NORGES BANK

Annual Report on Payment Systems

2006

May 2007

Norges Bank's Annual Report on Payment Systems

Norges Bank is responsible for promoting robust and efficient payment systems in accordance with the Norges Bank Act and the Payment Systems Act. The Norges Bank Act states that Norges Bank shall promote an efficient payment system in Norway and vis-à-vis other countries. The Payment Systems Act gives Norges Bank a special responsibility for the authorisation and supervision of systems for clearing and settlement of money transfers between banks.

Norges Bank monitors the payment systems in order to identify factors that may weaken the stability of the financial system. The work is primarily aimed at minimising risk in the clearing and settlement systems, but Norges Bank also monitors important trends in the payment system as a whole. Furthermore, Norges Bank provides for secure and efficient settlement of payments between banks in their accounts in Norges Bank and supplies the society with banknotes and coins in a way that promotes an efficient payment system.

The **Annual Report on Payment Systems** explains Norges Bank's oversight of important payment and settlement systems. The report has been issued since 1988 and gives a yearly update of trends and prices in payment systems.

The 2006 report is divided into five chapters. The first four chapters are largely about customer-oriented services. Chapter 5 and the Appendix to the report deal with Norges Bank's oversight of interbank systems. The report also contains a statistical annex with accompanying explanations.

Norges Bank's Annual Report on Payment Systems is published annually. The report is available on Norges Bank's website: www.norges-bank.no

The statistical annex is also available in Excel format on Norges Bank's website.

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Foreword

The Annual Report on Payment Systems explains Norges Bank's oversight of important payment systems and of the developments in payment systems in Norway and abroad. This year's report is the twentieth issue. Since the first report was published, paper-based payment services have been replaced by electronic services. In 2006, 95 per cent of the payments with deposit money in Norway were transferred with electronic payment instruments. Norwegians are constantly increasing their use of payment cards and Internet banking. This trend helps make the Norwegian payment system more efficient.

In an efficient payment system, security is important. It is necessary so that customers have confidence in the payment services that the banks offer. Increased use of electronic payment services requires that the banks continue to develop solutions that are practical for the customers and that help prevent fraud. Although the amount of fraud in electronic payment services is low in Norway, events in 2006 have shown that it is important that the banking industry focus its attention on this problem.

Norges Bank oversees risk in the key payment and settlement systems. The purpose of this is to ensure that the systems are organised to ensure financial stability. A smooth-functioning interbank system is also necessary for efficient customer-oriented payment services. Norges Bank has assessed the most important interbank systems in Norway against international recommendations. The systems have been found to be of high quality, and they meet the recommendations with only minor reservations. The systems are practical for the users, and mechanisms have been established to limit the risk.

Svein Gjedrem

Annual Report on Payment Systems 2006

The cut-off date for this report was 24 April 2007

1. The payment system in Norway

The payment system in a country encompasses all methods and arrangements that can be used to transfer means of payment. Means of payment are money in the form of cash or deposit money. Cash is a claim on the central bank. Deposit money is deposits in an account in a bank and thus a claim on that bank. Payment instruments, such as giros and payment cards, are used in order to gain access to means of payment.

1.1 Cash

Payments with cash entail that a payer turns over banknotes and coins to the payee. Thus, cash is a payment instrument in addition to being a means of payment.

Norges Bank is responsible for seeing that Norwegian banknotes and coins have properties that enable them to function well as means of payment in different contexts. The denominations used and the quality must be suitable. The banknotes and coins must have elements that make them extremely difficult to counterfeit, and it must be easy to distinguish genuine banknotes and coins from counterfeit ones.

Both Norges Bank and the other banks take part in the cash distribution. The banks receive cash from the Central Bank and can return cash that they do not need. They provide cash to and receive cash from their customers. The banks also distribute cash among themselves. They have collaborated on the establishment of private cash depots that distribute and temporarily store cash at sixteen locations throughout the country. Norges Bank now plays the role of wholesaler in cash handling.

1.2 Deposit money

The system for payment services is a system based on standard conditions for the transfer of money from or between customer accounts in banks and finance companies when the transfers are based on the use of payment cards, numeric codes or some other form of independent user identification issued to an indefinite group of people.

Interbank systems are systems based on common rules for clearing, settlement or the transfer of money between credit institutions.

Source: Payment Systems Act (1999)

Deposit money is usually transferred with electronic payment instruments. When a payment order is to be conveyed between customers who have accounts in their respective banks, claims arises between the banks. These claims will be cleared and settled through the interbank system. The settlement between the banks occurs by registering the banks' accounts in a settlement bank. Norges Bank is the ultimate settlement bank for payments between the banks.

Norwegian banks have collaborated to establish a joint infrastructure for payments with deposit money. This infrastructure is composed of common regulations, standards and a system for clearing and settlement[1] (The Norwegian Financial Services' Association [FNH] 2006). Among other things, these agreements regulate the ways in which credit and debit transfers (giros) and card and cheque transactions are to be executed. The standards for Norwegian payment services are established, maintained and further developed by the Banks' Standardisation Office (BSK).

1.3 An efficient payment system

Pursuant to the Norges Bank Act, Norges Bank is responsible for promoting efficient payment systems domestically and vis-à-vis other countries. In an efficient payment system, payments are effected quickly, securely and at low cost. When the prices and properties of the various payment instruments are well-known, the users will choose the solutions that are most satisfactory to them on the whole. If the prices that the users must pay reflect the difference in the costs of providing the services, the users will be encouraged to choose the payment instruments that give a low use of resources.

For many years, Norwegian banks have charged fees for the payment services they offer. This has given the banks revenue from payment transactions and has induced the customers to choose cost-efficient payment instruments to a greater extent. A high price per transaction for paper-based payment services and a low price for electronic payment services, for example, have accelerated the trend whereby electronic payment services make up a steadily increasing share of the transactions (Humphrey, Kim and Vale 2001).

The banks collaborate on joint solutions. This collaboration has made it possible to utilise economies of scale and, when considered in isolation, has tended to lower costs in payment systems. With joint solutions, all Norwegian banks can offer efficient payment services to their customers, and money can be efficiently transferred between customers in all Norwegian banks. The price of these transfers and the speed with which they are executed, do not depend on the bank in which the payee is a customer. On the other hand, the banks' collaboration can also be an obstacle to competition (see, for example, Nordic Competition Authorities 2006).

An efficient payment system is characterised by an expedient distribution between the use of cash and deposit money. Electronic payment instruments are increasingly being used instead of paper-based payment instruments. Since the banks also play a considerable role in the cash supply, they are encouraged to offer payment solutions that contributes to overall efficiency.

[1] The Norwegian Interbank Clearing System (NICS) is the most important clearing system and is part of the joint infrastructure. The system is especially discussed in Chapter five.

Notification obligation for systems for payment services

The Payment Systems Act imposes on banks and finance companies a notification obligation to Kredittilsynet, the Financial Supervisory Authority of Norway, for the establishment and operation of systems for payment services.

In the autumn of 2004, Kredittilsynet issued a circular with questions that the banks must answer in connection with the introduction of new payment systems or changes in the current system.

It took some time before the enterprises were able to establish routines for complying with the notification obligation, but in 2006 there has been a considerable increase in the number of received notifications. In Kredittilsynet's opinion, the information from the notifications received is an important contribution to help the supervisory authorities keep updated about activities in connection with the payment systems that are planned or have been initiated.

Kredittilsynet assesses adjustments of the arrangement to make the notification obligation more efficient.

Source: Kredittilsynet

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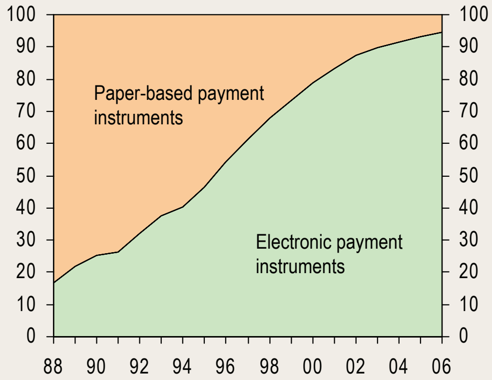
The Norges Bank Act of 1985 assigned Norges Bank responsibility for promoting efficient payment systems domestically and vis-à-vis other countries. Three years after the Act came into force, the first report on the developments in payment systems (for 1987) was issued. The report provided information about the bank's work in this field and about the developments in Norwegian and international payment systems.

In the first report, certain matters of principle with regard to payment systems were discussed. It was important to Norges Bank a coordinated, nationwide system of electronic payment systems would develop. The commercial banks and savings banks had chosen different technologies in their payment cards. Therefore, it was pointed out in the report that the banks had to come up with solutions for coordinating their systems. In addition, issues related to the pricing of payment services were discussed. The banks had revenue from payment transactions in the form of fees, float and interest rate margins. Norges Bank was of the opinion that this kind of unstructured jumble of revenue was not expedient. The coordination problems between the Postal Giro Service (Postgiro) and the Bank Giro Service (Bankgiro) were also discussed.

Use of paper-based and electronic payment instruments 1988-2006. Transactions in per cent



Source: Norges Bank.

In the preparatory work for the Norges Bank Act, it was pointed out that cash and paper-based payment transactions would probably be used less. The statistics that have been presented in the twenty annual reports have shown that this has indeed been the trend. Electronic payment systems have almost completely taken over from manual payment instruments. Cheques are now used very little, and new methods are steadily being developed to utilise deposit money for payments. The volume of cash as part of the money supply (M1) has decreased.

Norwegian payment systems since 1987 - some important events

1987: The two banking associations agree to partly coordinate different technology for payment terminals in retail trade.

1990: The commercial banks and savings banks' electronic card systems are coordinated. The Banking Law Commission is established.

1991: The Postal Giro Service's revenue base is reduced as a result of efficiency improvements in the central government's financial management. Report no. 17 (1991-92) to the Storting on the future regulatory framework for postal services reveals, among other things, that the Postal Giro Service (Postgiro) may receive revenue from prices for payment systems. The two banking associations and Postgiro agree to exchange electronic transactions.

1992: Mail giro is introduced. The working group ELBET Norge submits its report. BankAxept AS commences its operations. The magnetic stripe becomes the standard on BankAxept cards.

1993: Customers with a Norwegian Post Office Savings Bank card (Postsparebankkort) gain access to the banks' payment terminals.

1995: The Norwegian Post Bank and Postgiro merge. In 1996, the merged units are given the name Postbanken. Postbanken is integrated into the banks' entire joint infrastructure. NICS commences its operations. The Agreement-based giro (Avtalegiro) is introduced.

1996: A common form replaces the former postal giro and bank giro forms. The first Internet bank solutions are put into use.

1997: "Cash-back" is launched in general. Norges Bank's Settlement System (NBO) is established.

1999: Real Time Gross Settlement (RTGS) is established in NBO. The number of electronic giros exceeds the number of paper-based giros.

2000: The Payment Systems Act and the Financial Contracts Act come into force. Electronic billing solutions are offered by BBS and AS EDB.

2001: Gjensidige NOR Sparebank, DnB and the NICS Operations Office are authorised to operate interbank systems pursuant to the Payment Systems Act. Norsk Kontantservice AS (NOKAS) is established.

2002: The Act relating to Electronic Money Institutions is passed.

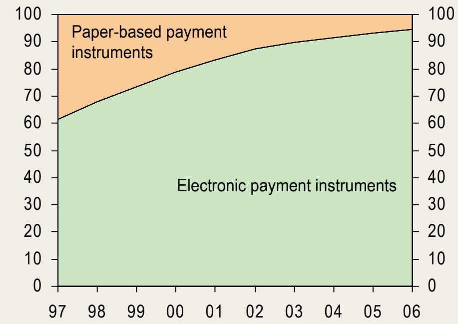
2003: The banks launch BankID for secure identification on the Internet.

2. Payment instruments

About the statistics
Norges Bank has gathered and published statistics about important trends in the payment systems since 1987. As of 1 January 2007, the statistical compilation has been transferred to Statistics Norway.

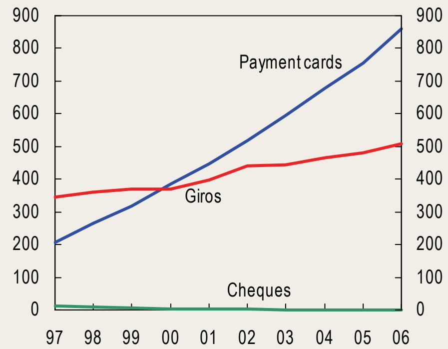
The statistics are gathered yearly, and there may be revisions of previously published statistics. In particular, the figures for cashback in connection with goods purchases and the number of payment terminals have been revised down after the revisions in 2006.

Chart 2.1 Use of paper-based and electronic payment instruments 1997-2006. Transactions in per cent



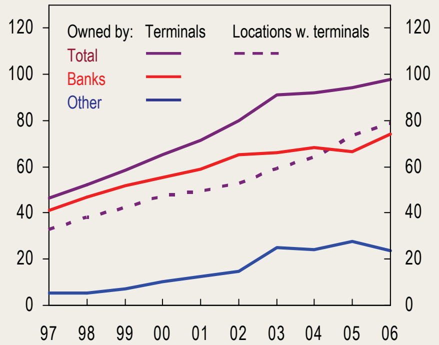
Source: Norges Bank.

Chart 2.2 Payment instruments 1997-2006. In millions of transactions



Source: Norges Bank.

Chart 2.3 Number of payment terminals and locations with payment terminals 1997-2006. In thousands



Source: Norges Bank.

