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# Report on cash handling 2011

DECEMBER 2011



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# A need to compile information

The Riksbank follows the functioning and development of cash handling in society in several different ways, including various forms of dialogue with the participants. The Riksbank concluded in a report in 2010<sup>1</sup> that there is a need to compile the existing information on and knowledge of cash handling. The aim of this report is to provide an internal compilation of this knowledge at the Riksbank. The report from 2010 also listed some issues that require further investigation. This report deals with some of them. Other questions are dealt with through the Riksbank's regular dialogue with participants in the cash market and in other ways.

The purpose of the report is to make an overall survey of the cash flows in society. The Riksbank has received signals that there may be deficiencies in two areas. The report therefore focuses on these in particular.

- The exchange of cash between depots.
- The cash flow for the retail trade

The report is based on annual reports, press releases, interviews with key persons and the regular dialogue with participants in the cash flow. However, the report does not contain any statistics on the cash flows in society, as this information is normally confidential, difficult to obtain and difficult to compare for the different participants.

## The Riksbank now plays a limited role in cash handling

One of the functions of the Riksbank is to promote a safe and efficient payment system. The Riksbank also has the sole right to issue banknotes and coins (cash) and is responsible for supplying Sweden with cash.

The Riksbank's role in cash handling has changed to a great extent in recent decades. Previously, the Riksbank was involved in the daily flows of cash between banks, retail trade and other participants. Today, the Riksbank's role is in principle limited to the beginning and end of the cash life cycle. The Riksbank issues cash to and receives cash from depot owners.<sup>2</sup>

The Riksbank does not decide on how much cash is put into circulation. Instead this is determined by demand from the general public. This demand thus determines how much the depot owners order and collect from the Riksbank. After some time on the market the cash is so worn that the depot owners hand it in to the Riksbank. The Riksbank in turn destroys the worn cash. The Riksbank also receives invalid banknotes, which are destroyed.

The most recent major change in the Riksbank's role took place in 2005, when the commercial banks were offered compensation for interest expenses for cash stored in their own depots. Since then the handling of cash in circulation has been entirely in the hands of private players. The purpose of this change

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1. Follow-up of the new depot structure for cash handling, 2010, reg. no. 2010-258-ADM.

2. Depot owners can be banks or companies owned by banks. At present there is only one depot owner. Read more in Chapter 2.

was to increase efficiency in cash handling, partly by reducing transports to and from the Riksbank, and to clarify the roles of the parties involved. In the previously-mentioned report<sup>3</sup> from 2010, the Riksbank noted that this objective had been achieved. Cash handling has become more effective and the roles of both the Riksbank and the private agents have become clearer.

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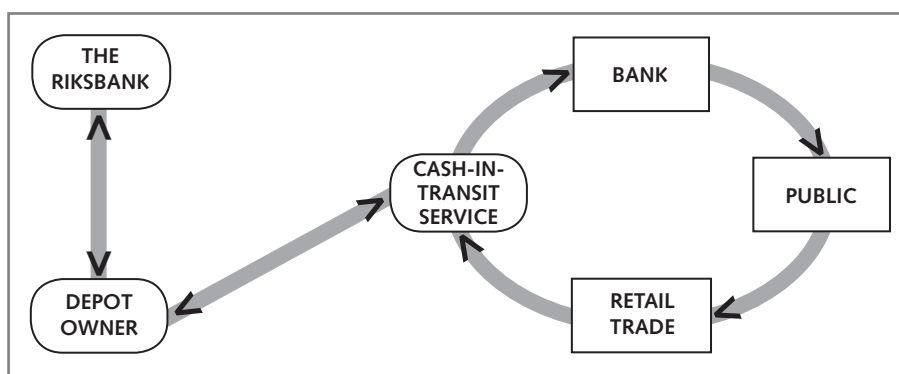
3. Follow-up of the new depot structure for cash handling, 2010, reg. no. 2010-258-ADM.



