

The role of the central bank in the cash cycle

27 May 2010

Maintaining the supply of cash in the economy is one of the Bank of Finland's core tasks. Cash (banknotes and coins) has maintained its position as a means of payment for centuries, although the spread of electronic payment means has progressed rapidly in recent decades. Together with the other stakeholders involved in the cash supply cycle, the Bank of Finland is responsible for ensuring the authenticity, quality and availability of cash throughout Finland. The central bank's focus is concentrated on wholesale cash distribution. This article describes how the Bank of Finland sets its service level in cash supply. We also assess the position of cash relative to card payments.

What is cash supply?

Consumers rarely stop to consider how the cash they have in their possession circulates in society or what sort of systems are used to produce the services that facilitate the frictionless use of cash. Most people are aware that central banks enjoy a monopoly on the issuing of cash, but the management of cash – also referred to as maintenance of cash supply – at national level is a much less familiar issue.

Maintenance of cash supply remains one of the basic functions of a central bank. This means responsibility for ensuring that enough authentic, good quality cash is circulating in society to meet demand.

According to current practices, the distribution of labour in cash supply in Finland is that the Bank of Finland provides primarily wholesale services, with retail services being provided by private operators: banks, cash-in-transit companies, ATM companies and retail traders. In relation to cash supply, the Bank of Finland has no private retail customers or personal accounts.

Another way of looking at this is that the Bank of Finland has defined its role as the procurement, issuing and recycling of cash, the destruction of damaged or discoloured banknotes and the direction, coordination and supervision of private operators in the cash supply system. With regard to the recycling of banknotes currently in use, however, the focus is shifting more and more towards the private sector, which is at present responsible for around half of the banknotes to be returned into circulation after sorting. The Bank of Finland will accept as cash cycle companies only wholesale customers that meet specific criteria set by the Bank and sign a cash client agreement with it.

Originally, the Bank of Finland carried out all cash supply tasks itself. To this end, it had 12 branch offices in different parts of the country. Nowadays, in addition to the main cash centre in Vantaa, there remain only three regional offices (in Tampere, Kuopio and Oulu), which means there has been a corresponding



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increase in the role of the private sector in cash supply and a clear division into wholesale and retail activities. Together with Finnish accession to the euro area, this trend has reduced the Bank of Finland's share in practical day-to-day activities and increased its role in oversight.

The changing role of the Bank of Finland highlights the importance of cooperation between the various parties in the cash business. It is important that all the parties involved in the cash cycle share a common perception of how this can be managed in Finland in accordance with the rules of the euro area in a manner most conducive to the welfare of the Finnish economy as a whole. Below, we seek to address this issue from a central bank perspective by taking as our framework the cash cycle services offered to its customers by the Bank of Finland. How are the services produced? Who produces them? How are the societal costs of the services divided up?

Bank of Finland's cash services

The cash cycle is divided into central bank, wholesale and retail activities

When defining the Bank of Finland's role in the cash cycle, we can begin our analysis by dividing the supply of cash into three operational components: central bank tasks, wholesale activities and retail distribution (Charts 1 and 2).

There are certain basic aspects of the cash cycle that can be unambiguously classified as central bank tasks. In practice, the Bank of Finland cannot transfer these tasks to private operators. These include the issuing of coins and banknotes, the destruction of banknotes and, as the monetary authority, overall responsibility for cash supply. Participation in Eurosystem cooperation is another important part of the Bank of Finland's tasks as a central bank.

