

THE RIKSBANK'S ROLE IN AN ELECTRONIC PAYMENT SYSTEM

**Address by Mr. Stefan Ingves,
Deputy Governor of Sveriges Riksbank,
at a conference, "Credit Card '96",
arranged by the Institute for International Research
in Stockholm, August 28-29, 1996,**

INTRODUCTION

First a word or two about the title of my talk. In its capacity as the operator of the RIX system for the clearance and settlement of large value payments, the Riksbank has been involved in electronic payments for a long time. Each day this system handles "electronic" payments totalling about SEK 300 billion. This means that in the course of a working week, the Riksbank's computers transmit sums equivalent to the value of Sweden's annual GDP.

My topic today is the payment system we generally associate with day-to-day purchases of newspapers, parking services, local transport and so on. In other words, small payments. As a rule, such small daily cash payments represent about 10 per cent of the total turnover in value terms; but when it comes to the number of transactions, they make up around 90 per cent.

SMALL VALUE TRANSACTIONS ARE COSTLY

These small transactions have been arranged traditionally with notes and coins supplied by the Riksbank. At the end of 1995, small-value notes (up to SEK 100) accounted for only 18 per cent of the total value of all the notes in circulation. If one also includes the 500 kronor note, the share of the total value amounts to about 50 per cent, which means that about half of the value of all the

notes in circulation comes from the 1000 kronor notes. The latter denomination is probably not used on a substantial scale for small transactions.

The ultimate aim of the current trend is accordingly to provide substitutes mainly for small-value notes and coins (up to SEK 500). Handling notes and coins in connection with small value transactions is rather costly for banks as well as for sales outlets of various types. It is therefore hardly surprising that new techniques are being developed to lower such costs.

Arranging more and more transactions by electronic means is also desirable in a wider sense in that this can further reduce today's expensive paper-based routines. Compared with many other industrialised countries, in Sweden this tendency is still somewhat sluggish.

DEMAND FOR NOTES AND COINS

In order to gauge the part played by notes and coins in the Swedish economy, I have computed the GDP share for the stock of bank-notes in the period from 1950 to 1995.

As the chart shows, in this period and relative to GDP, the total value of notes and coins in circulation has been halved. Part of the explanation for this is that a growing proportion of transactions now takes the form of electronic money transfers. A significant factor behind this tendency was that instead of being paid out in cash, wages began to be credited to bank or postal giro accounts.

Trends should be treated cautiously but if this one were to continue, twenty years from now bank-notes would no longer be in use.

From the Riksbank's point of view this tendency cannot be resisted and has to be accommodated. As I mentioned earlier, the Riksbank is already closely involved in large value transactions. They are not numerous but all the more important as a basis for the conduct of monetary policy. In this context, a conceivable loss of demand for low denominations of notes and coins is of minor significance.

PRIMARY FUNCTIONS OF THE RIKSBANK

The Riksbank has the main functions of conducting foreign exchange and credit policies and of promoting a safe and efficient payment system.

As you know, the objective of monetary policy involves preventing the value of the Swedish krona from being eroded by domestic inflation. More specifically, the target is to keep the annual rate of price increases at 2 per cent, with a tolerance of ± 1 percentage point.

Providing the Swedish economy with an adequate supply of bank-notes and coins is another important task but for the Riksbank it is not an end in itself. So if the cost of small value transactions can be reduced, we have nothing against this.

The Riksbank is responsible for ensuring that the above-mentioned RIX system contributes to the goal of promoting a safe and efficient payment system.

STABILITY IN THE PAYMENT SYSTEM

The payment system may be harmed if, for instance, forged notes and coins come into circulation. In order to guard against this, Swedish notes and coins incorporate various security features that make them virtually impossible to counterfeit. Poor imitations are obviously feasible but with modern techniques they are relatively easy to detect.

In that the Riksbank has an exclusive right to issue bank-notes and coins and cannot, by definition, go bankrupt, holders and users of its notes and coins do not have to worry about them becoming worthless. This is clearly one of the reasons why they are still popular and attractive.

To the Riksbank, electronic money or, to be more exact, electronic carriers of value for small transactions, is of interest primarily in the context of the payment system.