# General view of the cash handling flow and the participants

The current cash flow can be described as follows: When society has a need for further cash, the depot owner (Bankernas depå AB – BDB) withdraws cash from the Riksbank. The cash is then transferred to the banks and the retail trade by means of cash-in-transit services. The banks and retail trade provide the public with access to cash. When the cash becomes worn out, it is returned (via the banks, the retail trade and cash-in-transit services) to BDB, which then returns the cash to the Riksbank for destruction. This flow is illustrated in Figure 1.

**FIGURE 1: SCHEMATIC DIAGRAM OF THE CASH FLOW IN SOCIETY**



There follows a more detailed account of the cash flows, with the depot owners, cash-in-transit services and retail trade as starting points. The banks, certain bank-owned companies, cash-in-transit services and the retail trade are the central participants in the flow of cash. Consequently, there first follows a presentation of these participants below. In addition, the public is obviously also a central participant.

## The banks

The bank's cash handling consists of over-the-counter deposits and withdrawals from accounts, withdrawals and deposits via ATMs, and cash deposits in service boxes. Above all, cash is handled by Danske Bank, Forex Bank, Handelsbanken, Nordea, SEB and Swedbank, as well as the independent savings banks.

The banks' handling of cash transactions at bank branches is presently undergoing some structural changes. At various rates, Danske Bank, Handelsbanken, Nordea, SEB and Swedbank are cutting back on the possibilities of conducting cash transactions over the counter. Certain bank branches are entirely closed to cash transactions, referring their customers to ATMs or other bank branches. The reason for this is that these transactions are considered to be few and costs for cash handling are relatively high.

In contrast, the free savings banks and Forex Bank plan to increase the possibilities for making over-the-counter cash transactions. At the end of 2010, Forex Bank had just over 80 banking outlets in Sweden.

To a large extent, the major banks engage other agents for different areas of their cash handling. For the transport of cash and the management of ATMs and service boxes, the banks engage different cash-in-transit services. In addition, the five major banks have formed a joint company with responsibility for the management of depots with large cash amounts and another company to take over the ownership of the banks' ATMs (see also the section about BDB and BAB below).

## Bankernas depå AB (BDB)

At present (autumn 2011), BDB is the only depot owner and the only holder of the right to collect and deposit cash at the Riksbank.<sup>4</sup> Depot owner means a bank or bank-owned company holding cash in a depot. For this cash, the depot owner receives compensation for interest expenses from the Riksbank. BDB has twelve cash depots spread around the entire country and a head office in central Stockholm.

Previously, three independent savings banks also ran one depot each. These banks discontinued their depot operations in 2009–2010. BDB has taken over two of the depots, while the third has been closed.<sup>5</sup>

BDB is owned by Danske Bank, Handelsbanken, Nordea, SEB and Swedbank. These banks are also customers of BDB and purchase their cash from BDB. The cash-in-transit services are also customers of BDB. Banknotes are handled at all of BDB's depots, while coins are only handled at one of the depots. BDB has outsourced the operation of the depots to the three largest cash-in-transit services in Sweden, namely G4S, Loomis and Panaxia.<sup>6</sup>

## Bankernas Automatbolag AB (BAB)

BAB was formed in the autumn of 2010 by the five banks that own BDB. During 2011–2012, BAB will successively take over all of these five banks' machines for withdrawing and depositing cash in Sweden. This will include 2 800 ATMs. Through this company, the banks aim to create a joint infrastructure which will give them the possibility of sharing necessary investments. Among other improvements, the ATMs need to be modernised. BAB will purchase cash from BDB.

The operational work of transporting and refilling cash in the ATMs will be conducted by cash-in-transit services, as it is today. In the autumn of 2011, BAB contracted Loomis and Panaxia to provide these services.

BAB's customers are card issuers, which is to say banks issuing generally-viable debit cards and/or credit cards. The five owner banks (Danske Bank, Handelsbanken, Nordea, SEB and Swedbank) are already customers of BAB.

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4. An account of the growth of depot owners can be found in the Riksbank report from 2010 mentioned above.