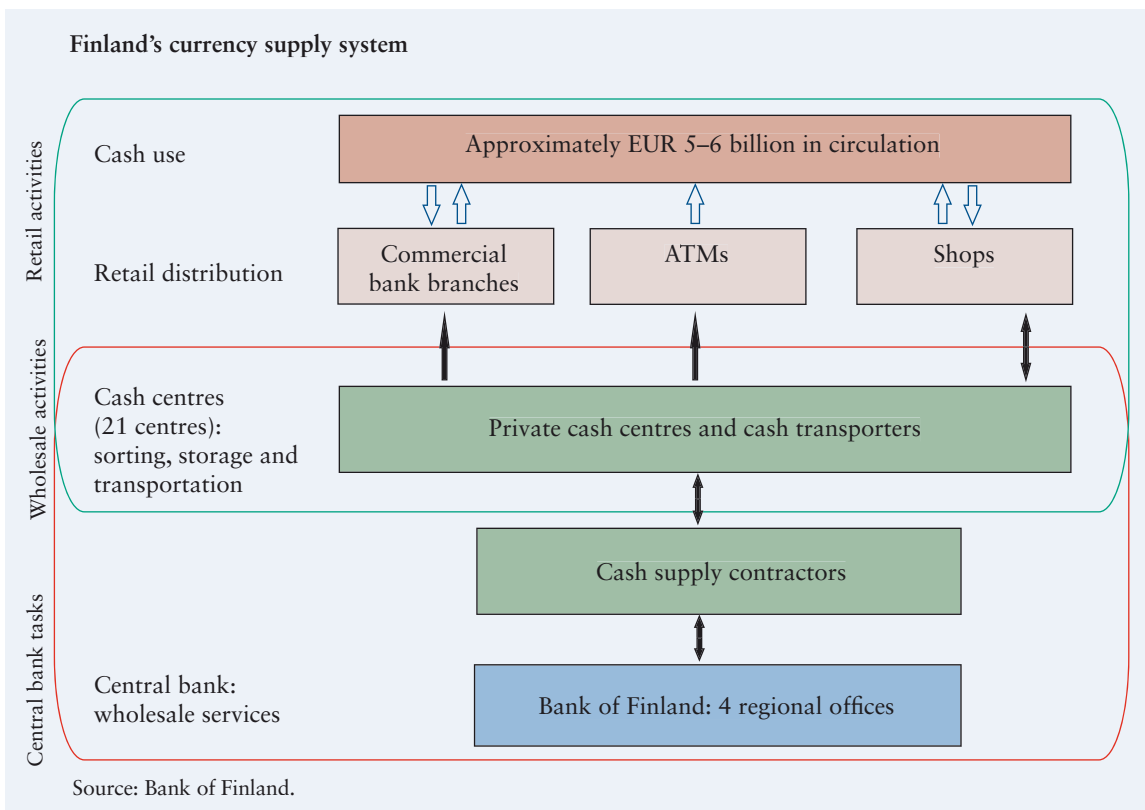
Wholesale activities, meanwhile, are carried out in cooperation between the central bank and private operators. The Bank of Finland's role in wholesaling has declined considerably in recent decades. At present, the Bank has four regional offices, which it uses in managing its wholesale cash logistics. Wholesaling nowadays emphasises the responsibility of professional, privately owned cash-handling companies. At present, these companies operate 21 private cash centres catering to the provision of cash at local level. The Bank of Finland's regional offices form the core of the wholesale network around which the private cash centres operate throughout Finland.

Retail cash distribution is the responsibility of deposit banks, cash-handling companies, cash transporters and retail traders. They decide the details of retail distribution, such as the number and location of ATMs and the pricing of the various retail cash supply services. In practice, the

Chart 1.



Chart 2.



end customers of the entire cash cycle – members of the public and businesses – purchase their desired retail services as part of their general banking services or directly from cash-handling companies.

In Finland, the present distribution of labour in professional cash handling has with time become well established and efficient. Although central banks in some euro area countries still also offer retail cash services, the predominant trend appears to be moving in the direction of central banks further limiting their role primarily to wholesale activities. Central banks do not want to compete with private operators in the provision of retail services – nor are they necessarily equipped to do so. Moreover, the development of improved, cheaper cash-processing machines has facilitated the increased importance of private cash centres in both wholesale and retail cash-handling services.

It has been decided within the Eurosystem that central banks must offer specific commonly defined minimum cash supply services. As a member of the Eurosystem, this requirement of course applies to the Bank of Finland. Each central bank within the Eurosystem must have at least one office that offers basic cash supply services free of charge to parties involved in cash supply. This requirement constitutes the absolute minimum level at which the Bank of Finland will in future continue to be involved in wholesale activities.