ELECTRONIC MONEY: TIME-HONOURED INSTRUMENT - NEW TECHNIQUE

By the terms electronic money and electronic small value transactions I shall be referring here to the use of prepaid cards, commonly referred to as smart cards.

The introduction of electronic money does not amount to the creation of a new means of payment. Prepaid paper instruments have existed for a long time in such forms as traveller's cheques and money orders. The latter are issued mainly by banks but the former to a considerable extent also by non-banks. Being trustworthy, these instruments are widely used.

In the same way, cash in the form of notes and coins can be replaced by a prepaid card. Transferring a sum of money from a bank account or some other deposit account to a microchip in a plastic card is tantamount to making a withdrawal from an account and receiving cash in the form of notes and coins.

Legally, the use of a microchip differs from the withdrawal of cash in that a claim still exists on the bank/issuer; which has promised the microchip-bearer to "redeem" the electronic undertaking, on demand, for money.

When payment is made to a third party, instead of transferring an instrument that finally settles a claim, the transaction passes on a claim on the issuer. Whereas bank-notes and coins are legal tender, electronic units of value are not.

IS ELECTRONIC MONEY DEPOSITED?

Technically, a withdrawal to a prepaid card involves the card-holder debiting his/her account - withdrawing money - and giving the issuer a loan against security in the form of the electronic units that are stored in the card's microchip.

In a strict legal sense, however, the transaction amounts to a change in the card-holder's claim on the bank/issuer, from a book claim to a claim in the form of a microchip card. The card-holder does not usually receive any compensation for this "loan" to the issuer, for whom it constitutes non-interest borrowing.

Normally this is not a problem. But difficulties would arise if the issuer were to become insolvent before the card-holder had spent the electronic money or before recipients of this money had "exchanged" it for book claims. Holders of plastic cards with prepaid money and those who have received but not deposited the electronic money are exposed to a risk that depends on the solvency of the party issuing the electronic funds.

This problem is equivalent to the risk involved in depositing money in an account with a retailer (e.g. ICA or KF). Money deposited in a bank has the advantage of being backed by specific legislation and nowadays also by a deposit guarantee. Deposits outside the banking system are not protected in these ways.

EMI RECOMMENDATIONS

The EMI has considered this problem and decided to recommend that the right to issue electronic money which can be used for unlimited payments be restricted to banks. This proposal stems from the EMI's opinion that the comprehensive supervision and oversight of banks limits the risk of an uncontrollable suspension of payments and that if this were to occur, minor claimants such as small savers would be covered by the deposit guarantee.

TRENDS IN SWEDEN - NON-BANK ACCOUNTS

As I mentioned earlier, there is a similar basic problem in the case of retailer's cards (e.g. ICA). In 1994 a law was passed in Sweden whereby non-banks are entitled to accept deposits (payments in advance) without any specific supervision. The balance on such an account is limited, however, to the equivalent of one-half of the base amount (the amount on which the calculation of various social security benefits and pensions is based).

One of the reasons for allowing such deposits was that the Government and Parliament wished to promote competition for depositors' funds and make it possible for numerous transactions to be performed outside the banking system. It was hoped that this would lead to lower transaction costs and thereby benefit consumers. The risk that the depositors run by placing their money with

unsupervised firms was judged to be offset by the potential advantages in the form of higher interest earnings and smoother transactions.

THE RIGHT TO ISSUE ELECTRONIC MONEY

Under these circumstances and in the light of experience of the system to date I do not consider that the right to issue prepaid microchip cards needs to be restricted to banks as long as the value that may be stored on the card is small. There will naturally be little or no interest in storing large values on such cards as long as the holder of the electronic money receives no interest compensation.

The gain to the issuer of electronic money consists in the income earned via the non-interest loan from the card-holder. This gain can be likened to the Riksbank's levy on its circulating notes and coins; the income - seignorage or the prerogative to issue notes and coins - is normally delivered to the Riksdag (Sweden's parliament, which owns the Riksbank) and is accordingly in the nature of a tax on means of payment.

LEGISLATION AND TECHNICAL DEVELOPMENTS

The pace of technical developments is rapid, particularly in microchip technology, and the potential is vast. In this context it is important to bear in mind that the viability of financial products is determined, not by technology alone but by a combination of technology and law.