5. The savings banks were Sörmlands sparbank (depot in Bromma), Sparbank 1826 (Kristianstad) and Swedbank Sjuhärads (Borås).

6. G4S runs 5 depots in Göteborg, Karlstad, Malmö, Umeå and Stockholm. Loomis runs 4 depots in Mölndal, Härnösand, Malmö and Stockholm. Panaxia runs 3 depots in Bromma, Kristianstad and Piteå.

## Cash-in-transit services

Loomis AB, G4S Cash Solutions and Panaxia AB are the three largest cash handling cash-in-transit services in Sweden. Loomis and G4S are both part of international groups, while Panaxia is mainly active in Sweden, but also has some operations in Denmark and Lithuania.

These companies manage ATMs and service boxes. Loomis and G4S currently manage the banks' ATMs, while Panaxia manages Kontanten's ATMs. They are responsible for a large part of the transport of cash to the banks, the retail trade and so on. They take care of the counting, sorting and authentication of cash at what are known as counting centres. There are about thirty counting centres in the country. The companies also sell cash, for example in the form of small change to shops. As was mentioned above, the cash-in-transit services are also responsible for the operation of BDB's depots and for managing transportation between the depots and the Riksbank.

There are a number of smaller companies in addition to the three largest cash-in-transit services. These primarily handle coins, for example from parking meters. These include Nokas-Cashhandling AB and Skandinavisk Mynt Transport AB.

## Other major cash handlers

### **Kontanten AB<sup>7</sup>**

Kontanten provides ATMs. The company is active in Sweden and Finland. In Sweden, Kontanten has about 450 ATMs. Turnover for 2010 was SEK 132 million, which was an increase of 21 per cent compared with 2009.

### **Retail sector**

The retail sector consists of many different participants within the wholesale and retail trade. This includes everything from major retail chains with many shops, turnovers of several million and many employees to small, individual shops with few employees or only the shop-owner as working staff. According to estimates, there are around 40 000 retailers in Sweden.

Two umbrella organisations organise the retail sector, the Swedish Trade Federation (Svensk Handel) and Butikerna. Svensk Handel organises about 13 000 members from various sectors, both the largest retail chains and smaller participants. About 10 000 of Svensk Handel's members have fewer than nine employees. Butikerna organises smaller and medium shops in nine different sectors. Butikerna has about 5 000 members, most of whom only have a few employees.

In addition to these two umbrella organisations, there exist a series of different trade associations.

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7. This information comes from Kontanten AB's annual report 2010 and from the company's website.

# Flows in cash handling

## The cash flow with BDB and the cash-in-transit services as starting point

BDB is the only player that collects cash at the Riksbank when society needs more. BDB is free to collect cash to replenish its depots whenever it likes. The cash in the depots is then sold on into society via cash-in-transit services and banks. One of BDB's inflows of cash thus originates at the Riksbank. Another inflow consists of cash that is not needed in circulation at the moment or that is worn out and which banks and cash-in-transit services sell to BDB. BDB's depots can be said to function as a repository when there is a temporary surplus of cash in society.

An outflow from BDB takes place in three situations: firstly, when any of BDB's customers need further cash; secondly, when BDB hands in seasonal surpluses to the Riksbank during a limited number of periods in the year; and thirdly, when BDB returns worn-out cash to the Riksbank, which can be done at any point. In addition, there is a flow between depots. When necessary, BDB can move banknotes between its 12 depots around the country. Coins are only stored in one depot, so there is no flow of coins between the depots.

## Cash-in-transit services take care of a large part of the cash flow

However, a large part of the cash flow in society does not pass BDB's depots. In many cases, there is no need to store cash in depots as there is an immediate need for it on the market. In this case, the cash collected by the cash-in-transit services from one customer goes out again to another customer. It does not even formally pass BDB.

The cash-in-transit services' inflows come from BDB, the banks and the retail trade:

- The inflow from BDB comes when the cash-in-transit services' customers in the retail trade or the banks (as customers of BDB) need further cash.
- The inflow from the banks consists of surpluses from ATMs<sup>8</sup> service boxes and bank branches.
- The inflow from the retail trade consists of small change surpluses.