The transition from paper-based to electronic payment instruments[2] continued in 2006. Private individuals and companies use Internet banking more than before, and they are increasingly making use of services such as electronic billing (eFaktura) and direct debits (Avtalegiro). Simultaneously, the use of paper-based services is declining. As a result of this trend, the electronic payment instruments' share of the total transactions has increased, see Chart 2.1.

A total of nearly 1.4 billion payments with deposit money were executed in the customer-oriented parts of the payment system in 2006 (see Chart 2.2). That is an increase of 11 per cent from the previous year. The number of payment transactions where cash was used is not known. The total value of cash in circulation increased by 7 per cent in 2006, but as a percentage of household consumption, the cash in circulation remained unchanged. Cash's share of the total available means of payment (M1) has decreased (see also Chapter 4).

2.1 Access to cash and deposit money

Cash is available from ATMs, payment terminals in shops, bank branches and Norway Post's outlets. Up to end-2003 the number of ATMs increased. Thereafter, the number has slightly declined. At start-2007 the banks had 1 259 branches in Norway. Norway Post had 1 511 branches, of which 1 184 were Post-in-Shops and 24 were business centres. The number of branches changed insignificantly from the previous year.

178 million cash withdrawals with payment cards in ATMs and payment terminals in connection with goods purchases were registered in Norway in 2006. More than half of these cash withdrawals were made in ATMs. A total of NOK 144 billion in cash was withdrawn. About 80 per cent of this value was withdrawn from ATMs. The average amount withdrawn from an ATM was about NOK 1 200 in 2006.

The number of payment terminals (EFTPOS) and the number of locations with terminals accepting payment cards continued to increase (see Chart 2.3). Most of the terminals are owned by the banks and rented out to shops. Other terminals are owned by grocery chains and oil companies.

2.2 Cash

Banknotes and coins in circulation
Cash circulation declined slightly from 2000 to 2003, but has risen in the last three years. In 2006, the circulation increased

[2] See the definitions at the end of the report.

by a little over 7 per cent to an annual average of NOK 49.2 billion (see Chart 2.4). Relative to the narrow money supply (M1), the cash circulation has decreased (see Chart 2.5).

The average value of banknotes in circulation was NOK 44.5 billion in 2006, which is more than 7 per cent higher than in 2005. Figure 2.6 shows the composition of notes in circulation. The average value per banknote in circulation was NOK 404 at end-2006.

The value of coins in circulation has increased steadily each year for the last 20 years and averaged NOK 4.7 billion in 2006. The increase from 2005 was slightly greater than 4 per cent. In the past year, the composition of denominations of coins in circulation has remained nearly constant (see Chart 2.7). The average value per coin in circulation was NOK 2.90 at end-2006.

Counterfeit money

The number of seized counterfeit notes increased in the second half of the 1990s and peaked in 2000. In 2004, the upgrading of low-denomination notes in Series VII was completed with the launch of the upgraded 50-krone note. Since then the volume of counterfeit notes has fallen to a very low level (see Chart 2.8). In 2006, about 2.3 counterfeit notes per 1 million notes were found. This is a decrease relative to 2005. The amount of counterfeiting in Norway is extremely low compared with other countries. For example, total counterfeit notes in euro accounted for around 54 notes per 1 million in 2006 (ECB 2007).

2.3 Deposit money

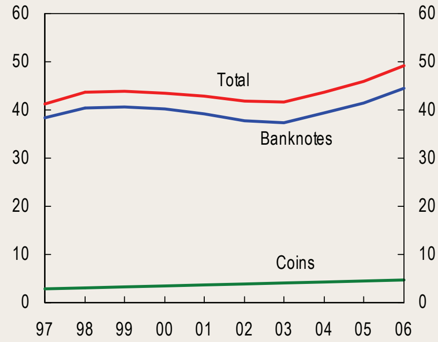
Giros

In 2006, giro payments accounted for 37% of payments using deposit money. The trend favouring electronic services over paper-based services continued (see Chart 2.9). Whereas the number of electronic giro transactions increased by 11 per cent to 458 million, the number of paper-based transactions decreased by 24 per cent to 52 million.

Electronic giro services for companies

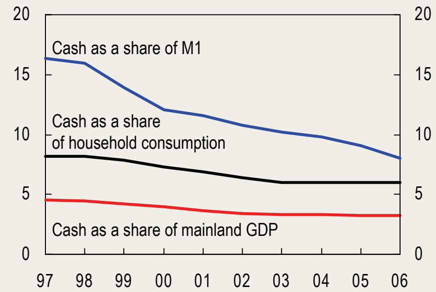
In 2005, a number of banks changed their offers to companies from terminals with fixed telephone lines to Internet banking. As a result, more companies used Internet banking solutions, while the number of company terminals decreased. This trend continued in 2006 (see Chart 2.10). The number of Internet banking agreements for companies more than quintupled in 2006 to almost 330 000. The number of Internet banking transactions for corporate customers rose by 54 per cent to about 148 million.

Chart 2.4 Cash circulation 1997-2006 Annual average. NOK billion



Source: Norges Bank.

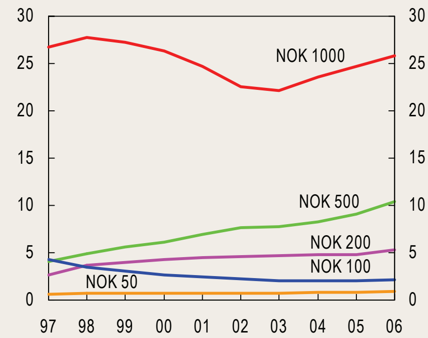
Chart 2.5 Value of banknotes and coins in circulation as a share of M1[1], household consumption and GDP. 1997-2006. Per cent



[1]M1 is the money-holding sector's holding of Norwegian banknotes and coins as well as the sector's deposits in current accounts in Norges Bank and in banks (in NOK and foreign currencies).

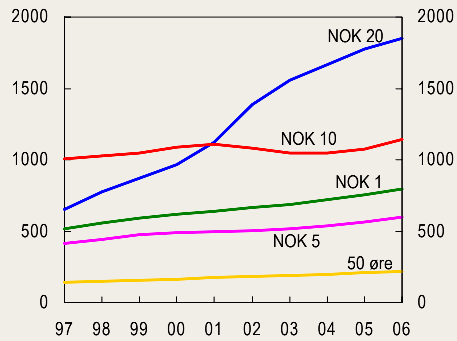
Sources: Statistics Norway and Norges Bank

Chart 2.6 Composition of banknotes in circulation. 1997-2006. Annual average. NOK billion



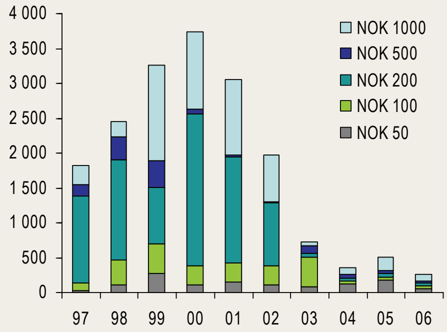
Source: Norges Bank.

Chart 2.7 Composition of coins in circulation. 1997-2006. Annual average. NOK million



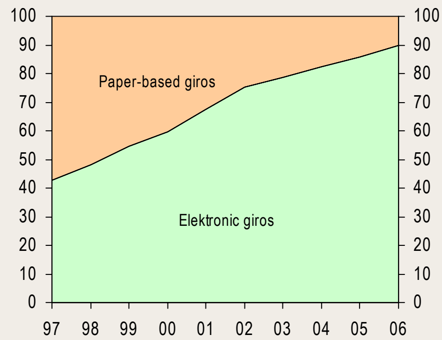
Source: Norges Bank.

Chart 2.8 Number of seized counterfeit notes. 1997-2006



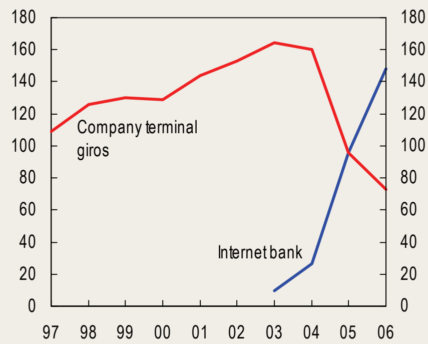
Source: National Criminal Investigation Service (Kripos)

Chart 2.9 Giro transactions 1997-2006. Share in per cent



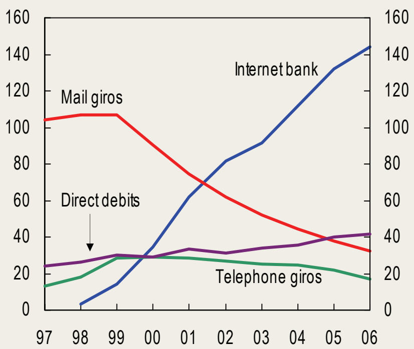
Source: Norges Bank.

Chart 2.10 Use of electronic giro services for companies 1997-2006. Millions of transactions



Source: Norges Bank.

Chart 2.11 Use of selected giro services for retail customers. 1997-2006. Millions of transactions



Source: Norges Bank.

Electronic giro services for retail customers

Retail customers are using Internet banking more than before. The number of Internet banking agreements for retail customers increased by 14 per cent in 2006 and is now nearly 3.7 million. Internet banking transactions for retail customers increased by 9 per cent to 144 million (see Chart 2.11).

According to a survey from the Norwegian Savings Banks' Association conducted by TNS Gallup, there were about 2.5 million Internet banking users in February 2006. Internet banking use varies with age. In the age group 25-32, 90 per cent say they use Internet banking, while the corresponding figure in the age group 66 and over was 26 per cent. The figures from the Norwegian Savings Banks' Association also reveal that Internet banking is used more and more frequently. Seven out of ten Internet banking customers now use Internet banking at least once a week.

The number of direct debit agreements between retail customers and companies – Autogiro and Avtalegiro – has increased gradually since 2000. From 2000 to 2006, the number of these agreements more than doubled. There were about 7.5 million of these agreements in 2006, and about 42 million direct debits were carried out.

The number of giro payments via telephone – telephone giros – has decreased since 2000. 16.9 million telephone giro transactions were conducted in 2006, which was 22 per cent less than the previous year.

Electronic billing, such as eFaktura from the Norwegian Banks' Payment and Central Clearing House Ltd. (BBS), is coming more and more into use. Statistics from BBS show that 9.6 million bills were paid with eFaktura in 2005, compared with 5.4 million the previous year. In 2006, the number of users of eFaktura rose from 460 000 to 680 000.

Paper-based giro services for retail customers

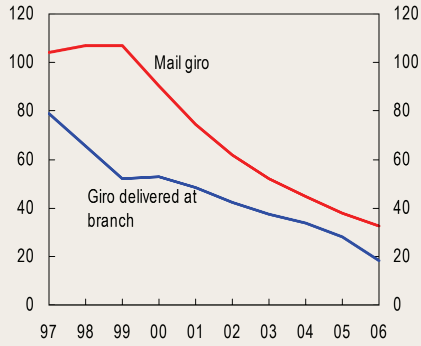
For several years now, use of paper-based giro services has been falling. From 2005 to 2006, the number of mail giro agreements decreased by 17 per cent to about 1.2 million. In the same period, the number of mail giro transactions decreased by 14 per cent to 33 million transactions.

The number of paper-based giros delivered at branch decreased by 35 per cent in 2006 to 18 million transactions (see Chart 2.12). The value of these transactions decreased by 6 per cent to NOK 132 billion. The total number of paper-based giros delivered at branch amounted to only 4 per cent of the total volume of giro transactions in 2006.

Payment cards

Use of payment cards is steadily increasing. In 2006, 965 million transactions (including cashback) were conducted with payment cards issued in Norway. This is an increase of 12 per cent compared with the previous year. It entails that more than 200 transactions per Norwegian were conducted with payment cards. The value of the total use of these cards increased by 6 per cent to NOK 512 billion. The average value of a card transaction was about NOK 530. Nine out of ten card transactions were in connection with goods purchases.

Chart 2.12 Use of paper-based giro services for retail customers. 1997-2006. Millions of transactions

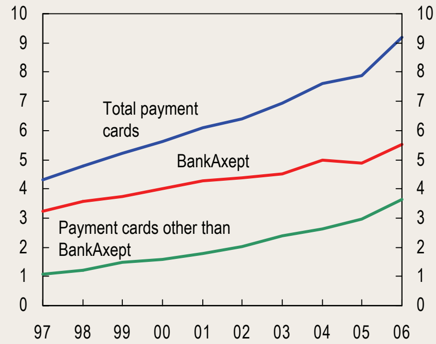


Source: Norges Bank.

Debit cards

The Norwegian version of a debit card is called BankAxept. 5.5 million BankAxept cards have been issued (see Chart 2.13). These are often combined with international cards with a debit function, often Visa. A total of 4.6 million BankAxept cards in Norway have a debit function linked to an international card system. A VISA part and a BankAxept part of a card may be regarded as two functions. Therefore, the number of functions (see Chart 2.14) will be higher than the physical number of debit cards.

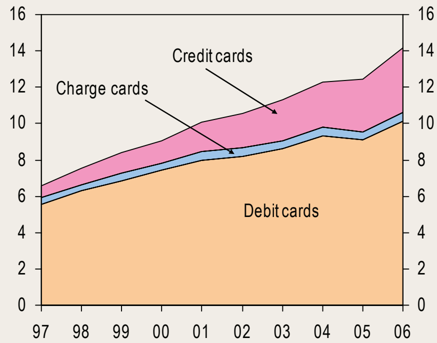
Chart 2.13 Number of issued payment cards. 1997-2006. Millions of cards



Source: Norges Bank.