Under these circumstances it may be of interest to clarify some basic regulations that are applicable to electronic money. It is important, however, that the formulation of laws and regulations does not obstruct continued innovations; it should rather promote them in a favourable direction.

One problem that is already being closely considered is the issue of anonymity. Notes and coins enable the holder to arrange payments that cannot be traced retrospectively. A transaction in a microchip can be stored, which means that the payments can be traced. This can be a social good, above all when it comes to tracing criminal transactions, but its benefit for the individual may be questionable.

Another aspect, mentioned already, is the legal status of electronic money. What happens to electronic money when its issuer is no longer able to redeem the electronic units with legal tender?

Acceptable solutions to these and other questions can probably be found by adapting the existing laws to the new conditions.

A further area of concern may be cross-border payments using prepaid cards. The problems that may arise here mainly have to do with statistics. Cross-border payments with prepaid cards may be more difficult to monitor than such transactions using notes. Considering that the card transactions are arranged with computers, however, this problem can no doubt also be resolved with the aid of common rules for reporting, etc.

E-MONEY AND SECURITY/CREDIBILITY

Matters to do with security have been mentioned earlier and are, of course, important for supervision. Whereas bank-notes and coins have become increasingly difficult to copy, the opposite applies to microchips - as copying them is rather easy, they need to be guarded by other security routines. Here, too, technical progress has been rapid and today, according to microchip manufacturers, the ciphering techniques in protocols for data transmission are so sophisticated that breaking the code with current computer power would take at least a hundred years. This has emerged from a study and analysis of computer security issues, undertaken on behalf of BIS. The study also found that electronic transactions probably have a higher degree of security than transactions using bank-notes.

E-MONEY IN THE FUTURE

Future developments in the field of electronic payments will involve not only cards but also various computer networks, of which one is Internet. The next step is likely to be communication between different systems that are closed at present. The possibility of transferring money from one system to another can be created by means of intermediate storing in, for example, a PC. For the

individual consumer this means that instead of being tied to a single system, in a particular bank for instance, the PC's hard disk can be used to move money from one bank to another. This arrangement probably promotes competition and thereby the development of future payment systems.

Let me sum up:

The Riksbank is essentially in favour of the tendency towards a growing proportion of electronic transactions. That will enhance the effectiveness of payment agencies, lead to lower transaction costs and increase security compared with more traditional paper-based transactions.

In my view it is not necessary for the right to issue prepaid cards or other prepaid instruments in the form of electronic money to be restricted to credit institutions (banks).

Here, however, it is important that the attention of the general public be drawn to the differences involved in electronic money issued by credit institutions as opposed to other enterprises. Credit institutions are regulated and supervised by the Financial Supervisory Authority and balances on accounts with these institutions are covered by the general depositor guarantee. Electronic money issued by enterprises other than credit institutions is not subject to this supervision and guarantee.

I consider that, with some adaptations, the existing legislation - bank law and consumer protection law - is adequate for regulating the issuing of electronic money.

Certain matters to do with the reporting of large transactions in connection with presumed money laundering may remain to be dealt with.

For the Riksbank, the primary concern is that the techniques which are used are secure and that systems for the registration of transactions are sound.

I see the development of prepaid microchip cards (smart cards) as a first step towards a conceivable, far-reaching change in the payment system that will probably lead to changes in the financial market for payment services. In that

money and the handling of payments will always involve an element of public protection, the Riksbank both welcomes this development as such and wants it to proceed in an orderly manner.

Given what I said earlier about refraining from unduly restrictive and premature regulation, what, then, are the authorities doing to keep these matters going and gradually establish an appropriate system of rules for electronic payments?

In my opinion the time has now come for the Riksbank and the Financial Supervisory Authority - both of which have interests to consider in the development of these new payment instruments - to get together and formulate a joint submission to the Government.

One alternative would be to propose supplementary terms of reference for the work of the Bank Act Committee. I find it reasonable that these matters are brought together with this Committee's other work because electronic payments should be treated in connection with other payment services and not as a separate activity. That has been one of the main themes of my address.