

# Norges Bank's role in cash distribution

Trond Eklund, director, Leif Veggum, assistant director, Ragnhild L. Solberg, adviser, Chief Cashier's Department

During the past few years, Norges Bank has made major changes in its cash operations. These changes have been designed to adjust and clarify the division of responsibility between the various parties involved in cash distribution. Tasks have been allocated in line with this purpose. Norges Bank's overriding consideration has been to adapt the central bank's cash policy so as to increase the efficiency of the payment system. In practice, this involved changes which have been implemented in three stages. 1) discontinuation of commercial services 2) changes in terms for banks' cash deposits in and withdrawals from Norges Bank and 3) changes in the depot structure and introduction of compensation in the form of interest for cash held in banks' own depots. The result of these changes is that the central bank has assumed a more clearly defined role as wholesaler and banks have taken more responsibility for the redistribution of cash amongst themselves.

Moreover, Norges Bank has assessed the organisation of the services and tasks for which the central bank is responsible. The practical consequence of these assessments is that Norges Bank's cash operations are based largely on outsourcing.

This article presents key assessments of the role Norges Bank wishes to have in cash distribution, as well as information about the changes that have been implemented in the period 2001-2005.

## 1. Background

Developments since the last part of the 1980s form the background for the changes in Norges Bank's role in the handling and circulation of notes and coins (cash distribution). At that time, Norges Bank provided commercial services to banks, in competition with other market participants. At the same time, these services were provided in connection with Norges Bank's tasks and activities as cash issuer (see Eklund and Veggum, 2002). This was unfortunate since the prices that market participants paid for cash distribution services did not fully reflect the real costs of the services. Therefore, it is probable that demand for these services was based on incorrect price information. In accordance with the Norges Bank Act's provisions concerning the promotion of an efficient payment system, Norges Bank therefore considered it important to find better solutions for cash distribution. The changes have also been part of Norges Bank's general efforts to concentrate on core tasks.

## 2. An efficient payment system

In accordance with the first paragraph of the Norges Bank Act, efficiency in the payment system is one of Norges Bank's objectives.

### 2.1 An efficient payment system

The total payment system includes all methods, arrangements and devices that may be used to execute or mediate payments. An efficient payment system is characterised by the existence of available means of payment and payment instruments that are adapted to needs and by the possibility of executing payments quickly, securely

and with the lowest possible use of resources. When users are aware of the prices and features of the various alternatives, they will choose the solutions which are on the whole most attractive. If the prices encountered by users reflect the cost of producing the services, the users' choice will result in an efficient overall use of resources.

Payments are generally executed using two means of payment: account deposits and cash. Whereas moving account deposits largely involves the use of electronic instruments, moving cash requires a large degree of physical handling. This is the case when cash is circulating as a means of payment between banks, businesses and the general public and also when it is out of circulation and belongs to Norges Bank. Moving and storing notes and coins requires a large logistics apparatus and involves considerable costs for many operators. Norges Bank considers it important to facilitate optimal efficiency in the overall payment system. This means that there is an appropriate distribution between cash and account deposits, that cash is supplied and handled as rationally as possible and that security is satisfactory.

### 2.2 Efficient distribution and handling of cash

In order for cash to function as an efficient means of payment, it is necessary that:

- market participants have confidence in cash
- cash has features that are adapted to needs
- cash is available
- all cash processing is efficient

*Confidence* means that users of cash are in no doubt that cash represents claims on the central bank, i.e. that it is genuine central bank money.

*Features* adapted to needs refers to denominations, design and durability (that they withstand different types

of handling), that genuine notes and coins are easy to recognise etc.

*Availability* implies that cash is readily available to the general public and businesses, making it unnecessary to store large amounts of cash.

*Efficient processing* means that the scope of transport, counting, sorting, destruction etc. is correct and that there is an appropriate division of responsibility between Norges Bank and others who process cash, so that the tasks are executed with the lowest possible use of resources.