The cash-in-transit services' outflows also go to BDB, the banks and the retail trade:

- The outflow to BDB consists of surpluses of cash from either the cash-in-transit services or the banks (as customers of BDB). This is cash that the cash-in-transit services/banks cannot immediately turn over.
- The outflow to the banks consists of cash to ATMs and bank branches.
- The outflow to the retail trade consists of small change.
- The banknotes and coins arrive at the cash-in-transit services in different ways, often depending on denomination.

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<sup>8</sup> The cassettes in the ATMs are often replaced before they are entirely empty.

The banknote denominations 100 and 500 arrive at the cash-in-transit services more frequently than the lower denominations. This is partly because they are present in the ATMs that the cash-in-transit services manage, and partly because they have a higher value. If the cash cannot be rolled over relatively rapidly by the retail trade, its high value will mean an unnecessary charge on the retailers' balance sheets. It is thus sold to the cash-in-transit services, which enter the amount on the customer's bank account. The cash-in-transit service may sell the banknotes on to BDB.

The lower denominations (the coins and 20 and 50 krona banknotes) pass the cash-in-transit services less frequently. They are not present in ATMs and have a low value. They also function as petty cash in the retail trade and among private individuals. As they pass the cash-in-transit services less frequently, they are also sorted for quality less frequently. The banknotes thus become relatively worn before they are sorted for destruction by the Riksbank. In contrast, the coins become worn out very slowly and are not affected by usage to the same extent.

### **The exchange of cash between the depots**

One of the Riksbank's aims with granting compensation for interest expenses<sup>9</sup> for cash is to encourage an exchange of cash between the depots. The idea is that if there is a deficit of cash in a depot, the depot owner should prefer to obtain cash from another depot with a surplus. The depot owner should not collect new cash from the Riksbank until the depots as a whole have a shortage of cash. As BDB is currently the only depot owner, BDB must take responsibility for ensuring that exchange between the depots functions satisfactorily.

However, cash market participants have complained to the Riksbank that exchange between the depots does not always work. This has also been noticed in the short periods when the depot owners can hand in what are known as seasonal surpluses of cash to the Riksbank. On a few isolated occasions, it has happened that cash has been returned to the Riksbank from one of the depots, while an equivalent amount of cash has been collected for another depot on the same or following day. This means that the unnecessary transportation of cash to and from the Riksbank is still taking place.

One reason that exchange between the depots does not function fully may be that each bank engages one particular cash-in-transit service for its cash handling. The banks buy and sell cash solely through that cash-in-transit service, that is from/to the depots run by that cash-in-transit service. One circumstance that probably exacerbates the problem is that one cash-in-transit service may have customers with cash surpluses, while other cash-in-transit services may have customers with cash deficits. This means that a depot may be replenished or emptied at a varying rate depending on which cash-in-transit service runs the depot.

The occurrence of such situations suggests that BDB does not have full control of the flows to and from the depots. It may be because the cash-in-transit services responsible for the operation of the depots can, to a certain degree, decide whether to return their so-called seasonal surpluses to the Riksbank. A cash-in-transit service running a depot that temporarily has a deficit may,

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9. Also called interest cost remuneration.

in certain cases, prefer to obtain more cash from the Riksbank than from a depot run by a competing cash-in-transit service. The problem is probably also grounded in a reluctance among the cash-in-transit services running the depots to benefit a competitor.

In this context, it can also be mentioned that BDB is to change the pricing for deposits and withdrawals of banknotes to and from its depots in 2012. At present, depositing banknotes is free of charge, while withdrawing them incurs a charge. As of May 2012, depositing and withdrawing banknotes will cost the same. It remains to be seen how this will affect the flow of cash.

The picture is partially different for the flow of coins. Several cash-in-transit services have claimed that there is a problem in that BDB's only coin depot has occasionally been full and unable to accept the cash-in-transit services' surpluses of coins. Instead, the cash-in-transit services have stored large amounts of coinage in their own depots (which do not have compensation for interest expenses). The complaint that depositing coins at BDB's depot is too expensive has also been expressed. This has also led the cash-in-transit services not to deposit surpluses at BDB's depot.