About 94 per cent of cashback and goods purchases with Norwegian payment cards in Norway are made with debit cards. The total volume of transactions with debit cards increased by 11 per cent in 2006 (see Chart 2.15) to 904 million, while the value increased by 4 per cent to NOK 448 billion. The average amount per transaction has decreased from NOK 529 to NOK 496. More than 90 per cent of the transactions with debit cards were made with BankAxept cards. The average amount of a goods purchase with a BankAxept card was NOK 365 in 2006.

Chart 2.14 Issued payment cards by function. 1997-2006. Millions



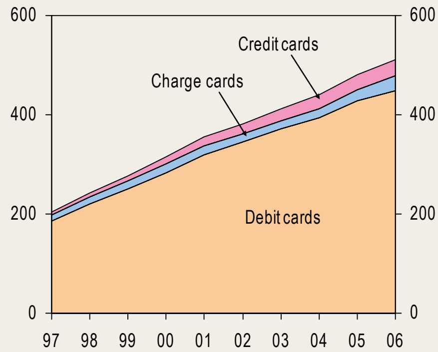
Source: Norges Bank.

Credit and charge cards

About half a million cards with billing functions and 3.5 million cards with credit functions are registered in Norway. The number of credit and charge cards issued is somewhat lower than the number of functions because some of the cards function both as domestic credit cards and international payment cards. Most of the cards are affiliated with international card companies. The number of domestic credit cards was about 550 000 in 2006.

Credit and charge cards constituted 6 per cent of the card transactions involving cashback and goods purchases in 2006. 61 million goods purchases and cashback transactions were conducted with these cards in 2006 (see Chart 2.15). Domestic credit cards accounted for 6.5 million of these transactions.

Chart 2.15 Use of different payment cards for goods purchases and cash withdrawals. 1997-2006. NOK billion



Source: Norges Bank.

The value of goods purchases and cashback with credit and charge cards increased by 22 per cent to NOK 63 billion. The average value per transaction was higher than for debit cards. The average value was about NOK 1 040 in 2006.

Cheques

From the time that current accounts were introduced in the 1960s, the use of cheques rose steadily, peaking at 110 million cheques per year in 1984. Since then, use has declined rapidly. 700 000 cheques were written in 2006. The average amount for cheques is around NOK 23 000.

The extent of fraud

At present, comprehensive statistics for fraud with electronic payment instruments in Norway are not collected, but several participants do watch developments closely. The Norwegian Financial Services Association (FNH) gathers data that cover about two-thirds of the Norwegian banks measured in total assets. The extent of fraud and attempted fraud are still low in Norway. The biggest losses involve fraud with payment cards. These losses are estimated at about NOK 150 million for the whole banking industry in 2006. This constitutes about 0.03 per cent of the total turnover with payment cards. The losses have increased in the last two years, also when measured as a percentage of the total turnover.

Security in Internet banking

The use of Internet banking has increased rapidly in recent years. 7 out of 10 retail customers now use Internet banking on a weekly basis or even more often according to the Norwegian Savings Banks' Association's Internet banking survey. Private individuals transferred NOK 585 billion through Internet banking in 2006. The increase in the use of Internet banking requires that the banks continue to develop solutions that ensure efficient access to deposit money and that prevent fraud. So far, there have been few problems with security in Internet banking, but some events in 2006 show that there is a risk both of fraud and that the users will make mistakes in Internet banking.

Some Internet banking payments were initiated through the Internet banking systems by software that had been installed on the bank customers' computers without the customers noticing. This software may have been sent to the individual computer by e-mail, or it may have been downloaded from the Internet. This program code monitors the use of the personal computer. When the customer logs onto the Internet bank, the programme generates transactions that the customer cannot immediately see.

The payees of these transactions may be intermediaries who have made their accounts available and who transmit the money on to others in return for a cut of the stolen funds. Many of these attempts at fraud were prevented by the Internet banking systems of the banks in question, but some payments were completed. Usually, the use of BankID or some other form of two-factor authentication is required when logging onto the Internet bank, but fraud has been committed despite these authentication mechanisms. Work is under way on measures, for monitoring and limiting the problem and for developing solutions to prevent these attacks.

In the autumn of 2006, a bank customer wrote a payee's account number incorrectly so that the payment went to the wrong payee. The Ministry of Finance asked Kredittilsynet, the Financial Supervisory Authority of Norway, which is responsible for the supervision of the systems for payment services, to study the matter. Kredittilsynet found that the Norwegian Internet bank solutions function adequately for the most part, but saw a need for measures to limit problems that may arise through incorrect use or errors committed by Internet banking customers.

Kredittilsynet points out that the banks do not require that their customers must have special prior knowledge in order to use Internet banking, nor do they offer any form of training other than the text in the Internet banking agreement between the bank and the customer and the instructions that are provided in the Internet banking portal. Thus, Kredittilsynet requires that the solution be self-explanatory for the most part and that it have sufficient built-in controls to prevent the user from making any serious errors. The Norwegian Financial Services Association and the Norwegian Savings Banks' Association made a list of 13 control functions for Internet banking in consultation with the Banks' Standardisation Office (BSK). Kredittilsynet has found that the banks have followed up these measures for the most part and for the time being will not recommend that any instructions be drawn up for general rules relating to security in Internet banking.[1]

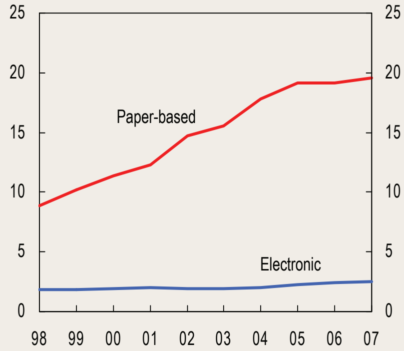
1 See the press release from Kredittilsynet dated 19 April 2007.

About the statistics
For several years, Norges Bank has conducted a survey of list prices for a number of payment services. This survey includes both small and large commercial and savings banks.

The 24 banks in the survey had a total of 86 per cent of Norwegian banks' deposits in current accounts on 30 November 2006. The average prices are weighted with the banks' deposits in these accounts.

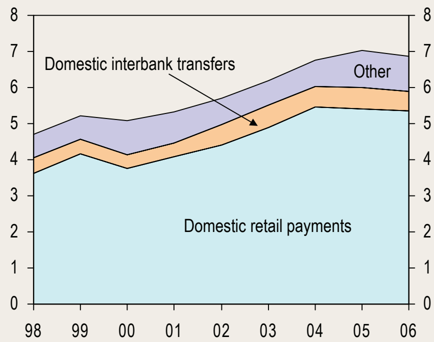
The list prices are gathered on 1 January each year and appear in the statistical annex.

Chart 3.1 Average list prices for electronic and paper-based payment services. 1998-2007. In NOK.



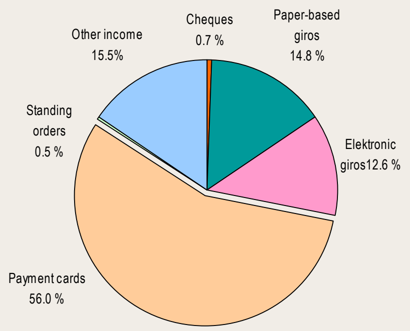
Source: Norges Bank.

Chart 3.2 Banks' income from the payment system. 1998-2006. In NOK billion



Source: Norges Bank.

Chart 3.3 Income from retail payment services by service type. 2006. Per cent[1]



[1]Income shown in the chart totals NOK 5.3 billion

Source: Norges Bank.

3. Prices in the payment system

The prices in the payment system have changed little from 2005 to 2006. The prices of electronic payment services have long been lower than the prices of paper-based services, which have increased considerably in recent years (see Chart 3.1). This price trend has resulted in increased use of electronic payment services. The difference in price is greater than the list prices suggest because more and more banks are offering discounts on electronic payment services in their customer programmes.

3.1 The banks' revenue from payment systems

The banks receive about one third of their operating revenue excepting net interest and credit revenue from payment systems. This is equivalent to one tenth of their total revenue. The revenue from payment services has increased with time, but declined in 2005 and in 2006 (see Chart 3.2). The drop in the last two years was mainly due to reductions in the revenue from electronic giro services and an increase in the extent to which customers use services with low prices. The banks' costs for payment systems were last studied by Norges Bank in 2001 (Gresvik and Øwre, 2002). That survey showed that the costs of providing domestic payment services were NOK 5.9 billion.

The banks had NOK 5.3 billion in revenue from retail payment services in 2006. More than half of this revenue came from payment cards (see Chart 3.3). Electronic and paper-based giro services are also important sources of income. The revenue the banks receive from fees in customer programmes, are not always entered as revenue from payment systems since the customer programmes also include other services.

3.2 Customer programmes

The price trend shown in Chart 3.1 is based on list prices (see text in margin). Nearly all of the banks in the survey offer the customers a discount on payment services through various customer programmes. Customers can have access to these programmes when they satisfy certain conditions regarding customer relations and customer group and/or by paying an annual, quarterly or monthly fee. Surveys conducted by the Norwegian Financial Services' Association (FNH) in 2006 and the Norwegian Savings Banks' Association in 2007, showed that nearly 40 per cent of bank customers are signed up to a customer programme with their main bank.

Therefore, the trend in list prices does not give a complete picture of the prices in the payment system. In 2007, in collaboration with the Norwegian Financial Services Association (FNH) and the Norwegian Savings Banks' Association, Norges Bank has gathered information about prices of payment services in these customer programmes (see text in margin). The gathering of information is limited to prices of electronic payment services because the discounts mostly apply to these services.

More than half of the banks in the survey charged a fee for participation in a customer programme. The prices vary among the banks and among the different programmes in the same bank. Among the banks that charge a fee, whether alone or in combination with other criteria for participation, the annual fee ranged from NOK 120 to NOK 1 500. The average fee was about NOK 670.

Customer programmes are often designed so that the customers are rewarded for using several financial services in the same financial group. These programmes can make it more difficult for customers to compare prices between banks, and hence their incentive to switch banks may be reduced, particularly when the customer uses several of the financial services included in customer programmes. Nevertheless, the Norwegian Savings Banks' Association's Internet banking survey reveals that 75 per cent of the customers who take part in customer programmes think it is easy to switch banks.

The prices for executing a transaction are discussed in the following section. If there are any fees for participation in the customer programmes or annual fees for payment cards, they have not been taken into consideration.[3] Norges Bank only has figures for the prices in customer programmes for 2007. The trend in these prices over a period of time is therefore not discussed. The charts show the prices for customers who are not in a customer programme.

Survey of the prices in customer programmes
In 2006, Norges Bank, in collaboration with the Norwegian Financial Services' Association (FNH) and the Norwegian Savings Banks' Association, has gathered data on prices in payment services in customer programmes.

This survey includes direct debiting (Avtalegiro and Autogiro), Internet banking payments and telephone giros, payment cards and ATM withdrawals.

The part of the transactions that is associated with different customer programmes is used to calculate average prices. Since not all banks have been able to report this information, the survey is somewhat smaller than the one for list prices. Measured in total assets, the differences are not substantial.

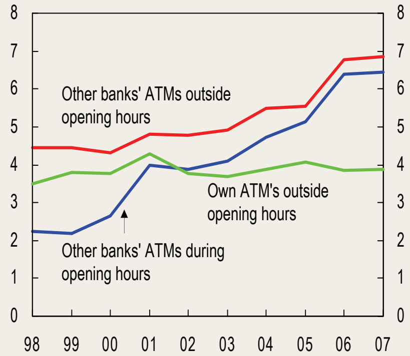
Some of the banks have used estimates for the number of transactions in their customer programmes. This means that the calculated prices are not completely certain.

3.3 Prices for cash withdrawals

In all banks, it is free of charge for customers to withdraw cash from their own bank's branches or from ATMs during opening hours and to withdraw cash in connection with goods purchases. Most banks charge a fee for cash withdrawals from ATMs outside opening hours. The average list price for this service has been relatively stable in the last five years. The list price was NOK 3.87 on 1 January 2007.

Most ATMs in Norway belong to the banks. The owner of an ATM receives an interbank fee of NOK 6.90 when

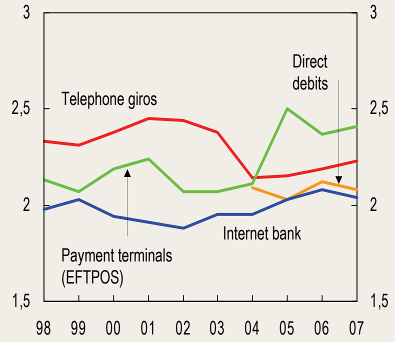
Chart 3.4 List prices for ATM withdrawals. 1998-2007. Weighted average for all banks. In NOK.



Source: Norges Bank.

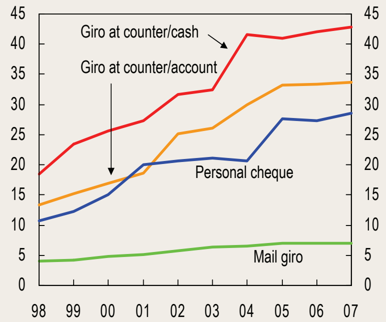
[3] The banks usually charge an annual fee for payment cards that combine BankAxept with an international card. On the average, the fee was NOK 262.70 on 1 January 2007.

Chart 3.5 List prices for electronic payment services for retail customers. 1998-2007. Weighted average for all banks. In NOK



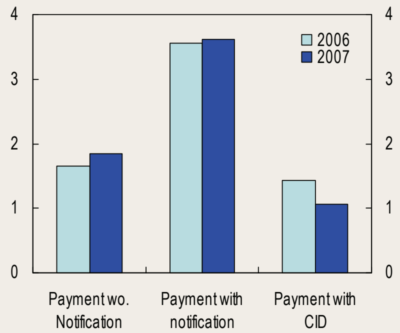
Source: Norges Bank.