### 3. Norges Bank's cash distribution policy – important considerations

#### 3.1 Formal framework

Within the framework of the Norges Bank Act, Norges Bank determines which functions and services in the overall cash distribution system the central bank is to be responsible for, the scope of these functions and services, and the terms for their use (including who covers costs). Further, Norges Bank determines which tasks within this area of responsibility the central bank is to perform and which are to be outsourced.

#### Responsibility

Under the Norges Bank Act, Norges Bank has the exclusive right to issue notes and coins. This implies a primary obligation to supply cash, i.e. an obligation to issue notes and coins to meet the needs of the economy. This also implies a secondary obligation to supply cash, which means that Norges Bank shall ensure that an adequate supply of the notes and coins issued is available to the public.

Notes and coins in circulation must be of a certain quality in order to function as an efficient means of payment. Norges Bank has an overriding responsibility for maintaining this quality as well as an obligation to accept worn and damaged notes and coins and replace them with notes and coins of acceptable quality.

Norges Bank is further obligated to accept deposits from banks, but in special cases may also accept deposits from others. This means that as a rule only banks can make cash deposits in and withdrawals from Norges Bank.

#### Tasks

Of the responsibilities imposed by the Norges Bank Act, there is one statutory responsibility that only Norges Bank can discharge. This is the actual issuing of notes and coins, i.e. functioning as debtor for notes and coins in circulation, as well as determining conditions related to issuing. The other tasks ensuing from this responsibility, such as the production and destruction of notes, may be performed by others, but Norges Bank must ensure that these tasks are performed.

Even though Norges Bank has responsibility for a task, the costs may be covered by others.

#### 3.2 Cash supply functions and services for which Norges Bank should be responsible

In addition to fulfilling direct statutory requirements, Norges Bank should in general only have responsibility for functions that the market is unable to provide efficiently or that Norges Bank can provide more efficiently than the market. Even though Norges Bank is responsible for a function, it may, as mentioned above, choose to allow others to perform all or part of the tasks ensuing from this responsibility.

#### Production and design of notes and coins

As issuer, Norges Bank is responsible for designing notes and coins and for ensuring that an adequate quantity is produced and that both design and quality are appropriate. Notes and coins must be designed in such a way that they are difficult to copy, that they include features that make it possible to differentiate between genuine and counterfeit notes and that they also have features that allow them to function efficiently as a means of payment. Norges Bank is also responsible for ensuring that the authenticity features are widely known. This is especially important in relation to the average consumer who does not have access to special tools to verify that notes and coins are genuine. Norges Bank follows developments closely with a view to preventing counterfeiting. Norges Bank decides on the actual design, whereas the notes and coins can be produced by external suppliers.

#### Supply

The central bank is basically responsible for ensuring that society has access to cash (obligation to supply cash). Norges Bank is the banks' bank and supplies cash to banks. Banks in turn supply their customers through ATMs and over the counter at bank branches. In other words, Norges Bank acts as a cash wholesaler. Standards and packaging requirements in connection with banks' withdrawal and deposit of notes and coins in Norges Bank should thus be designed in such a way as to underpin Norges Bank's role as wholesaler.

Given full information concerning costs, prices and quality, the market (market participants) is best qualified to find good solutions for cash distribution. Norges Bank wishes to encourage market participants to constantly seek the best solutions based on cost/benefit analyses, and to ensure that distribution sites and processing solutions change in line with the assessments of market participants. This would initially imply that Norges Bank supplies banks from just one business site. Security and logistics considerations may however necessitate having emergency stocks at more than one site. In addition, Norges Bank appears better equipped than banks to transport large amounts over long distances. This may imply that Norges Bank should have additional depots and business sites and handle the transport between them in a system

that can constitute the “central nerve” of the supply and distribution of cash. Within a region, banks should be responsible for supplying cash to their customers and for redistributing cash among different banks and bank branches.

### Processing

Norges Bank is responsible for the destruction of notes and coins and for authenticating cash that is to be destroyed. The actual destruction and authentication may be performed by others, assuming that the central bank has established a satisfactory control system.

Experience shows that in order to protect themselves against losses due to counterfeiting, market participants wish to verify themselves that the cash accepted is genuine. This implies that there is no need for further authentication by Norges Bank other than that performed in connection with destruction. To verify that market participants’ authentication procedures are satisfactory, Norges Bank should nevertheless authenticate a random sample of notes and coins delivered to the central bank for redistribution. In addition, the central bank should establish rules for quality control so that notes and coins that are not fit for redistribution are actually removed from circulation.