Distribution of labour and distribution of interest determine service level of central bank

As monetary authorities, central banks must always be involved in organising the maintenance of cash supply. The key question is the scope of the cash cycle services they offer. This question is particularly relevant when examining how the overall costs of cash supply are distributed between the central banks and other parties to the system.

The level of cash cycle services provided by a central bank can be summed up in two variables: the distribution of labour in respect of wholesale activities between the central bank and private operators, and the precise positioning of the distribution of interest, which determines the extent to which the central bank bears the interest costs arising from the storage of cash.

The distribution of labour is directly based on the central bank's network of regional offices. The more extensive the regional office network is, the more the central bank will be involved in organising wholesale activities. Correspondingly, a limited network of regional offices means a greater degree of responsibility for wholesale activities is transferred to private partners, and at the same time these will bear a larger proportion of the costs.

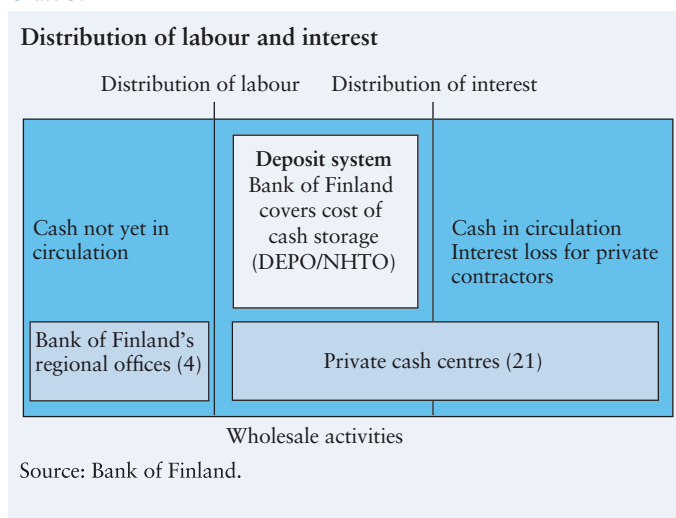
The counterpart of the distribution of labour is the distribution of interest (Chart 3). This means the

point up until which the central bank will cover the interest burden to private professional parties from cash storage. Holding cash causes an interest loss to the holder. For example, a private cash centre sustains an interest loss on overnight storage of cash. If the cash centre returns banknotes to the central bank in the evening, the latter credits an equivalent sum to the cash centre's bank account, which it can then invest as assets and earn interest on its investment. For an individual member of the public, the interest loss on holding cash is insignificant, but on the scale of a cash centre it is an important consideration. The interest burden from holding cash is a significant cost item in the overall costs of private wholesale operators in the cash supply system.

Through the cash deposit system the central bank can help cover the costs of cash supply

Central banks can help to cover the interest burden by setting the distribution of interest in such a way that cash does not have to be physically returned to the central bank. Such an arrangement is known as a cash deposit system. Deposit systems are nowadays a key component of the cash supply services provided by central banks in the euro area. The Bank of Finland offers participation in its cash deposit system to all wholesalers that have signed a cash client contract.

Chart 3.



There are many types of cash deposit system. Like the other Nordic countries, Finland operates a DEPO scheme based on interest compensation, under which the Bank of Finland compensates private partners for a portion of their interest loss.¹ By thus expanding the cash deposit system, the central bank participates more in covering interest loss and the broader costs of cash supply.

Some countries in the euro area operate a Notes-Held-to-Order (NHTO) cash deposit scheme. Under such an arrangement, instead of paying direct interest compensation, the central bank credits the signatory to the cash client contract with the entire sum of cash it is holding, without this cash being returned to the central bank. The cash is then owned by the central bank overnight. This

¹ The interest rate applied is the 1-month Euribor.

arrangement resembles the situation where the cash is actually returned to the central bank. In an NHTO scheme, part of the cash centre's vaults can effectively be considered to be the central bank's vaults.