Chart 3.6 List prices for paper-based payment services for retail customers. 1998-2007. Weighted average for all banks. In NOK



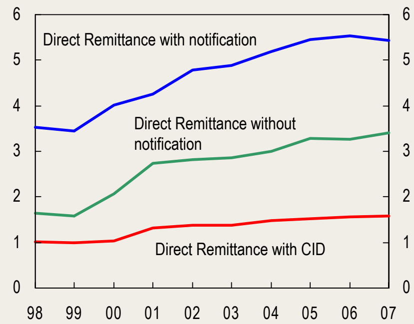
Source: Norges Bank.

Chart 3.7 List prices for Internet banking for businesses. 2006-2007. Weighted average for all banks. In NOK



Source: Norges Bank.

Chart 3.8 List prices for Direct Remittance for businesses. 1998-2007. Weighted average for all banks. In NOK



Source: Norges Bank.

a BankAxept card that is issued by another bank is used to withdraw cash. The bank that has issued the card is charged this fee. Almost all of the banks in the survey charge the customer a fee when money is withdrawn from other banks' ATMs. The average list price was still slightly less than the interbank fee (see Chart 3.4). Bank customers in Norway can also withdraw cash at the counter in banks other than the one in which they have an account. This service is relatively costly and is therefore rarely used.

The banks that offer a discount for ATM withdrawals, give an average discount of over 85 per cent for withdrawals outside opening hours and for withdrawals from other banks' ATMs. Relatively few banks have included ATM withdrawals from other banks' ATMs in their customer programmes.

3.4 Prices for using payment instruments

Prices of services for the retail market

Prices of electronic services

The average list price for electronic payment services for retail customers has been between NOK 2.00 and NOK 2.50 for the last 10 years. None of the list prices for the services that are included in the survey have altered more than 2 per cent in 2006 (see Chart 3.5). The most inexpensive of these services is still paying bills via the Internet.

Telephone giros, agreement-based giros and paying bills via the Internet are cheaper in the banks' customer programmes. Norges Bank's estimates show that if the prices and transaction volume in customer programmes are included, the weighted prices for these services are reduced by more than 50 per cent.

The average list price for transactions with payment cards in shop terminals (EFTPOS) was NOK 2.41 at start-2007. The banks give big discounts for these services in the customer programmes. Norges Bank's estimate shows that on average the prices in customer programmes are almost 90 per cent lower than the list prices. If the prices and transaction volume in their customer programmes are taken into consideration, the total average price is 50 per cent lower than the list price.

Prices of paper-based services

The prices of paper-based services for retail customers have increased sharply in the last 10 years (see Chart 3.6), but the price increase has levelled off in the last two years. The most expensive paper-based service in the retail market is giros paid with cash at the counter. The cheapest of these services is mail giro. Very few of the banks in the survey offer prices for paper-based services in their customer programmes that are different from the list prices.

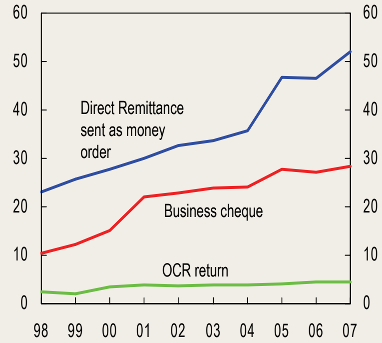
Prices [4] of services for the corporate market

The electronic payment services that the banks provide to the corporate market have increased moderately in price in recent years. As in the retail market, the most automated services generally have the lowest prices.

In recent years, most of the banks have started to offer Internet banking for companies. At the same time, many banks have ceased to offer payment solutions such as Company Terminal Giros and Direct Remittance. This change entails that payment services for businesses are cheaper to execute (see Charts 3.7 and 3.8).

The trend in list prices for paper-based services for businesses is shown in Chart 3.9. Many banks in the survey have ceased to list the prices of some of these services

Chart 3.9 List prices for paper-based payment services for businesses. 1998-2007. Weighted average for all banks. In NOK



Source: Norges Bank.

3.5 Prices of cross-border payments

Electronic payments in euro with BIC (Bank Identification Code) and IBAN (customer's International Bank Account Number) to EU and/or EEA countries are covered by the Euro Regulation (see text in margin). The price of this service was sharply reduced when the regulations were introduced, but in 2006 many banks in the survey have increased their price. The average price has increased by 5 per cent in the past year. The price of similar payments in Norwegian kroner follows the same trend. A cross-border transfer of Norwegian kroner was about 28 per cent more expensive than a transfer in euro on 1 January 2007. For all of the services, the level is still high compared with a domestic transfer. The more manual operations a transfer requires, the higher the price. Express transfers are more expensive than ordinary transfers. The prices of these services have not changed much over the period.

The prices of the above-mentioned payments are the prices paid by the payer. In many of the banks in the survey, there is also a charge for receiving a payment in foreign currency. The prices of receiving a transfer in euro from abroad have gradually become lower after the Euro Regulation was introduced in Norway. The prices were reduced again in 2006.

The international card systems effect payments without many manual operations. The prices for the use of such cards issued in Norway and used abroad vary. Norges Bank has not systematically gathered information about this.

BIC is an abbreviation for "Bank Identifier Code" and identifies the banks with their SWIFT addresses. **IBAN** is an abbreviation for International Bank Account Number.

The Euro Regulation

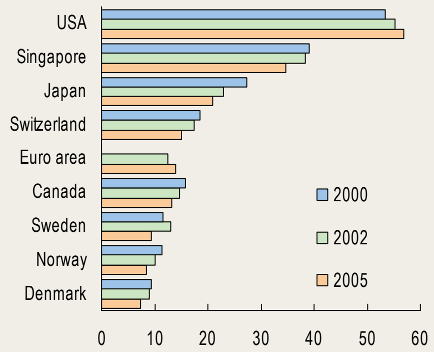
According to the Euro Regulation (Regulation 2560/2001), which came into force in Norwegian law on 1 January 2005, the prices of cross-border electronic payments in euro should not be higher than the equivalent domestic payments in euro.

[4] Any prices with discounts for corporate customers are not included in the figures.

4. Developments internationally

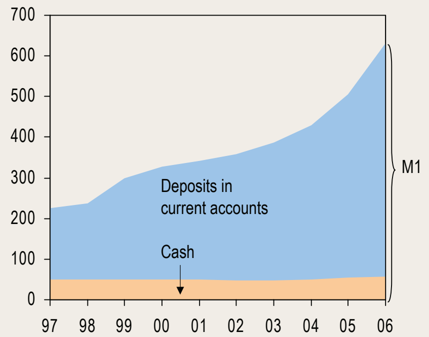
The use of means of payment and payment instruments varies from country to country. This is partly due to differences in the institutional structures, laws and regulations and the economic and technological development (ECB Blue Book 2006, Humphrey, et al. 1996). In the first part of this chapter, the payment pattern in Norway will be compared with the patterns in a selection of other countries. In the second part, the development of a single European payment area will be discussed.

Chart 4.1 Cash's share of means of payment (M1) in selected countries. Per cent



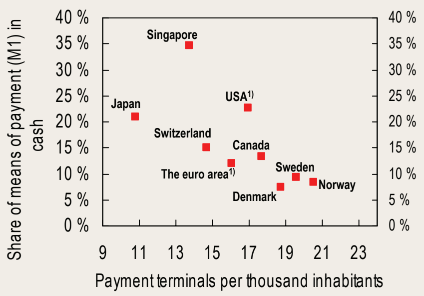
Source: Norges Bank, ECB Blue Book and BIS Red Book

Chart 4.2 Cash and means of payment (M1) in Norway. 1997-2006. NOK billion



Source: Norges Bank.

Chart 4.3 Cash's share of means of payment (M1) and number of payment terminals. 2005.



1) The USA and the euro area are adjusted for the estimated share of the currencies that are outside the country's borders.

Source: Norges Bank, ECB Blue Book and BIS Red Book

4.1 The payment pattern in different countries

In the Scandinavian countries, cash constitutes a low and steadily decreasing percentage of the available means of payment (M1), see Chart 4.1. The same trend is evident in other countries, even if cash constitutes a higher percentage of the means of payment. The USA is an exception where the cash percentage has increased. Since 1995, the nominal value of US dollar notes and coins has more than doubled (The Federal Reserve Board, 2006). The Federal Reserve Board estimates that between 50 and 70 per cent of the cash is outside the USA. The volume of banknotes and coins has also increased in the euro area. The EU Commission estimates that between 10 and 20 per cent of the volume of euros are outside the euro area (EU Commission 2007).

Cash's share of the total means of payment has decreased because the total volume of means of payment (M1) has increased much faster than the circulation of cash. None of the countries that are shown in Chart 4.1 had a lower nominal value of the volume of cash in 2005 than in previous years[5]. The trend in the nominal value of cash and other components of M1 for Norway is shown in Chart 4.2. While the value of cash in circulation has risen slightly, the available deposit money has increased considerably.

There seems to be a relationship between how well the infrastructure for the use of deposit money has been organised and how much cash will be used as a means of payment. Chart 4.3 gives a picture of the relationship between the number of payment terminals and the percentage of cash in a selection of countries. It shows, for example, that there is good access to payment terminals and a relatively low volume of cash in the Scandinavian countries.

[5] 2005 was the first year that the volume of deposit money in euro increased more than the volume of cash.

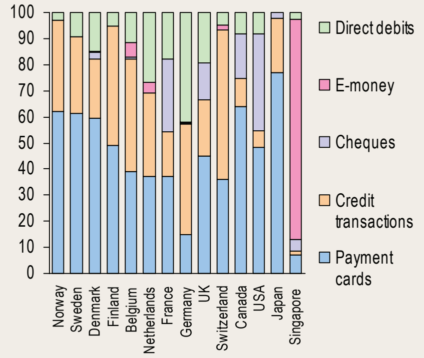
The use of different payment instruments varies from country to country, see Chart 4.4. Transactions that are initiated by the payer, so-called credit transactions (giros in Norway), are the most common form of paying bills in most of the countries in the survey, including Norway. In some countries, e.g. Germany, France, the Netherlands and the UK, direct debiting (Agreement-based giros [Avtalegiro] in Norway) is still very common. With direct debiting, the transaction is initiated by the payee. The statistics that were presented in Chapter 2 show that the use of this form of payment is increasing in Norway. Cheques are rarely used in most of the countries in the survey. The exceptions are France, the UK, Canada and the USA. E-money (see the definition at the back of this report) is also rarely used in most of the countries. Singapore distinguishes itself with an extremely high use of this payment instrument.

Payment cards are frequently used in most of the countries in the survey. Chart 4.5 shows the number of card transactions per inhabitant in a selection of countries divided according to their use of debit cards and credit and charge cards. The Chart shows that cards are used differently in different countries, both the number of transactions and the kind of card that is used. Norway is one of the countries where cards are used most, and transactions with debit cards constitute a higher percentage of card transactions than in most of the other countries. For several years, the number of card transactions per inhabitant has been higher in Iceland.

The number of cross-border payment transactions is still low compared with the domestic volume of payments. For example, in 2006 51 million card transactions were executed abroad with Norwegian cards, and 15 million transactions were executed in Norway with foreign cards, see Chart 4.6. By comparison, 914 million domestic transactions were executed with cards issued in Norway. While the use of Norwegian cards in Norway increased by 11 per cent from 2005 to 2006, the use of Norwegian cards abroad increased by 30 per cent.

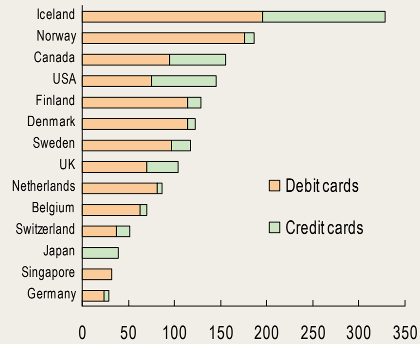
Payment cards issued by international card companies are well-suited for payments abroad, but it is also possible to execute payments between countries with other types of payment instruments. However, the payment systems must be better coordinated in order for international payment systems to become more efficient. This is an important motivating force behind the efforts to create a single payment area in the EU.

Chart 4.4 Use of payment instruments in selected countries in 2005. Percentage share



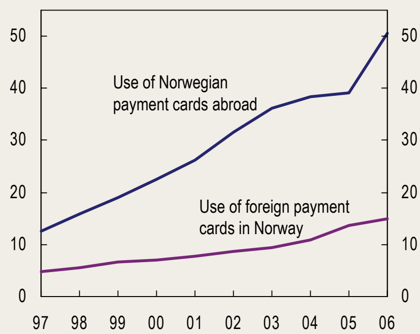
Source: Norges Bank, ECB Blue Book and BIS Red Book

Chart 4.5 Number of card transactions per inhabitant. 2005



Source: Norges Bank, ECB Blue Book, BIS Red Book and Central Bank of Iceland

Chart 4.6 Cross border use of payment cards. 1997-2006. Thousands of transactions.



Source: Norges Bank.