Market participants are demanding other types of processing services, such as sorting and packaging. They should determine the scope and form of these services on the basis of their needs and the costs of various alternatives. This will pave the way for efficient solutions where market participants demand a “correct” volume of services and these services are delivered by those who can do so most efficiently. Therefore, Norges Bank should not be responsible for nor provide such processing services.

### 3.3 More on cost coverage

In principle, users should cover the costs of using cash just as they do for using other means of payment. However, there are certain factors that indicate that Norges Bank should cover certain costs:

- Norges Bank assumes that its responsibility to issue notes and coins also includes a responsibility to replace cash, which implies an obligation to cover certain costs connected with redemption and destruction of worn and damaged notes and coins as well as notes and coins withdrawn from circulation.
- In principle, everyone who is in possession of notes and coins gives an interest-free loan to the central bank. This enables the bank to invest and achieve a return on capital equivalent to this interest-free loan, thereby providing the Bank with income, called seigniorage. Therefore, it may be argued that users cover certain costs connected with cash. If users in addition

were to cover all costs related to cash distribution, they would cover more than the costs of using cash, and this would not be desirable in terms of efficiency. It would be difficult, however, to find a system where this net income is returned to those bearing the costs. A more appropriate solution is that Norges Bank covers some costs in connection with cash distribution. These should be costs that are otherwise difficult to allocate to the “correct” market participant without disturbing incentive structures that are desirable in terms of efficiency.

On the basis of these assessments, Norges Bank will cover the following costs:

- costs related to the design and production of notes and coins
- information to users
- costs related to receipt of damaged or worn notes and coins, as well as delivery of notes and coins of acceptable quality to replace them, so-called “free-of-charge services” (Banks cover costs connected with ordinary deposits in and withdrawals from the central bank of cash fit for redistribution.)
- authentication and destruction of damaged and worn notes and coins
- storage of cash in central bank depots and costs of transporting cash between these depots

## 4. Changes made by Norges Bank over a five-year period

During the period 2001-2005 Norges Bank has made a number of changes in the light of the cash distribution policy and considerations outlined in section 3. The changes concern the type of functions and services for which Norges Bank is responsible and the conditions attached to market participants’ use thereof. The changes also concern the organisation of the tasks for which Norges Bank is responsible.

### 4.1. Changes in Norges Bank’s role

The changes have taken place in three main stages.

#### Stage 1 – discontinuation of commercial services

Substantial changes in the cash flow between banks and the public in the 1980s and 1990s, including increased use of ATMs and night safes, provided a basis for new commercial cash processing services. Cash that was delivered by way of night safes had to be sorted, counted and checked before it could be redistributed. Notes for dispensing through ATMs had to be of a certain minimum quality, which placed greater demands on quality sorting. Unfit notes also had to be removed and delivered to Norges Bank for destruction. Norges Bank, for its part,

had to count and check notes in connection with destruction. Norges Bank had high capacity banknote-sorting machinery which could carry out authentication, quality sorting and automated destruction of notes in the same operation. It was thus possible to exploit economies of both scale and scope in the processing, as services for banks (counting, sorting and quality control) were carried out alongside destruction. During the 1990s, Norges Bank became an increasingly important player in the area of cash processing, in competition with other operators in this area.

On the one hand, the central bank was competing in the market for services, while on the other there was increasing focus on core tasks. It was clearly necessary to distinguish between central bank tasks ensuing from Norges Bank's statutory responsibility for issuing notes and coins and operations of a more commercial nature. However, it was considered desirable that such a distinction should not be made at the expense of economies of scope and scale in the automated processing.

Norges Bank has a general responsibility to ensure that central bank tasks are discharged in the most appropriate manner possible, which implies cost-effectiveness. Therefore, it was also considered important to ensure that market participants demanded a "correct" volume of services and that these services were provided by the best qualified operators. This presupposes that the price for these services is cost-based.