In addition to the distribution of labour and interest, the central bank can also adjust its cash service level by altering the conditions it imposes on operators in the wholesale cash market. These include the minimum size of the wholesale packages for cash returns to the central bank and the cash-sorting requirements for cash being returned. Although at first glance these may appear to be trivial issues, they do in fact enable the central bank to exert considerable influence over cash supply operations, even if the distribution of labour and interest remain unchanged.

Service level review will improve efficiency of the cash cycle

The Bank of Finland is currently reviewing the cash cycle throughout Finland. The objective is to ensure the availability of cash throughout the country and also to steer cash supply in a more secure and cost-effective direction from the perspective of society as a whole. A recent internal analysis of the service level identified three key development challenges: improving the recycling of cash at regional level, reducing double sorting of banknotes and ensuring an adequate level of competition in wholesale activities. In response to

these challenges the Bank has decided on the following solutions.

In the first place, it will seek to improve regional cash recycling in economic regions where it does not have a regional office. In an optimal situation, the cash cycle in the key economic regions of the country operates fairly independently: regional demand for cash corresponds to the supply of cash within the region. In order to improve the regional cash cycle, the Bank of Finland will increase the scale of the deposit system in challenging regions and also take account of the necessary cooperation in its contracts. Efficient local recycling of cash may in practice require cooperation between private contracting parties in order to balance out structural surpluses and deficits.

Secondly, the Bank of Finland currently counts and sorts all banknotes arriving at the Bank, although these have normally been handled once already in the private cash centres. This means double sorting, with almost exactly the same work being done twice. For society as a whole it would be more efficient if the cash were sorted only once. To solve this problem, the Bank of Finland will henceforth place additional requirements on the cash to be deposited with it. This will mean moving towards an arrangement whereby banknotes in good condition will be recycled more locally, with primarily just damaged

The Bank of Finland is seeking to further improve Finland's already efficient cash supply system.

or poor quality notes being returned to the central bank. The expansion of the deposit system will afford a means to compensate cash centres for the extra work involved.

Thirdly, the Bank of Finland believes an adequate level of competition on the wholesale cash market will ensure the efficiency of wholesale activities. The Bank will therefore ensure that its services are open and equal for all present and possible future professional wholesale customers. Even the threat of competition may foster market efficiency.

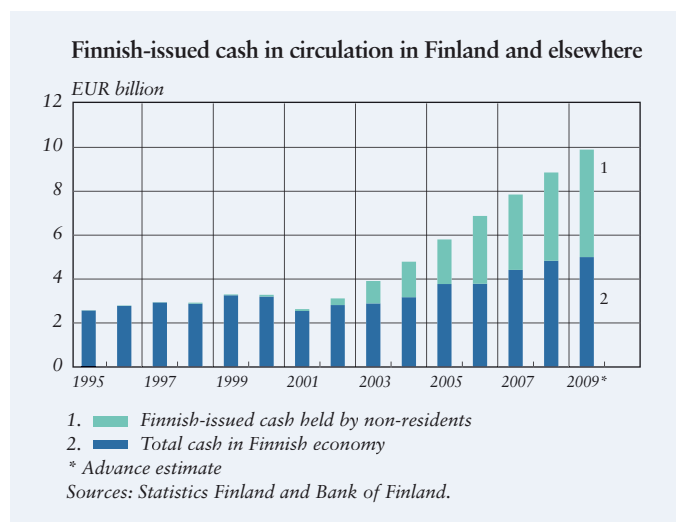
The planned changes will mean a slight increase in the role of professional cash supply operators in Finland's cash supply system. At the same time, the Bank of Finland's service level will remain more or less unchanged as a result of the expanded role of the deposit system. Although this will involve costs for the central bank, the overall effect of the changes will be beneficial for society as a whole. Viewed internationally, Finland already has an efficient cash supply system, and the planned changes will make it more efficient still.

Cash remains a popular means of payment

If we examine the trends in cash use in Finland, we see that cash is still a key means of payment, although the popularity of card payments has continued to grow strongly in recent years.