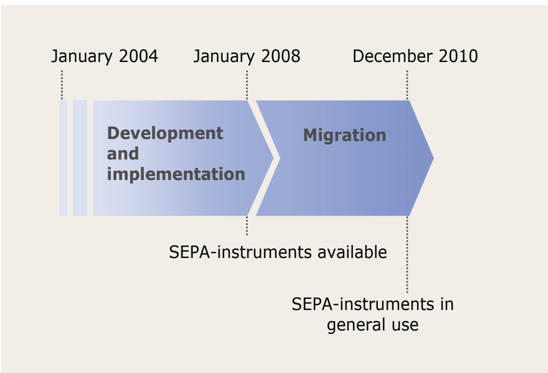
Some key figures for payment systems in Europe (2005)

	EU	Euro area	Sweden	Denmark	Finland	UK	Germany	France	**Norway**
Cash and bank deposits									
Banknotes and coins in circulation, % of GDP	-	6,1	3,7	3,0	-	3,8	-	-	**2,4**
Banknotes and coins in circulation, % of M1	-	14,0	9,4	7,4	-	-	-	-	**8,3**
Branches									
No. branches offering payment services per million inhabitants	599	646	283	393	308	472	560	649	**598**
ATMs									
No. ATMs per million inhabitants	735	810	310	554	645	968	647	763	**474**
No. ATM withdrawals per year per inhabitant	24	22	35	-	40	45	30	23	**21**
Average ATM withdrawal (EUR)	111	122	94	-	81	93	156	69	**142**
Payment cards									
No. POS terminals per million inhabitants	14 440	16 042	19 561	18 754	19 637	16 183	6 906	17 463	**20 479**
No. payment cards per 1000 inhabitants:									
- Debit cards	836	858	756	716	904	1 113	1 111	621	**1 062**
- Credit and charge cards	525	491	510	177	581	1 239	256	670	**646**
No. card transactions per inhabitants:									
- Debit cards	33	28	97	115	114	70	24	-	**176**
- Credit and charge cards	12	9	20	8	8	35	5	-	**11**
Average amount per payment (EUR)	57	53	43	51	36	72	66	49	**51**
Payment instruments' share of number of non-cash transactions									
Credit transfers (various giro services)	-	-	30	23	46	21	42	17	**35**
Direct debits (Avtalegiro, etc.)	-	-	9	15	5	20	42	18	**3**
Cheques	-	-	0	2	0	14	1	28	**0**
Payment cards	-	-	61	60	49	45	15	37	**62**
Card-based e-money	-	-	0	0	0	0	0	0	**0**

Source: Norges Bank og ECB Blue Book

4.2 Improving the efficiency of payment systems in Europe

Schedule for SEPA
In the first phase of the project, the framework for clearing and settlement and standards for different payment instruments in euro were defined. According to plan, the last phase shall begin on 1 January 2008 and be completed by 31 December 2010. In this period, the new payment instruments shall coexist with, and gradually supplant, the national instruments. By end-2010, most payment transactions in euro shall be executed with the new payment instruments.



The payment systems in Europe are mainly designed for domestic payments. Each country has had its own infrastructure, its own products and its own laws that have regulated the payment systems. The introduction of banknotes and coins in euro in 2002 gave the euro countries a common payment area for cash as a means of payment, but payments on account between the different countries in the euro area are still relatively expensive and time-consuming. The banking industry, the central banks and other government authorities in the EU are working to ensure that a common payment area can also be established for deposit money (ECB 2006a, ECB 2006b). This project is called the Single Euro Payments Area, with the acronym SEPA. The aim is to make the payments in the euro area more efficient, but the work may also have impacts on the EEA countries. Within the single European payment area, payments in euro to the other countries may be executed from a bank account with a set of instruments and on the same terms and conditions as for domestic payments.

If a single European payment area is to be established, it will be necessary to harmonise laws and regulations, to have common standards for payment instruments and to have a uniform infrastructure. Among other things, it will be necessary for the banks in Europe to cooperate with each other and with the authorities in the individual countries. The cooperation was slow to develop at first. Both the ECB and the EU Commission published a number of reports on the developments and pointed out that the authorities may introduce further regulations if the banking industry itself did not manage to produce satisfactory results. To improve the cooperation, the banking industry established an advisory body, the European Payments Council, in 2002, which also has representatives from Norway, Iceland, Liechtenstein and Switzerland.

A harmonised legislation

The EU Parliament has passed a new directive for payment services, the so-called "Directive on Payment Services". This directive will help facilitate a single European payment area by harmonising the legislation in the EU countries. Among other things, it will remove legal barriers to the new payment services. The EU countries must incorporate the directive into their national laws by 1 November 2009. The directive will probably also apply to Norway.

BIC and IBAN

EPC had decided that BIC and IBAN shall be used to identify the payee bank and account number for transfers in SEPA.

BIC is an abbreviation for "Bank Identifier Code" and identifies the banks by their SWIFT addresses. A BIC number consists of three elements: a bank code, a country code and a code for the location within the country.

IBAN is an abbreviation for International Bank Account Number. An IBAN number contains three elements: the bank account number, the country code and the bank code. The standard has been developed by ECBS, the European Committee for Banking Standards.

Common standards for payment instruments

The European Payments Council formulates minimum requirements for the ways in which payments shall be effected within the single payment area. Detailed schemes have been published for credit transfers and direct debiting. In addition, somewhat less detailed frameworks have been developed for cash handling, payment cards, clearing and settlement.

Credit transfers and direct debiting

The standards for credit transfers and direct debiting specify how these products shall function with the customers and among the banks. Among other things, the standards set requirements for how quickly the payments shall be executed. The rules for direct debiting may conflict with the legislation in some countries. Therefore, the banks might not offer these products until the EU Commission's directive is implemented in national legislation.

Direct debiting

To execute a direct debit, a payee is dependent on a mandate from the payer. EPC has drawn up an arrangement where the payer gives the mandate directly to the payee, but an arrangement will also be developed where the mandate will be given to the payer's bank (as with the Norwegian Avtalegiro).

Direct debiting in euro may be used for both regular payments and one-time payments.

Card payments

The framework for cards provides a set of basic rules so that card holders may pay with one card in the whole euro area and on the same terms and conditions as if the payment was executed in the country where the card was issued. Locations accepting payment cards shall be able to accept payments in the same way in all euro-countries, and payment card processors may compete to offer solutions for the whole euro area.

The ECB has expressed concern that the two international card companies, VISA and MasterCard, will dominate the European market (ECB 2006c). It is pointed out that the prices in these systems are generally higher than in the various national systems. The ECB (2006c) emphasises that the competition among them will not be sufficient to ensure good solutions for both merchants and card users. On this basis, the ECB concludes that in the long run it might be necessary to have a European participant.

Cash

The ECB shall implement measures to help facilitate an efficient organisation and increase the competition in cash handling. In the somewhat longer run, the national central banks shall coordinate the activities so that the banks are given the same terms and conditions without regard to which central bank they use for cash services. The European Payments Council wants cash use in the euro area reduced, and points out that it will result in major savings for society if payment cards replace cash to a greater extent (EPC 2007).

An efficient infrastructure

Payment transactions between countries often require more resources because the payment systems in the different countries are not coordinated. Therefore, correspondent banks have been frequently used in international payment transactions. This entails that a bank has accounts with banks in other countries, and that it uses these accounts to settle transactions with customers in these countries. A bank must have many of these banking connections in order to be able to effect payments to many countries.

Correspondent banks

It is common to use correspondent banks for cross-border payments. The reason for this is usually that the payer's bank does not have access to a central bank account or other parts of the payment system in the country where the payee is located. By using local banks in the payee's country, the payments can still be executed. The bank of the customer that is going to send money gives its correspondent bank a notification to credit the payee's account. If the payee has an account in this bank, the transaction will be settled here. However, the payer and payee will often have accounts in banks that do not have accounts with each other. If the payer or payee has an account in another bank, the transaction has to go through the respective domestic payment system before it can be credited to the customer's account.

International clearing and settlement systems can be a good alternative to using correspondent banks. The European Payments Council has recommended that so-called Pan European Automated Clearing Houses (PE-ACH) should be established. So far, there is only one clearing house (STEP2) that meets the requirements set by the European Payments Council for a PE-ACH. Many Norwegian banks already participate directly in STEP2, and all of the Norwegian banks can be reached through this system.

Effect on Norwegian infrastructure

The products that are defined by the European Payments Council involve payments in euro. If both the payer bank and the payee bank are from a country in the EEA and/or EFTA and the banks in these countries have undertaken to meet the European Payments Council's standards, payments in euro will have to meet these standards. The Norwegian banking industry has so far not undertaken to meet these standards, but it is participating in the work in the organisation. No formal requirements for changes of Norwegian infrastructure are under consideration, with the exception of the changes that may derive from the new directive from the EU Commission.[6]

The developments in European payment systems are important for Norwegian banks for a number of reasons. In order to compete for Norwegian retail and corporate customers who need payment services in euro, the Norwegian banking industry will have to make arrangements to facilitate standardised payments in euro. Norwegian banks offer payment cards that combine BankAxept and affiliation with an international card company. These cards will probably meet the European Payments Council's standards. If the banks choose to offer standardised credit transfers and direct debiting in euro, this will require some adjustments in the long run. The Norwegian banking industry has established a reference group for SEPA so that the work on developing new solutions in Norway may be included as part of the work on the joint infrastructure.

Norwegian banks may also be affected by the fact that the establishment of a single payment area changes the terms and conditions for the banks' suppliers. The standardisation will make the European market for payment solutions more uniform. This will result in increased competition and structural changes, probably ending up with fewer and larger suppliers. The Norwegian BBS and Danish PBS point to the trend in the European market as one of the reasons why they are establishing a joint activity for processing and acquiring (PBS 2007). For Norwegian banks, it may be more attractive to buy standardised products than to develop their own or buy national solutions.

A centralised system for securities settlement in Europe?

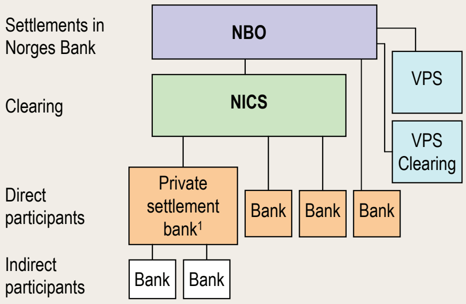
The European Central Bank (ECB) and the Eurosystem are assessing whether to establish centralised securities settlement for euro, TARGET2-Securities (T2S). According to plan, the system shall be owned and operated by the Eurosystem. The ECB points out that cross-border securities settlement within the Eurozone is expensive and claims that the establishment of T2S will result in considerable savings for participants. The proposal entails that four central banks in the Eurosystem (Germany, Italy, France and Spain) will conduct the settlements on behalf of the European central securities depositories. According to plan, T2S will become operable in 2013. In the first phase, the system will settle securities trades in euro, but other currencies may be included later.

ECB has invited all stakeholders to attend open meetings and consultations. The reactions from the market participants have been mixed. In a press release on 27 February 2007, the ECOFIN Council, where the Ministers of Finance in the EU participate, supports the project on certain conditions. The Governing Council of the ECB concluded on 8 March 2007 that the project is feasible. In collaboration with the market participants, the ECB will develop a model for the way the system should function. On the basis of this work, the Governing Council of the ECB will decide whether the system should be developed. This decision will be made in 2008.

[6] See press release from PBS (PBS 2007).

5. Oversight of the Norwegian interbank system

Chart 5.1 Interbank systems in Norway



[1] Private settlement banks are banks that settle on behalf of indirect participants.

Source: Norges Bank.

Oversight of the Norwegian interbank system is an important part of Norges Bank's efforts to maintain financial stability. This chapter explains how Norges Bank assesses three of the Norwegian interbank systems – Norges Bank's Settlement System (NBO), the Norwegian Interbank Clearing System (NICS) and DnB NOR's[7] interbank system – using internationally accepted principles for such systems (CPSS 2001). A complete review of these assessments is included in the Appendix of this report. The main conclusion is that the evaluated systems are of high quality. They are practical for the users and have developed mechanisms to limit the risk.

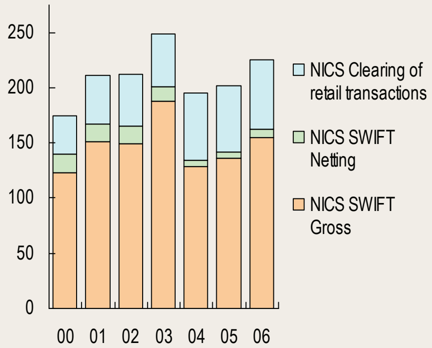
5.1 The Norwegian interbank system

Clearing: several transactions are offset against each other, and for each bank a net position will be calculated.

Gross settlement: transactions are settled individually, without prior clearing. When this is done in real time, the system is called an RTGS (Real Time Gross Settlement) system.

Payment with deposit money entails that the bank account of the payer is debited and the account of the payee is credited. If the payer and the payee are customers in different banks, the payee's bank will have a claim on the payer's bank. Banks that settle transactions between other banks are called settlement banks. Norges Bank is the ultimate settlement bank in Norway (see Chart 5.1). Norges Bank settles payment orders from NICS, the Norwegian Central Securities Depository (VPS), VPS Clearing and directly from individual banks.

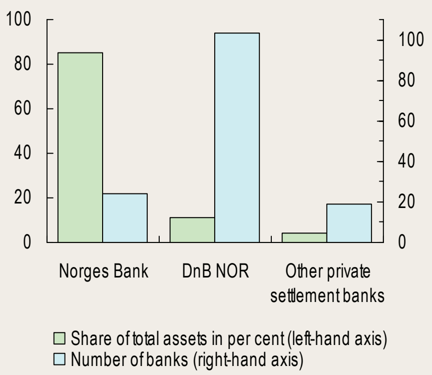
Chart 5.2 Average daily turnover in NICS. 2000-2006. NOK billion



Source: Norges Bank.