- To this end, Norges Bank had the choice between
- a) discontinuing all commercial activities, so that the Bank only carried out statutory services
  - b) establishing an internal profit centre in Norges Bank that took account of the distinction between central bank tasks and other services
  - c) spinning off the activity into a separate company

When the various options were assessed, it became clear that if option a) was not to be chosen, a form of organisation had to be found with the flexibility required in a competitive market. The conclusion was to spin off the activity into a separate company. Norsk Kontantservice AS (NOKAS) was therefore established on 1 July 2001, owned jointly by private banks and Norges Bank. The company took over employees, machinery and equipment from the owners. Since the establishment of NOKAS, Norges Bank has had a 33.5 per cent ownership share, but this is currently under consideration.

This restructuring meant that all commercial services that Norges Bank had provided for banks were discontinued. The distinction between central bank services and services for others had been established, and formed a better basis for cost-based pricing of the various services. Stage 1 of the clarification of the division of responsibilities and work between Norges Bank and banks in the area of cash distribution had thus come to an end.

### Stage two – new rules for banks' deposits with and withdrawals of cash from Norges Bank

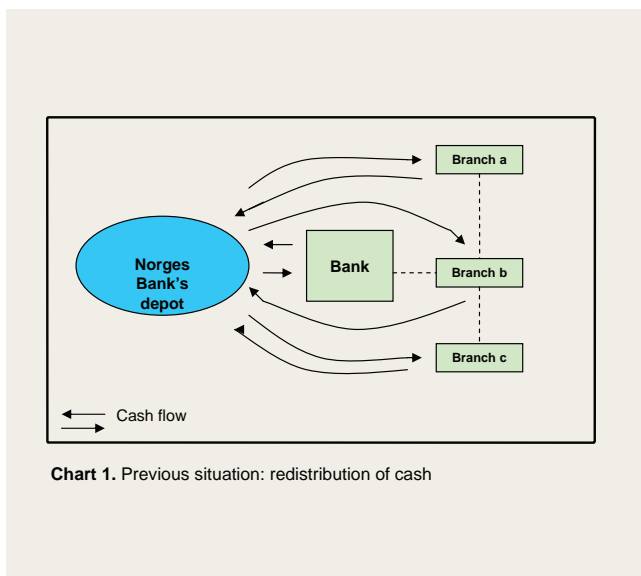
The establishment of NOKAS was an important step towards a more efficient distribution and processing of notes and coins. However, there proved to be aspects of cash distribution that still did not function according to Norges Bank's wishes.

For a number of years, Norges Bank had been responsible for much of the cash distribution among banks and their branches without charging them cost-based prices. Banks had geared their activities and routines accordingly, and it was doubtful whether demand for the various types of cash distribution services was of the correct magnitude and optimal in terms of overall efficiency. The establishment of NOKAS did not change this situation appreciably as long as the conditions for deposits with and withdrawals from Norges Bank, and hence for redistribution via Norges Bank, were unchanged.

Norges Bank's aim is to act as wholesaler. In practice, however, the central bank was functioning more like a retailer, as the distribution of cash among banks and among branches of individual banks largely went through Norges Bank. Banks also appeared to be frequent users of Norges Bank's depots for storing cash that would normally constitute banks' stocks for short-term transactions, as a large number of banks delivered cash in the evening only to withdraw the same amount the next morning. As a result, there was an undesirably large amount of cash coming into Norges Bank, and a large number of small transactions.

Chart 1 outlines the principles for the distribution of cash between Norges Bank and banks, as it functioned both before and after the establishment of NOKAS.

There were a number of reasons for Norges Bank assuming the role of cash distribution retailer and contributing to this type of distribution between banks and their branches:





- Norges Bank pays interest on banks' overnight deposits. By depositing their short-term excess stocks in Norges Bank, banks earned interest income while avoiding storage and security expenses. By coordinating transports with regular schedules, banks minimised the marginal expenses associated with transporting larger quantities. Banks have been able to deliver and withdraw money around the clock, and interest has been calculated on the basis of transactions made up to midnight.
- Geographically, Norges Bank's depot network has had a finer mesh than can be justified by the obligation to distribute cash and by contingency considerations. This has made Norges Bank very easily accessible to banks and their branches, as they have often been close to a depot which could be used without major transport costs.
- Norges Bank had established small standard units<sup>1</sup>, which made transactions involving relatively small amounts possible.