The conditions for the depot owners – including free withdrawals of cash from the Riksbank – and the lack of exchange between the depots are probably both leading to more cash being in circulation in society than is necessary. However, in terms of the total amount of cash in circulation, this surplus is probably of marginal significance. Nevertheless, it is a sign of inefficiency when the depots use the Riksbank instead of having sufficient exchange among themselves. As regards the flow of coins, this flow would probably be more efficient if more coin depots were opened. However, at present, none of these problems are of such scope that the Riksbank needs to act and change its role on cash handling.

## The cash flow with the retail trade as starting point

As cash is extensively used in the retail trade, this makes it an important cash handler. The retail trade's inflow consists of customer payments and purchases of cash for small change from cash-in-transit services or banks. The outflow consists of change for customers or cash withdrawals by customers, and daily takings, deposited to a bank over the counter or in a service box, or collected by a cash-in-transit service.

The cash flow can vary for the shops depending on factors such as the shop's turnover and location, the average price for a purchase and the costs of cash handling.

### Flows in smaller and larger shops

Large retailers with high turnovers or goods that command a high price are in a better position than small shops to handle the flow of cash. Larger shops can afford to install expensive closed systems for cash handling. After cash is put into such a system, it cannot be accessed again until it leaves the shop. Larger retailers also engage cash-in-transit services to collect the shop's takings on a daily basis and to manage the closed systems.

For smaller shops with smaller daily takings of a few thousand kronor, it is harder to get the flow of cash to function efficiently. For these, engaging a cash-in-transit service is usually not an alternative, as the costs for collection

are too high in relative terms. Svensk Handel and Butikerna have framework agreements with cash-in-transit services that the organisations' members can use. As a rule, these agreements provide the possibility for lower costs than individual shops would incur if acting alone. All the same, few members use these framework agreements.

For smaller shops, allowing the flow of cash to pass a service box is usually not an alternative either, as this would also be too expensive. Furthermore, the banks started to charge a fee for over-the-counter deposits in 2011. For some shops, over-the-counter deposits are not an alternative either, as a number of bank branches have stopped handling cash and it is too far to the nearest branch that does handle cash.

A shop that is open 200 days a year and which has daily collection by a cash-in-transit service or which itself carries out daily deposits in a service box can thus have a very high annual cost simply for putting the shop's daily takings into its account.<sup>10</sup> This relatively high cost thus means that the flow of cash is different for smaller shops.

Shops with low turnovers avoid depositing takings in a service box or over the counter on a daily basis. Instead, daily takings are collected for several days, sometimes up to a week, before the cash is deposited in a service box or collected by a cash-in-transit service.

One consequence of the shops depositing cash less frequently and storing larger amounts on the premises is that the risk of robbery increases. The costs of handling the flow of cash are thus considered to weigh more heavily than the risk of robbery. It should be noted that, in recent years, there have been about 1 000 robberies of shops per year, compared with none at all 40 years ago.

## **Flows differ depending on denomination**

The flows for low and high denominations are frequently different. A number of shops have both a normal safe for the storage of petty cash and what is known as a deposit safe. As a rule, when a shop opens for the day, petty cash consists of the banknote denominations 20 and 100 kronor and coins. The 50-kronor denomination occurs less frequently. Over the course of the day, as purchases are made, higher denomination banknotes are moved from petty cash to a safer location (a deposit safe, closed system or similar).

Shops with deposit safes or closed cash systems cannot open these alone. Instead, this is done with the help of a cash-in-transit service, which takes care of the banknotes and transports them to a money-counting centre. If the shop does not have a deposit safe or closed system, the higher denominations are sorted out in a different way and deposited in a service box or over the counter at a bank. However, the shop usually retains the lower denominations and recirculates these in the shop's petty cash. As was mentioned above, this view is confirmed by the cash-in-transit services.