NICS is both a clearing house and a transaction channel. After the transactions are received in NICS, they are included in clearings that are sent to NBO, or they are sent individually (gross) for settlement in NBO (see text in margin). Most of the transactions that are cleared in NICS come from the banking systems for customer payments and are included in the clearing of retail transactions in NICS. The clearing of retail transactions is sent to NBO for settlement twice daily. Transactions sent in the SWIFT format that are under a volume limit of NOK 25 million are included in NICS's SWIFT netting. NICS sends three of these clearings daily to NBO. Transactions above the volume limit are sent on individually for settlement in NBO as soon as they are received in NICS. Gross transactions constitute the majority of the turnover both in NICS (see Chart 5.2) and in NBO (see Chart 5.4). NICS has authorisation and is subject to supervision from Norges Bank in accordance with the Act relating to payment systems, etc.

Chart 5.3 Norwegian banks by settlement bank. Share of total assets and number of banks. 2006



Source: Norges Bank.

The banks can participate in the retail settlement directly or let another private bank fulfil its commitments in Norges Bank. At end-2006, 23 of the largest banks had direct settlement in Norges Bank while 125 small and medium-sized banks settled their transactions in a private bank (see Chart 5.3).

[7] DnB NOR Bank ASA will be referred to as DnB NOR.

Settlement in a private bank entails that this bank takes over the participating bank's positions in the clearing of retail transactions in NICS. The private settlement bank debits or credits the participating banks after the settlement in Norges Bank. The private settlement banks also offer settlement outside the clearing of retail transactions in NICS, but this is of a more limited scale.

DnB NOR is the biggest private settlement bank. At year-end, 104 of the 147 banks in Norway were participating in the settlement in DnB NOR. DnB NOR's interbank system is subject to authorisation and supervision from Norges Bank in accordance with the Act relating to payment systems, etc. The next biggest private settlement bank is Sparebank 1 Midt-Norge with 17 participants. Sparebank 1 Midt-Norge has applied for and been granted an exemption from authorisation and supervision of its interbank system.

VPS clears the brokers' and investors' trading in shares, certificates and bonds. VPS calculates the net positions of the participants in the securities settlement related to both their securities and their payments. The settlement of securities is carried out in VPS, while NBO settles the cash positions. VPS sends two daily clearings for settlement in NBO. Only banks can participate directly in the settlement in Norges Bank. The brokers take part in the settlement through having their positions included in the position of a bank in which they are a customer. At end-2006, 16 banks were participating directly in the securities settlement in Norges Bank.

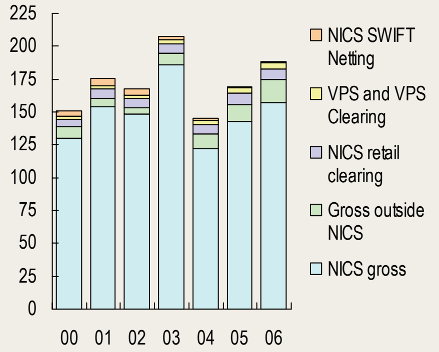
VPS Clearing sends two daily clearings for settlement in NBO. One is the positions of the banks for trading in financial derivatives that are traded on the Oslo Stock Exchange. The other is a clearing of the cash positions of the brokers who borrow securities from VPS Clearing so as to acquire cover in the securities settlement.

Norges Bank can also accept individual transactions directly from the banks.

5.2 Norges Bank's oversight and supervisory role

Norges Bank's responsibility for overseeing the payment system is specified in Section 1 of the Norges Bank Act, where it states that Norges Bank shall "promote an efficient payment system domestically as well as vis-à-vis other countries". An important part of Norges Bank's role as an overseer is to ensure that international recommendations for interbank systems are followed. The most important recommendations in this area are the ten Core Principles, which the Committee on Payment and Settlement Systems

Chart 5.4 Daily turnover in NBO by settlement. 2000-2006. NOK billion



Source: Norges Bank.

Changes in securities settlements and derivative settlements

In 2006 and 2007 securities settlements and derivative settlements were changed so that the risk in the systems has been reduced.

- Information about the participants' positions in the securities settlement will now be sent out after the settlement is completed. Thus, the brokers cannot assume risk by crediting their customers before the settlement is completed.
- VPS Clearing has taken over for NOS Clearing as the key counterparty for financial derivatives, while NOS Clearing continues to be the key counterparty for freight derivatives. This alleviates the risk of spill-over between the markets for financial derivatives and freight derivatives.

Coordinated oversight – CLS

CLS (Continuous Linked Settlement) is a system for settlement of foreign exchange trades. Fifteen currencies are included in the settlement in CLS. In the settlement of foreign exchange trades where Norwegian kroner are involved, the participants are obligated to pay net settlement obligations in kroner to the CLS Bank's account in Norges Bank. The daily value of these settlement obligations averaged NOK 10.9 billion in 2006. The US central bank through the Federal Reserve Bank of New York has the primary responsibility for oversight of CLS. Norges Bank and the other central banks with currency that is settled in CLS participate in the coordinated oversight under the auspices of CPSS.

The Core Principles (CPSS, 2001)

I. The system should have a well-founded legal basis under all relevant jurisdictions.

II The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through the participation in it.

III. The system should have clearly defined procedures for management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain these risks.

IV. The system should provide prompt final settlement on the day of value, preferably during the day, and at a minimum at the end of the day.

V. A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.

VI. Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.

VII. The system should ensure a high degree of security and operational reliability and should have contingency arrangements for the timely completion of daily processing.

VIII The system should provide a means of making payments that is practical for its users and efficient for the economy.

IX. The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.

X. The system's governance arrangements should be effective, accountable and transparent.

The Central Bank's area of responsibility associated with the Core Principles (CPSS, 2001)

A. The central bank should define clearly its payment system objectives and should disclose publicly its role and major policies with respect to systemically important payment systems.

B. The central bank should ensure that the systems it operates comply with the Core Principles.

C. The central bank should oversee compliance with the Core Principles by systems it does not operate and it should have the ability to carry out this oversight.

D. The central bank, in promoting payment system safety and efficiency through the Core Principles, should cooperate with other central banks and with any other relevant domestic or foreign authorities.

(CPSS)[8] published in 2001. The Core Principles provide guidelines for the ways in which legal, financial and operational risk ought to be limited and for the ways in which the systems best become efficient, open and can be ensured good governance. CPSS also gave four recommendations as to what the central banks shall do to ensure that important interbank systems follow the Core Principles.

The Act relating to payment systems, etc. gives Norges Bank responsibility for the authorisation and supervision of the Norwegian interbank systems. Among other things, the Act specifies requirements for the design of the interbank systems that are subject to authorisation and gives Norges Bank the right to order changes. The requirements in the Act are partly based on six international recommendations known as the Lamfalussy recommendations (CPSS 1990). These recommendations are the precursors to the Core Principles.[9] Through the supervision of the systems that are authorised, Norges Bank ensures that the requirements in the Payment Systems Act are met. The supervision is exercised through reporting from, and regular meetings with, the operators of the systems. Among other things, Norges Bank is informed about turnover, exposure and operational disruptions. Major changes related to the owner and to organisational and operating conditions shall also be approved by Norges Bank.

The oversight encompasses more than just supervision (see Chart 5.5). Whereas the supervision is only focused on the interbank systems that are authorised (NICS and DnB NOR), the oversight also encompasses important interbank systems that are not authorised. Moreover, Norges Bank will also attach importance in the oversight to conditions other than those for which requirements are specified in the Payment Systems Act. For the part of the oversight that will not be covered by the Payment Systems Act, and thus by the supervisory work, Norges Bank may not order changes, but will discuss what the best solutions are with the participants.

Norges Bank's own settlement system, NBO, will not be covered by the requirements concerning authorisation and supervision in the Payment Systems Act, but the system will still be overseen as CPSS recommends. Norges Bank conducts the oversight in a department that is separate from the operative.

Norges Bank also participates in the central banks' coordinated oversight of CLS (see text in margin on previous page).

[8] CPSS is a forum for the central banks in the G10 countries. CPSS shall help promote robust, efficient payment systems. CPSS has its secretariat at the Bank for International Settlements (BIS).

[9] The Core Principles include the six Lamfalussy recommendations along with four new recommendations.

5.3 Assessing payment systems against the Core Principles

As part of Norges Bank's oversight, NBO, NICS and DnB NOR's interbank system have been evaluated against the ten Core Principles from CPSS with their appurtenant clarifications. The evaluations of NICS and NBO are based on a review of the retail settlement and RTGS. Other clearings and settlements in NICS and NBO have not been assessed. All of the Core Principles are regarded as observed or broadly observed, see Chart 5.9. The assessment concludes that the systems satisfy international recommendations with only minor reservations.

In the review, the systems are assessed equally stringently even though the consequences of a failure will depend on the kind of system involved. The systems have been assessed as they were at the end of March 2007, regardless of whether prior plans have been made for imminent changes. The results of the assessments are shown in Chart 5.9. The whole assessment is presented in the appendix to the Chapter. A selection of the principles will be reviewed below. Expected changes and improvements will also be commented upon here. Further, it will be pointed out that some principles are less relevant to the Norwegian systems. The principles that are regarded as broadly observed will be discussed first. Thereafter a discussion of some of the principles that are assessed as completely observed will follow. Particular importance has been attached to commenting on principles where room for improvement has been found or where changes are planned.

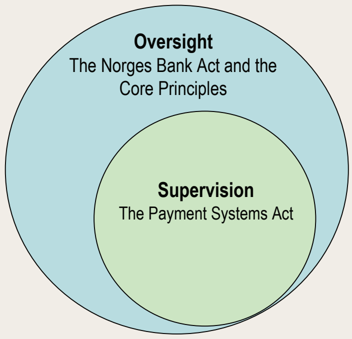
Principles regarded as broadly observed

NICS

Core Principle I deals with the legal basis of the system. This principle is not regarded as completely observed because the agreement for settlement of the positions of the banks affiliated with BankAxept[10] has not been reported to Norges Bank. Pursuant to this agreement, the banks' positions from transactions through BankAxept will be settled even if a participant is placed under public administration. The agreement is based on the assumption that the settlement bank shall provide liquidity so that the settlement can be completed, and thereafter seek to have any losses covered that this entails, from the estate. If part of the loss is not covered by the estate, the settlement bank may submit claims against the banks that issue BankAxept cards. As the settlement bank, Norges Bank has not been willing to enter into this kind of role.

[10] BankAxept is the national system for payment with bankcards in Norway.

Chart 5.5 Norges Bank's oversight and supervision of interbank systems



Source: Norges Bank.

Time for crediting

A payment from customer 1 to customer 2 through their banks involves the following operations:

1. Bank A debits customer 1's account and sends a payment notification through the payment system in which bank B is requested to credit customer 2's account.
2. The settlement bank debits the account in bank A and credits the account in bank B.
3. Bank B credits customer 2's account.

The sequence of these operations has considerable effect on the risk in the settlement system. If the banks practise "advance crediting", bank B will credit customer 2 (step 3) before the bank has received payment in the settlement bank. This entails a risk for bank B, because bank A may be placed under public administration before the settlement in the settlement bank. Without advance crediting, bank B will not incur an obligation with customer 2, nor will he incur a risk of loss in case bank A is placed under public administration.

There is not any advance crediting in the interbank systems that are evaluated in this report.

Changes in NICS

In 2008, some system changes will be made in NICS. The clearing of retail transactions and SWIFT transactions will be combined. At the same time, a volume limit of NOK 25 million will be introduced for all types of transactions in this clearing. Transactions of larger amounts will be settled gross. Thus, the amount and not the format in which the transaction is sent, will determine whether it is settled gross or net. Furthermore, it will be possible for the banks to see what their positions are with other individual banks. With this new solution, NICS will be able to produce a new clearing result at once if the clearing is recalled in NBO. The liquidity risk for the banks that participate in NICS will thereby be reduced in relation to the present situation.

In a draft of new procedures for settlement, it is no longer planned for the settlement bank to cover the position of a bank under public administration. The NICS Operations Office[11] will first ask the estate whether it will cover the whole or part of the bank's settlement obligations. The settlement obligations that the estate does not cover will be divided among the other banks that issue BankAxept cards. The part of the loss that the individual bank must assume will depend on how many cards the bank has issued. With this kind of solution, the settlement bank will not have to provide liquidity in order to cover the position of a bank that is placed under public administration. The most important objection that Norges Bank has to this existing agreement is thus taken into consideration in the proposal for new procedures.

According to *Core Principle V,* it shall be possible to complete a netting even in the event of an inability to settle by the participant with the largest single settlement obligation. That should remove the liquidity risk for the banks and make it easier to have oversight of the credit risk associated with the settlement. The completion of the netting that is cleared in NICS is not ensured in accordance with this recommendation. The credit risk has nearly been removed because the banks credit their customers after settlement for the biggest volume of transactions. Equivalent procedures have not been established for removing the liquidity risk. Simulations have nonetheless shown that the liquidity problems for the other banks will normally be limited even if the largest participant cannot cover its position. This risk will probably be further limited when NICS makes use of new functions in 2008, see the box in the margin. Norges Bank assesses the solutions the banks have chosen for the retail settlement to be just as expedient as a solution based on an ensured completion of the settlement. This is partly due to the fact that an ensured settlement would have imposed a credit risk on the banks that they do not have in the current solution.

NBO

According to *Core Principle V,* the system shall be capable of ensuring the completion of a netting even in the event of an inability to settle by the participant with the largest single settlement obligation, cf. the equivalent principle for NICS. The solution the banks have chosen entails that the completion of the retail settlement in NBO can be rejected if a participant is unable to meet his settlement obligation. Therefore, NBO does not completely observe Core Principle V even if this can be regarded as a consequence of the choices the banks have made. As was also written above, the current solution is regarded as just as good as the solutions outlined in the Core Principle.