Norges Bank therefore was therefore paying interest and spending resources on inflows of notes and coins in a manner that was not justified by the Bank's objectives. It was doubtful whether Norges Bank's covering the costs of services that were demanded by and the responsibility of banks formed a satisfactory basis for efficient use of resources.

Chart 2 illustrates the desired situation, where the banks themselves are responsible for redistribution within a geographical region of a certain size. This region is "served" by one central bank depot, and the intention is that transactions between depots and banks should be few and sizeable.

Norges Bank evaluated a number of means of achieving the desired situation. Banks had to be given greater incentives to assume responsibility themselves for the distribution of liquidity at the retailer level. Furthermore, the means used and the changes made must not be in

conflict with the desire to retain the economies of scope and scale in cash processing.

The conclusion in Stage 2 was to amend Norges Bank's framework conditions regarding banks by changing the terms for deposits in and withdrawals from the central bank. Following a consultative round in the banking sector, the changes were adopted with effect from 1 January 2005, and contributed to raising the "threshold" for central bank depots (illustrated by the red line in Chart 2). The changes were as follows:

- *Value date rules*

The value date was changed so that notes and coins must be sorted into two qualities, fit and unfit for redistribution, before they can be accepted as deposits in Norges Bank. Sorting according to quality is the banks' responsibility and the associated costs are covered by the banks. Norges Bank has provided information that allows banks or operators performing these services for banks to distinguish between fit and unfit notes.

As mentioned, the obligation to supply cash means that Norges Bank must replace unfit notes with fit notes free of charge. It has been difficult to achieve such simultaneous exchange in practice as long as it has not been required that unfit notes be delivered separately to Norges Bank. By introducing a requirement of sorting prior to delivery it was possible to define and provide services that were free of charge.

- *Standard units – larger minimum amount per denomination for delivery of notes and coins*

Norges Bank increased the size of standard units from 500 to 1000 for 500-, 100- and 200-krone notes, and from 100 to 500 for 500- and 1000-krone notes. These amounts are moderate compared to the practice in other, comparable countries. The standard unit for coins was made 150 rolls for all denominations, which was an appreciable increase on previous practice.

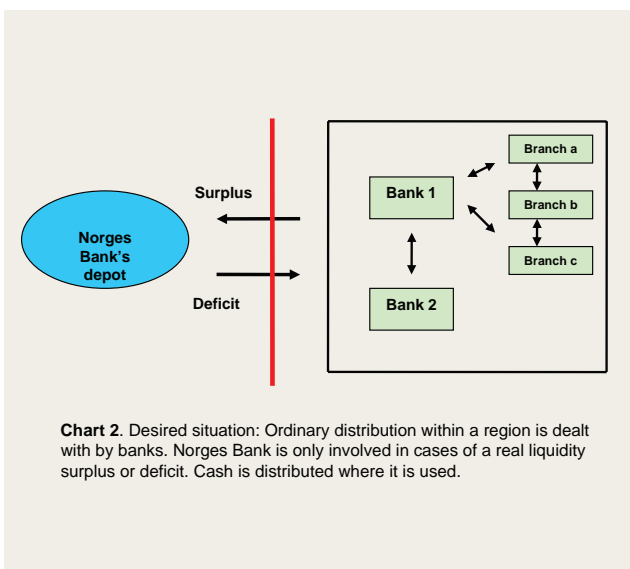
- *Change in packaging*

Since Norges Bank required that notes be sorted into two qualities before delivery, it was possible to make note processing more efficient by requiring that the units delivered be sealed. Notes that are fit for redistribution can thus be sent directly from central bank depots without any inspection other than ensuring that the seal is unbroken.

Norges Bank had previously accepted deposits of coins in various types of packaging (rolls, bags, boxes etc.). The Bank regarded it as more efficient to have only one type of packaging, and in consultation with the banking associations chose rolls. This is the same type of packaging that is used for new coins.

