tillkomst och verksamhet. Part III. Sveriges Riksbank*. Stockholm.
- Heckscher, E.F. (1949) "Riksgälds en unik fas i det Svenska penningväsendets historia." *Ekonomisk tidskrift* 1949.
- Kiyotaki, N. & Wright, R. (1989) "On Money as a Medium of Exchange" *The Journal of Political Economy* **97**, pp. 927-954
- Kiyotaki, N. & Wright, R. (1992) "Acceptability, Means of Payment, and Media of Exchange" *Federal Reserve Bank of Minneapolis Quarterly Review* **16**, pp. 18-21
- Kocherlakota, N.R. (1998) "Money Is Memory" *Journal of Economic Theory* **81**, pp. 232-251
- Meyer, L.H. (2001) "Does Money Matter?" *Federal Reserve Bank of St. Louis Review* **83**, pp. 1-15
- Lindgren, T (1968) *Riksbankens sedelhistoria 1668-1968*. Rabén och Sjögren. Stockholm.
- Mårtenson, S. (1958) *Agiot under kreditsedelsepoken 1789 – 1802* Meddelanden från Ekonomisk-Historiska Institutionen vid Göteborgs Universitet 1. Göteborg
- Nordström, J.J. (1853) *Afhandlingar hörande till läran om crediten. I. Credit- och bankväsendet*. Norstedt. Stockholm, Sweden.
- Nygren, I. (1985) *Från Stockholm Banco till Citibank. Svensk kreditmarknad under 325 år*. Liber förlag. Stockholm.
- Ögren, A. (2003) *Empirical Studies in Money, Credit and Banking: The Swedish Credit Market in Transition under the Silver and the Gold Standards, 1834 – 1913*. Doctoral thesis. Stockholm School of Economics.
- Ögren, A. (2006) "Free or central banking? Liquidity and financial deepening in Sweden, 1834–1913." *Explorations in Economic History* **43**, pp. 64-93
- Ögren, A. (2007:1) "The Force of Private Note Issuance: Note Issuing Commercial Banks in the Economic and Financial Development of Nineteenth Century Sweden" Paper presented at the EBHA Conference in Geneva September 12 – 14, 2007 and the EHFF Economic History seminar at the Stockholm School of Economics February 27, 2006
- Ögren, A. (2007:2) "Monetary Theory and Practice: Parallel currencies in Sweden, 1789 – 1833" Paper presented at the H2S EconomiX seminar at École normale supérieure (ENS) – Cachan Paris March 22
- Postmuseum Archives, Stockholm. [The Swedish Postal Museum]

Sargent, T.J., & Velde, F.R. (2002) *The Big Problem of Small Change* Princeton University Press.

Sveriges Riksbank (1931) "Statistiska tabeller 1668-1924" in *Sveriges Riksbank 1668-1924-1931. Bankens tillkomst och verksamhet*. Part V. Sveriges Riksbank. Stockholm.

Wennberg, J.O. (1829) *Om myntbestämning och realisation*. Hörberg. Stockholm, Sweden.