[11] The NICS Operations Office is the operator of NICS; cf. Chapter 2 of the Act relating to payment systems, etc. The NICS Operations Office is responsible for the organisation and operation of NICS and is the addressee for any instructions from Norges Bank.

DnB NOR

Core Principle I deals with the legal basis of the system. Among other things, the systems shall have clear, updated agreements. In 2003, DnB and Gjensidige NOR merged and established DnB NOR. Prior to the merger, both of the banks were private settlement banks. Some agreements with the participating banks have not been updated in accordance with changes that have been made in the systems after the merger. Thus, the agreements between DnB NOR and some of the participating banks contain outdated and misleading information. The fact that these banks are also tied to the agreement framework in NICS helps remedy the problem. Moreover, the majority of the participating banks have updated agreements with DnB NOR.

According to *Core Principle VI,* the settlement between banks should preferably be implemented by means of claims on the central bank. Where other assets are used, they should carry little or no credit risk and little or no liquidity risk. The settlement in DnB NOR is effected by means of claims on DnB NOR, and thus not in central bank money. DnB NOR will be assessed as a creditworthy bank, and the principle will be regarded as being broadly observed.

In *Core Principle IX,* it is recommended that the systems shall have objective and publicly disclosed criteria for participation. Neither information about prices, nor other factors that can affect the access to DnB NOR's settlement system are publicly disclosed but the banks can choose whether they will participate in DnB NOR's settlement system, in other private settlement systems, or whether they want to have settlement directly in NBO. The risk and consequences of DnB NOR not being able to offer fair and open access is reduced when the banks have several alternatives.

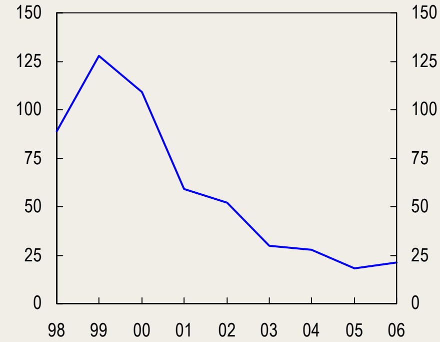
Selected principles regarded as observed

NICS

According to *Core Principle II,* participants should have a clear understanding of the system's impact on the financial risk they incur. On some points, the information from NICS can be clearer than it is at present. For example, the agreement is inaccurate with regard to certain times associated with the handling of situations where a bank has insufficient cover.

Since the agreement on settlement of BankAxept has not been approved by Norges Bank, the risk that a participating bank will incur if a bank is placed under public administration may be uncertain. On a more general level, however, agreements and other available information contribute to the banks' understanding of their financial risk.

Chart 5.6 Disruptions in NICS operations. 1998-2006. Number of errors



Source: NICS Operations Office

Core Principle III deals with how the system manages credit and liquidity risk. If the clearing of retail transactions in NBO is rejected, the banks assume a certain amount of liquidity risk. This risk is regarded as manageable with the current turnover and liquidity situation. In 2008, NICS will begin to use new functions that are expected to reduce the liquidity risk in the clearing of retail transactions (see text in margin in the discussion of principle V).

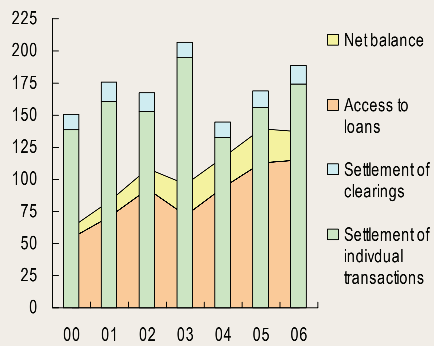
Core Principle VII deals with the operational security of the systems. The operation of NICS is conducted in the Norwegian Banks' Payment and Central Clearing House Ltd. (BBS). BBS has complete, updated routines for risk management. Moreover, BBS is certified in accordance with the international standards ISO 27001 and ISO 9001 and is regularly audited by Det Norske Veritas. Since the end of the nineties, BBS has seen a decline in the number of errors in the operation of NICS (see Chart 5.6).

Based on contingency considerations, it would be desirable to have alternating operations centres. The current back-up facilities are only brought into use in exercises or if the actual disruptive situation should so require. BBS is planning to establish a system with two operations centres that shall be in daily use some time in 2008. In addition, BBS is studying whether NICS can be operated from a third location.

NBO

Core Principles I and II deal respectively with the legal basis of the systems and the understanding of the risk incurred through participation in them. The principles are regarded as observed, but the agreement framework can still be made clearer. Norges Bank has chosen not to publish detailed procedures for how disruptive situations will be handled. In some cases, the banks may assume that Norges Bank will comply with the agreement framework of NICS, but Norges Bank has not stated in its agreement framework whether the bank will so comply. In other cases, neither the framework of rules in NICS nor those in NBO clarify what Norges Bank will do in a disruptive situation. This may make it difficult for the banks to see beforehand how a disruptive situation will develop. At the same time, it is advantageous if the Central Bank may exercise judgment when a disruptive situation is handled. Norges Bank is not required to handle disruptive situations in a particular way and is free to choose the best solution in each particular case. However, the situations in which Norges Bank will exercise judgment ought to be specified in Norges Bank's framework of rules.

Chart 5.7 Liquidity and turnover in NBO. 2000-2006. Daily average. NOK billion



Source: Norges Bank.

NBO is regarded as observing *Core Principle III* about management of credit risk and liquidity risk. The participants will not incur credit risk in NBO with the exception of extremely small exposures for card transactions. The credit risk associated with card transactions will be clearer when the banks have established new BankAxept procedures, see the discussion of principle I for NICS.

The banks have a certain liquidity risk in both gross settlement and in retail settlement in NBO. The liquidity risk in the retail settlement is due to the fact that the execution of the settlement is not ensured. If a bank cannot cover its settlement obligations or be placed under public administration, the clearing will be cancelled. NICS will then execute a new clearing without this bank. The other banks will then be able to change their positions. This liquidity risk will be limited in normal cases, partly because the banks have substantial liquidity available in Norges Bank (see Chart 5.7).

The liquidity risk in the gross settlement arises because the banks send most of their transactions around 13:00. In the event of a technical failure, a bank may be unable to send transactions, but still receive incoming transactions in NBO. In that case, some of the liquidity in NBO may be locked in the account of this bank. At the same time, the coordination means that the banks need less liquidity because the system's deadlock mechanism clears transactions during the execution of the settlement. Therefore it is not clear that it will be expedient to change the time for sending transactions to NBO. With the new settlement system that will be put into use starting in 2008 (see text in margin), the settlement may be executed according to the same procedures that are currently in use, but other solutions may also be chosen. For example, schemes with bilateral limits may be introduced. This curtails the risk that the banks will send too much liquidity to a bank that is unable to send out transactions for technical reasons.

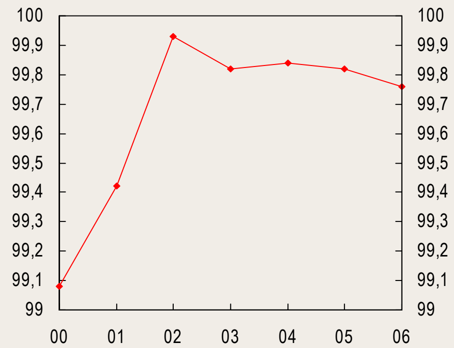
NBO is assessed to be a secure and operationally reliable system that observes *Core Principle VII*. It has good contingency routines; security is given high priority; and the operational stability has been good in recent years (see Chart 5.8). However, the operational risk can be further reduced.

Norges Bank has initiated efforts to develop a new settlement system because NBO is approaching the end of its technological life. If the operation of this system were to continue for many more years, the risk might eventually become too high. With the new settlement system, NBO would become less vulnerable because the supplier will be responsible for maintenance and system development. In addition, there are plans to introduce alternating operations centres. This will make the contingency solutions more robust. The current back-up facilities are only put to use in the event of very serious disruptions in the software and hardware in the main system.

Change in NBO

Norges Bank has decided to replace its settlement system with a new solution based on a standard settlement system developed by an international supplier. With the new system, the banks will be able to send transactions electronically to Norges Bank through a special Web client as well as in SWIFT format. The transition to a new settlement system will also make it possible to establish several sub-accounts for each bank. This will be utilised through the establishment of special accounts for securities settlement and for payments into and out of CLS. The new settlement system will also include new functionality, e.g. for assigning priority to transactions and bilateral limits. According to plan, the system will become operable in 2008.

Chart 5.8 Availability in NBO during opening hours. Per year 2000-2006. Per cent



Source: Norges Bank.

CPSS (2001) recommends that the system operator be certified in accordance with an internationally accepted security standard. This helps ensure that the best security practices are followed at all times. Norges Bank is not certified according to this kind of standard. However, ErgoGroup, which has been responsible for the technical operation of NBO since 2003, does have such certification.

DnB NOR

Core Principle III concerns the financial risk of the participants. DnB NOR has undertaken to update the accounts of the participating banks if the retail settlement in NBO is executed. The settlement in NBO will thereby not be disrupted even if one of the participants in DnB NOR's settlement system cannot meet its settlement obligations. Furthermore, the participants will receive settlement even if another participant in the system cannot cover his position. As a result of this, the financial risk to the participants in DnB NOR is very low, and the principle is regarded as observed.

Change of settlement bank

If a private settlement bank cannot continue with its activities, banks with settlement in this bank will no longer be able to conduct payment transactions. Therefore, Norges Bank regards it as important that arrangements be made for a rapid change of settlement bank in such cases. This is technically possible, but it is uncertain whether the agreements in the different interbank systems will facilitate it. The NICS Operations Office and the settlement banks are in the process of adapting the agreement framework so that a change of settlement bank may be done quickly enough if a crisis should arise. According to plan, this work will be completed in 2007.

In the current solution, the private settlement bank incurs a certain amount of risk. Under the direction of the NICS Operations Office, it will be assessed whether solutions ought to be established that can reduce this risk. One possible measure is to settle transactions above a certain value gross. Another may be to set limits on the size of exposures a private settlement bank may incur from a participating bank during the execution of the settlement.

Private settlement and liquidity risk in NBO

It may be advantageous for smaller banks to settle in a private settlement bank and also for the Norwegian banking sector as a whole. For example, the execution of nettings in NBO requires that all of the participants can cover their settlement obligations. If this condition is not met, the clearing will be rejected and the settlement will be delayed. When most of the small and medium-sized banks settle in a private settlement bank, the risk of this happening is reduced.

Core Principle *VIII* specifies a requirement that the systems shall be practical and efficient for the users. The settlement system for DnB NOR is assessed to meet this requirement. The participants have access to use DnB NOR's payment solutions, e.g. for payments to or from abroad. They are also able to settle the retail payments without unnecessary delays. The liquidity costs for the participants will be reduced because DnB NOR gives its participants unsecured credit in connection with the execution of the settlement.

5.4 Risks not covered by the Core Principles

The Core Principles are used by more and more central banks as a basis for oversight of systemically important interbank systems. One result of this is that attention is focused on possible risks that the Core Principles do not address. Business risk and risk deriving from interlinkages between different systems are important types of risk that are not directly covered by the Core Principles (Bank of England, 2006). Neither is the coordination between different systems addressed by the principles.

Business risk is the risk that a system operator or a supplier of infrastructure will incur financial difficulties and thus not be able to provide necessary services. Systems that have private owners or that are connected to such systems are exposed to business risk.

Risk deriving from interconnections may occur in several ways. If a bank that participates in two or more systems does not receive settlement in one of the systems, the result may be that the bank is unable to meet its commitments in another system. Furthermore, connections with a common supplier of infrastructure can make several systems vulnerable if he is unable to make a delivery.

The fact that the coordination among interbank systems is not covered by the core principles means that any deficiencies in this field will not affect the extent to which they observe the principles. For example, both NBO and NICS will be assessed as observing *Core Principle X* regarding effective, accountable and transparent organisation, even though there are signs that the coordination between them can be improved.

Chart 5.9 Summary assessment of the systems against the Core Principles

	NBO	NICS	DnB NOR
CP I Legal basis	●●●●	●●●○	●●●○
CP II Understanding financial risk	●●●●	●●●●	●●●●
CP III Management of financial risks	●●●●	●●●●	●●●●
CP IV Prompt final settlement	●●●●	●●●●	●●●●
CP V Settlement in multilateral netting systems[1]	●●●○	●●●○	●●●●
CP VI Settlement asset	●●●●	N/A	●●●○
CP VII Security and operational reliability	●●●●	●●●●	●●●●
CP VIII Efficiency	●●●●	●●●●	●●●●
CP IX Access criteria	●●●●	●●●●	●●●○
CP X Governance	●●●●	●●●●	●●●●

[1] Core Principle V is not applicable for gross settlements

●●●●	●●●○	●●○○	●○○○
Observed	Broadly Observed	Partly Observed	Not Observed

Labour conflict and compulsory arbitration in the banking industry

The Finance Sector Union of Norway issued a strike notice for about 6 000 of its members in insurance companies when negotiations with the Norwegian Financial Services Association broke down on 3 May 2006. They subsequently served notice to escalate the strike to over 1 500 union members working in 76 banks. At the same time, the Norwegian Employers' Association for the Financial Sector issued notice of a lockout of the other roughly 15 000 members in the Finance Sector Union of Norway. The state mediator attempted to resolve the conflict through mediation, and the parties held meetings with the Minister of Labour and Social Inclusion. However, the dispute was not resolved. On 11 June, the Minister announced that the government would submit a bill proposing that the dispute be resolved through compulsory arbitration. The reason for this was that a threatened shutdown of the payment systems would rapidly result in major, serious problems for the society at large. After that, a strike and lockout were not initiated.