- *Charges for deposit/withdrawal services*

For a number of years, banks have been paying handling fees for ordinary deposits and withdrawals of unfit notes



<sup>1</sup> "Standard units" means the smallest quantity that could be delivered or withdrawn from the central bank. Before 1 January 2005, the smallest unit for 50-krone, 100-krone and 200-krone notes was a package of 500. The smallest unit for 500-krone and 1000-krone notes was 100 notes (a bundle). Norges Bank can at any time stipulate the content of a "standard unit" (cf. Section 20 of the Norges Bank Act).

from Norges Bank. Since NOKAS was established, these handling costs have been invoiced by NOKAS, sometimes in combination with other services requested by banks. As a result the price of the actual handling services was not sufficiently visible to the banks. This made it difficult for banks to demand the “correct” volume of deposit/withdrawal services. In Stage 2, it was therefore decided that Norges Bank should invoice banks for handling costs accruing in NOKAS, the central bank’s depot manager.

Some other central banks impose penalties if cash is not delivered in accordance with their requirements. Norges Bank has chosen to observe developments before introducing such penalties.

The Stage 2 changes thus made the division of responsibility and work between the parties involved clearer and the costs of the various services more visible. The rules for deposits in and withdrawals from Norges Bank were also more consistent with the central bank’s desired role as cash wholesaler.

In practice the changes rapidly led to fewer and larger cash transactions with Norges Bank.

### **Stage 3 – change in depot structure and introduction of interest compensation for cash in private depots**

In Stage 2, it was proposed reducing the number of central bank depots and the period of the day during which banks can deliver and withdraw money at a central bank depot with interest-earning effect. The banking associations were not in favour of this and cited banks’ need for depots for interim storage and redistribution. The banking associations also requested that an arrangement with private depots be considered. This implied an arrangement governed by certain rules whereby banks could store their cash stocks themselves and at the same time receive some form of remuneration as though the cash had been deposited with Norges Bank. It was accordingly decided to postpone changes in the depot structure and reconsider this question. After a further review, the following changes were arrived at, and implemented as Stage 3:

- *The number of central bank depots is to be reduced, and private depots are to be allowed*

Norges Bank is reducing the number of central bank depots from eleven to five. The first stage of the downsizing was completed on 1 February 2005, when the central bank’s depots in Finnmark (Vardø and Hammerfest) were closed. Prior to this, Norges Bank and the banks had worked together to find satisfactory solutions for the distribution of cash in Finnmark County. In the course of 2005, the other four central bank depots will be wound up.

- *Introduction of compensatory payment in the form of interest by Norges Bank to banks for stocks kept in private cash depots*

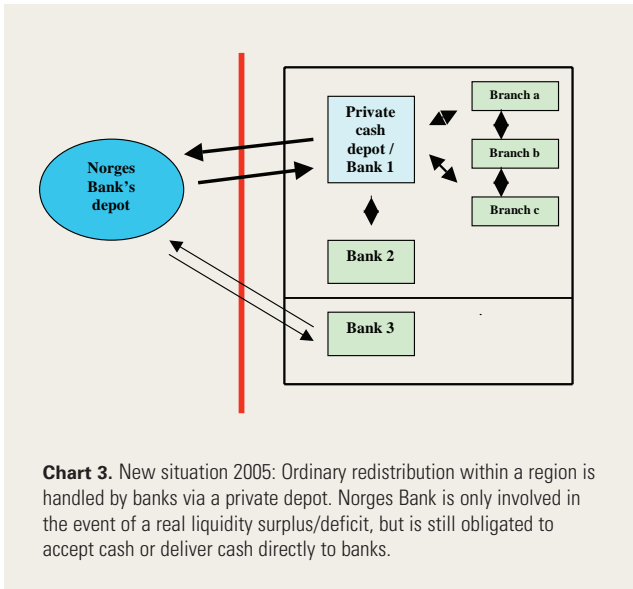
The decision to reduce the number of central bank depots was accompanied by a decision to pay interest compensation according to specific rules for private cash depots. Private depots will be established if banks find it more appropriate to carry out distribution and interim storage at such depots rather than going by way of the central bank depots. According to the compensatory payment arrangement, banks will be paid the same interest whether the cash is stored in a private depot or a central bank depot. The change contributes to ensuring that banks’ decisions regarding the establishment of such depots, and the choice of management solutions, are based as far as possible on real costs, and not on where the cash must be stored in order to earn interest.