Compared with the era of the markka, the sustained strong growth in the issue of euro banknotes in Finland has been a surprise. The value of banknotes issued has tripled since the introduction of the euro, although the amount of cash in active use in Finland is not estimated to have grown so much (Chart 4). This is mainly due to the phenomenon of banknote migration: the movement of banknotes out of the country. There are many reasons for this, including tourism, retail purchase of cars abroad for import into Finland, other large purchases in euro area countries, wage payments to foreign workers and, possibly, the timber trade. In principle, some cash may also end up in cash reserves, although there is no direct empirical evidence, eg from consumer surveys, of a growth in cash savings in Finland.

Chart 4.



The oldest age groups prefer cash, while the young use payment cards.

Cash still remains popular as a means of payment because it has certain important properties that electronic means of payment cannot displace. It does not require an electronic payment terminal, and it allows easy transfer of purchasing power from one place to another without external costs. Cash allows easy payment or transfer of funds from one person to another without the need for tools or equipment, which is not possible using electronic means of payment. Moreover, for small sums, cash is generally the fastest means of payment. Another difference relative to cards is anonymity. Cash can also serve of itself as the most liquid possible means of saving, and one that is not vulnerable to eg banking crises or deposit guarantee restrictions.

Card payments and cash complement each other

The dominant forms of retail payment are cash and card payments. In terms of their properties these represent very different forms of payment and payment services. Card payments have expanded their role as the most common form of consumer payment in Finland and currently account for 2/3 of retail payment transactions, while the share of cash payments has declined to around 1/3.

Cash has only lost its position as the dominant form of retail payment in Finland in the past few years. In many euro area countries the

situation is moving in the same direction, but with a slight time lag, although eg Germany and Austria are still very markedly cash payment countries. Consumer surveys indicate the use of cash is also a generational issue: the oldest age groups are still persistent users of cash, while young people already predominantly use cards. Admittedly, to some extent the difference can be explained by different motives for using cash.

Card payments are markedly a product of the private banking system, although cards can also be issued by a credit company or retail chain. Growth in the number of outlets accepting cards, faster payment confirmation and improved payment security have in the past five years made card payments the form of retail payment most commonly used by consumers in Finland.

Cash and cards have their own typical areas of use.² Cash is the most common form of payment for small sums, and in most payment situations cash is still a credible alternative to payment by card. The average card payment is worth around EUR 35, and the average cash payment just over EUR 10. The use of cash normally requires the seller to keep a store of change. In contrast, card payments can be freely set at the precise sum due, which often

² See also Takala and Viren (2008) Efficiency and costs of payments: some new evidence from Finland. Bank of Finland Research Discussion Papers 11/2008.

simplifies and speeds up the payment process, as no time is needed for handling the change. At present, it would appear that the use of cash in payment transactions is still declining somewhat in face of the increase in payment by card. However, the popularity of these two forms of payment is presumably approaching some sort of equilibrium, whereby one or other method is used in different payment situations depending on the properties of each method and the person making the payment.

As an additional factor, changes in card payment tariffs, eg the card commission rates applied in shops, could lead to changes in traders' attitudes to the different means of payment. For the above reasons, the future of cash supply cannot be forecast independently of changes in card payments.

Finland's cash supply stands up well to comparison

International comparisons reveal that Finland has an efficient, high-quality system of cash supply. One example of this is the centralised countrywide network of ATMs, which none of the large euro area countries have managed to construct. Although the Bank of Finland's operative tasks in cash supply have been steadily declining, Finland's cash supply nevertheless remains in competent hands, as the activities of cash transporters, cash centres and other

private operators in the cash supply system are highly reliable and professional.

Retail traders also play a considerable role in the cash cycle. After all, banknotes withdrawn from ATMs mainly end up on the shop counter. Nor can we rule out the possibility that retailers will in future play a more significant role in the entire cash supply cycle. This is worth taking into account in designing the overall system of cash supply and setting the level of service provided by the central bank.

The Bank of Finland endeavours to treat different means of payment equally. It is essential that the central bank set its participation in cash supply in such a way that the costs of using cash remain reasonable without the need for special subsidies. It is also important that central bank services in wholesale cash supply activities are available to all on the same terms. In the final analysis, competition (or its threat) already ensures an efficient national cash supply cycle.

Keywords: cash, cash supply, cash cycle, deposit system, service level