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<sup>10</sup> The charge for having a cash-in-transit service collect cash is between SEK 150–200, while depositing in a service box costs SEK 90 per occasion, as a rule. A shop can thus have an annual cost of between SEK 18 000–40 000.

## **Different solutions for the cash flow have been discussed**

The retail trade claims that there is a lack of incentive to work out solutions that would make the flow of cash more efficient. It requests standard solutions for cassettes that can be used in both shops and ATMs. Such cassettes could be moved from shops to ATMs without lengthy transportation and sorting in counting centres. Other solutions discussed include mobile service boxes and having the cash-in-transit services follow permanent routes through areas with many shops. However, none of these suggestions have been implemented.

In a number of shopping arcades, retailers cooperate by arranging joint collections by a cash-in-transit service. However, in total, there are still not many shops located in arcades. Most shops are found along city and town streets and many smaller and medium towns have few or no shopping arcades.

## **Card usage also affects the flow of cash**

Retailers say that shops are keen to see the flow of cash decrease through the use of cards by customers. This is particularly the case when the purchase amount is high.

However, there is quite a large difference between the proportions of cash and card purchases seen in different shops. In shops where customers make purchases averaging SEK 15–20, it is not unusual for half of all purchases to be paid for in cash. This applies particularly to smaller after-hours supermarkets. In shops with purchases averaging SEK 500–1 000, the proportion of cash purchases can be as low as 10–20 per cent.

Even though card fees have decreased recently, a number of shopkeepers still feel that cards are not an adequate alternative for payments of small amounts. This is particularly true of smaller shops where purchase amounts are frequently low. The shops' fees for card payments have fallen, but are still considered by many to be too high. The lower the fee is, the more interesting cards become for smaller shops with many transactions for small amounts. The card fee per purchase is presently about SEK 1. However, this is considered to be a high fee when purchases are for SEK 15–20. Such purchases can even entail a loss for the shop.

Retailers are critical of the way that the banks steer a large part of the fees for both cash and cards. The retailers also claim that the fee structure is wrong, as it is free for the public to obtain cash from ATMs, while shopkeepers must pay a fee to deposit cash. The banks' fee structure should be changed so that the fees for cash are spread more evenly, they claim. This would probably reduce the cash flow in the shops, it is argued.

It is not for the Riksbank to decide how the retail trade, cash-in-transit services or the banks should allocate the costs for cash or other means of payment. However, there are significant gains to be made for society and for companies by having pricing that better reflects the underlying costs. In general, consumers do not understand what it costs to carry out payments. If the customers were also asked to pay the costs of the payment itself when they pay for the goods they have bought, they would probably choose to pay more by debit card and less in cash or by credit card.



In Norway, electronic payments, including card payments, increased very rapidly after the banks introduced fees that better reflected the actual cost of the different means of payment. Among other measures, there is now a small fee for withdrawals from ATMs in Norway. In Sweden, we virtually stopped using cheques when the banks began to charge for them. These two examples show that consumers' choices between the various means of payment change significantly when they become aware of the costs.

## Summary

In this report, an overall view of the flow of cash has been presented. The report has paid particular attention to two areas in which shortcomings have been indicated – the flows between the depots and the flows in the retail trade. From the data reported, it can be observed that the flows function well, on the whole. However, in the report, a few problems have been brought to light:

Even if the occasional unnecessary transportation to and from the Riksbank still takes place, this is of marginal significance in this context.

The flows also largely function in the retail trade. However, it has been noted that the costs of cash handling are relatively high for smaller shops with low turnovers.

The flows for low and high denominations are different. Lower denominations remain in shops as petty cash, while higher denominations circulate between the public, the retail trade, banks, cash-in-transit services and depots to a larger extent. A project is currently underway in the Riksbank aimed, among other objectives, at working out a limit for the quality of banknotes in circulation.

The Riksbank will continue to follow the development of the cash market and to have a dialogue with the market's participants. Particular attention will be paid to following developments in 2012, when BAB takes over larger parts of the flow to and from the banks' ATMs.







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