The cash stocks in the private depots are the banks’ property. Banks bear the costs associated with the depots and determine the scope and location of the services. They can operate the depots themselves or use external service providers such as NOKAS, Securitas etc. Norges Bank has not limited the number of private depots with interest compensation, but this issue will have to be reviewed if there is greater than expected interest in this solution.

- *Changes in business hours at central bank depots – value dating rules*

At private depots banks can decide on their own business hours and terms for deposits and withdrawals, on the basis of the costs of the various solutions. Private depots with interest compensation may also be established at the same place as central bank depots. The business hours and value dating of central bank depots will then be of less importance to the banks’ behaviour, and Norges Bank can base them on internal considerations. By the end of 2005, the period of the day during which deposits/withdrawals must be made at central bank depots in order to earn interest will therefore coincide with ordinary business hours.

When Stage 3 of the changes has been implemented in the course of 2005, the depot structure will be as shown in Chart 3, with a number of private cash depots established by the banks and five central bank depots.



**Chart 3.** New situation 2005: Ordinary redistribution within a region is handled by banks via a private depot. Norges Bank is only involved in the event of a real liquidity surplus/deficit, but is still obligated to accept cash or deliver cash directly to banks.

#### 4.2. Changes in the organisation of the tasks for which Norges Bank is responsible

NOKAS provides business services (quality sorting, packaging etc.) for banks in competition with other market operators (Securitas, banks etc.). Norges Bank has chosen to outsource the destruction of notes to NOKAS. As far as we are aware, no other central bank has outsourced this task to the same extent. A condition for this solution was that Norges Bank could be assured of the necessary control during the destruction process. The solution was that the Bank, in collaboration with the machinery suppliers, developed a surveillance system (see Veggum and Natvig, 2002). Economies of scope and scale are thus also achieved in note processing, as control and sorting for banks and destruction of notes for Norges Bank are carried out in one and the same process.

In addition, Norges Bank has chosen so far to use NOKAS as its depot manager. This means that NOKAS is commissioned by Norges Bank to deal with the administration of the actual depot vaults and the stocks kept there. Banks therefore meet NOKAS employees when they come to a central bank depot to deposit or withdraw cash.

Det Norske Myntverket AS (formerly the Royal Norwegian Mint) was initially part of Norges Bank. In 2001, the mint was spun off into a separate limited company, and in 2003 Norges Bank sold the shares in the company. At the same time, a long-term delivery agreement was signed. The Mint is now an external supplier of coins. When the delivery agreement expires in 2009, Norges Bank will invite tenders for the production of coins from a number of mints.

Norges Bank has also decided to wind up its Printing Works in 2007. This means that notes will subsequently also have to be bought from external producers.

## 5. Conclusion

By reviewing the division of responsibilities and work in the area of cash distribution, and changes in the means employed, Norges Bank has attempted to contribute to a clearer and more appropriate distribution of roles between various operators. Those operators requiring storage and processing services are also being offered more cost-based prices than previously, which provide them with a more rational basis for the choice of both type and scope of services. This helps to improve the efficiency of both cash distribution and the payment system as a whole. Norges Bank will evaluate the effects of the restructuring carried out in consultation with the banking industry, make adjustments as needed and take further steps to improve efficiency.

Norges Bank has also changed the organisation of the services for which the central bank is responsible by outsourcing a large portion of the services. This underpins the changes that have been made in the role of the central bank to improve the efficiency of the payment system as a whole.

## References

- Eklund, Trond and Leif Veggum (2002): "Change in the organisation of the supply of notes and coins". *Economic Bulletin* 2/02, pp. 58-62.
- Veggum, Leif and Peder Natvig (2002): "Destruction of banknotes outside the central bank". *Economic Bulletin* 1/03, pp. 21-23.