The banks are of the opinion that if they were supposed to keep their systems in operation during a labour conflict, the workforce reductions would mean that errors in the systems would not be corrected. That would give the banks a higher risk than they could accept. The banking industry has therefore decided to shut down the key parts of the payment system in the event of an extensive labour conflict. This way of dealing with the problem is termed the shutdown policy. The shutdown policy covers most Norwegian banks[1], the Norwegian Banks' Payment and Central Clearing House Ltd. (BBS) and NICS[2].

Payment terminals, telebanking and Internet banking will not be operable if the shutdown policy is initiated. Banks that are members of the Norwegian Employers' Association for the Financial Sector will stay closed. The services of BBS will not be available, and so it will also be difficult for other banks to offer payment services. Cash may still be used as a means of payment, but the ATMs will not be replenished, and there will soon be a shortage of cash.

Norges Bank's Settlement System (NBO) will be in normal operation during the shutdown policy. NICS will not clear or send transactions on to NBO (see Chapter 5), but the banks may send transactions directly to Norges Bank. The securities settlement and the settlement of foreign exchange trades through Continuous Linked Settlement (CLS) may thus be executed, but this may entail risk for the banks. They send and receive payments on behalf of their customers in these settlements. Normally, claims received by the banks against their customers will be settled the same day, but this will not always be feasible under the shutdown policy. The banks may thus receive a greater long-term claim against their customers than usual.

When the systems are to be shut down and started up again, there may also be risk. Norges Bank has therefore asked the operators of the clearing and settlement systems that have authorisation (NICS and DnB NOR) to disclose how great the operational risk of shutting down and reopening the payment systems is and what they can do to reduce that risk. The system operators have replied that they have routines that enable them to manage the operational risk of shutting down and starting up the systems.

[1] The shutdown policy includes the members of the Norwegian Employers' Association for the Financial Sector.
[2] The NICS Operations Office decides whether NICS shall be shut down. BBS is the operations centre for NICS, and BBS is a member of the Norwegian Employers' Association for the Financial Sector.

Appendix: Review of Norwegian interbank systems

In this appendix, Norges Bank's Settlement System (NBO), the Norwegian Interbank Clearing System (NICS) and DnB NOR's[12] interbank system are assessed against the ten Core Principles from CPSS (2001)[13] with appurtenant clarifications. The systems are discussed in greater detail in Chapter 5 of this report (5.1).

For the most part, the systems are presented individually. They are given an independent evaluation for each principle; see Chart 5.9 in Chapter 5. Since the systems are closely interconnected, it is certainly expedient on some occasions to consider them jointly. That also gives a more comprehensive impression of the risk of taking part in several of the systems.

The assessments of the systems are based on documentation from the operators. When documentation is not available, the assessments are based on statements from the operators and other parties. This applies in particular to certain matters related to Core Principle VII.

The systems have been assessed as they were at the end of March 2007, without regard to whether any plans had been made to change the systems. Chapter 5 also discusses expected changes, and the relevance of certain principles to the Norwegian systems will also be discussed.

Core Principle I

The system should have a well-founded legal basis under all relevant jurisdictions.

With only a few exceptions, the frameworks of laws and agreements that are relevant to NICS, NBO and DnB NOR's interbank system are updated and complete.

The Payment Systems Act (1999) requires that interbank systems that have a significant effect on financial stability must be authorised and subject to supervision from Norges Bank. The rules for the systems shall be laid down in agreements among the participants. Among other things, the agreements shall specify when payment orders between the banks are binding, including cases where a bank is placed under public administration. With the Payment Systems Act, the EU Settlement Finality Directive was implemented in Norwegian law. *The Financial Contracts Act (1999)* regulates key agreements concerning financial services that financial institutions offer the public. Among other things, this includes agreements relating to deposits, payment services, lending and guarantees. The EU Directive on financial collateral arrangements was implemented into Norwegian legislation through *the Act relating to financial collateral (2004).* The Act provides protection for some financial contracts in the event of bankruptcy and enables the rapid realisation of collateral.

NICS

In order to participate in NICS, the banks must adopt certain parts of the Norwegian Financial Services Association's (FNH) and the Norwegian Savings Banks' Association's *Collected agreements and rules for domestic payment systems.* Chapter three in this agreement framework regulates when the banks may recall transactions under and outside public administration. The agreement framework also regulates how transactions shall be handled if they are rejected in NBO because a bank lacks cover or is placed under public administration. In addition, it clarifies what operations and what decision-making rights have been delegated to the NICS Operations Office.

The agreement framework in NICS is somewhat unclear in places. The most important weakness is probably that it is not clear to what extent the BankAxept agreement[14] will be followed if a bank is placed under public administration. In accordance with the agreement, the BankAxept transactions (card transactions) will be settled even if they involve that kind of bank. The agreement specifies the condition that the settlement bank shall cover any debit positions from a bank under public administration, in order to then bring claims against the estate. As the settlement bank, Norges Bank does not accept this kind of solution and has not approved the agreement as licensing authority.

[12] DnB NOR Bank ASA will be referred to as DnB NOR.
[13] The assessments of NICS and NBO are based on a review of the clearing of retail transactions in NICS and of RTGS, see Chapter 5.1

[14] Rules concerning the issuing and handling of BankAxept cards in ATMs and payment terminals at locations where these cards are accepted.

NBO

Banks that want to take part in NBO must sign the *Account Maintenance and Settlement Agreement.* Banks that also want to borrow from Norges Bank must also sign an *Agreement relating to financial collateral for loans in Norges Bank.* Among other things, the Account Maintenance and Settlement Agreement has rules for the registration of payment orders, for the requirements that apply to the coverage of transactions, for the way in which the transactions are given priority if there is not sufficient cover, and for when a transaction is finally settled. It is also specified how a transaction will be handled if the payer or payee bank are placed under public administration. Among other things, the agreement relating to financial collateral regulates Norges Bank and the banks' right to dispose of the collateral, the ways in which the collateral can be released, and the steps that must be taken in order for Norges Bank to realise the collateral.

DnB NOR

DnB NOR has adopted *Regler for forholdet mellom oppgjørsbankar for nivå 2 i masseoppgjøret og NICS* (Rules for the relationship between settlement banks for level 2 in the retail settlement and NICS). These rules clarify DnB NOR's obligations to cover the positions of its participating banks in the settlement in NBO. Furthermore, the rules also explain how a participating bank will be dealt with by NICS if the settlement bank has insufficient cover for its settlement obligations in NBO.

The banks with settlement in DnB NOR must sign agreements on account maintenance and settlement. These agreements specify the participating banks and DnB NOR's rights and duties with regard to operational matters and disruptions. Among other things, this applies to rules for the suspension of a participant, for dealing with a bank under public administration, and for a case where DnB NOR cannot function as a settlement bank. The agreements also have rules for account overdrafts to the participating banks.

The banks with settlement in DnB NOR must also take part in NICS. They are obligated to sign the *Tilknytningsavtale til Bankenes felles Avregnings-system (NICS)* (Association Agreement with the Norwegian Interbank Clearing System [NICS])*, Hovedavtale mellom banken og Bankenes Betalingssentral* (the Main Agreement between the Bank and Bankenes Betalingssentral) and *Regler for forholdet mellom oppgjørsbankar for nivå 2 i masseoppgjøret og NICS* (Rules for the relationship between settlement banks for level 2 in the retail settlement and NICS). In addition, the participating banks must undertake certain parts of the *Collected agreements and rules for domestic payment systems* (see the discussion of NICS under the same principle).

In 2003, DnB and Gjensidige NOR merged and established DnB NOR. Prior to the merger, both of the banks were private settlement banks. After the merger, not all agreements with the participating banks have been updated in keeping with changes that have been made in the systems. This means that the agreements between DnB NOR and some participating banks did not include updated information about the current system. One reason why this is unfortunate is that it will be uncertain when a transaction is entered into the system since reference is made in the definition to solutions that are no longer in use.

To be sure, the majority of the participating banks have updated agreements. In these agreements, the time for the final settlement could have been more clearly specified.

Core Principle I is considered to be broadly observed for NICS, observed for NBO, and broadly observed for DnB NOR.

Core Principle II

The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through the participation in it.

The banks with settlement directly in NBO have agreements with Norges Bank on settlement and account maintenance, while the banks with DnB NOR as the settlement bank have equivalent agreements with DnB NOR. The participants in both settlement banks are affiliated with the NICS Operations Office for clearing and receipt of transactions. The agreements are clear, updated and complement each other for the most part. With few exceptions, they have detailed procedures that are to be followed if a bank is placed under public administration or some other disruptive situation should occur.

NICS

It is not clear whether the BankAxept agreement will be followed if a bank is placed under public administration. It creates an uncertain situation for the banks. Furthermore, some of the rules include formulations that may make it difficult for the banks to understand how a transaction will be entered in a disruptive situation.

NICS and NBO

The rules and the agreements of NBO and NICS are available to the public. Norges Bank's agreement framework can be found on the Bank's web site. You can order NICS's Collected Agreements and Rules from the Norwegian Financial Services Association (FNH), and they are available to the participants on the Internet.

Minor measures can make it easier for the banks to understand the financial risk associated with participating in the system. First of all, it can be made clearer to the participants how a transaction is normally conducted. An illustration to demonstrate this may make it easier for the banks to see where NICS's framework of rules ends and NBO's framework of rules begins. Secondly, it may be beneficial if the operators had references to the framework of rules for the other systems on their websites, so that situation in its entirety was more apparent.

On certain points, there is a lack of consistence between the collected agreements and rules of NICS and those of NBO. For example, the agreement framework of NICS and the operating pattern in NBO show different times for when the final settlement[15] will be cancelled if a bank has insufficient cover. This makes it more difficult for the banks to visualise the actual schedule.

DnB NOR

The agreement framework for DnB NOR is not available to the public for commercial reasons.

DnB NOR's agreements have been drawn up on the basis of NICS's framework of rules, and they refer to this framework of rules where it is natural to do so. This makes it easier for the banks to assess their own risk.

DnB NOR holds courses, conferences and meetings with the participating banks so as to increase their competence in matters relating to payment systems, clearing, settlement and liquidity management.

In some areas, measures can be taken so that the banks will better understand the risk associated with taking part in DnB NOR's Settlement System. For example, DnB NOR could have shown the participants how transactions with settlements in DnB NOR usually go through the interbank system. For the participants who are tied to the settlement in DnB NOR with agreements that are outdated, misunderstandings may also arise that diminish the understanding of the risk. This problem can be done away with by DnB NOR renewing the agreements they have with these participants.

Core Principle II is considered to be observed for NICS, observed for NBO, and observed for DnB NOR.

Core Principle III

The system should have clearly defined procedures for management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain these risks.

The banks credit their customers after the settlement in Norges Bank and therefore do not have any credit risk associated with the payment settlements. However, this does not apply to the BankAxept transactions, where the banks undertake to settle the transaction before the settlement in NBO takes place; but the banks' positions tied to such transactions are small, so it will probably be possible for the banks to manage any losses that may occur.

NICS and NBO

The banks with settlement in NBO have access to central bank liquidity through loans against collateral in securities in Norges Bank. Information about balances, drawing rights and the transactions in the system is given in real time through a NICS/NBO Liquidity Survey. Moreover, the settlements are monitored throughout the day in Norges Bank.

[15] The final settlement is the second clearing of retail transactions of the day, which is sent to NICS from NBO for settlement at about 2.45pm.

The gross transactions are settled continuously in NBO. Queues are managed in accordance with the FIFO principle[16], and a well-functioning gridlock mechanism has been established. This function ensures that a bank is able to settle its outgoing transactions if it has cover for its net settlement obligations in NBO.

The banks have agreed that RTGS transactions[17] shall be sent to NBO around 1:00 p.m. This synchronisation helps save liquidity in that the gridlock mechanism is used during the execution of the settlement. At the same time, the solution gives a certain amount of liquidity risk. In the event of a technical failure, a bank may become unable to send transactions, but may still receive transactions in NBO. In such a case, part of the liquidity in NBO may be locked in this bank's account. This may diminish the liquidity of the other banks. Both the NICS Operations Office and Norges Bank can in principle implement measures that reduce the risk of this occurring.

Two clearings of retail transactions are sent daily from NICS to NBO. The clearings are settled if all of the banks can cover their settlement obligations. If a bank is placed under public administration or has insufficient cover, the clearing will be rejected by Norges Bank. In that case, new positions will be calculated without this bank. In the worst case, the liquidity shortfall for the other banks may become so great that they are unable to cover their own settlement obligations. Liquidity simulations show that there is little risk of this given the current situation with regard to turnover and liquidity in NBO.

DnB NOR

DnB NOR is obligated to execute the settlement on its participating banks if the settlement has taken place in Norges Bank. Therefore, the banks that settle in DnB NOR, do not have a greater credit risk in the settlement than the banks that settle directly in NBO.

Settlement of transactions that is handled bilaterally between DnB NOR and the individual participating bank is on the condition that the participating banks have cover in the form of deposits, drawing rights and incoming payments.

[16] FIFO is an abbreviation for "First in first out".
[17] RTGS is an abbreviation for "Real Time Gross Settlement" and refers to real time settlement of individual transactions.

The risk that a bank with direct settlement in Norges Bank is unable to settle entails a certain liquidity risk for DnB NOR's participating banks. In such a case, the liquidity shortfall will be the same as the participating bank would have had if it had a settlement in NBO itself.

DnB NOR incurs a certain amount of risk because the bank is obligated to cover the settlement obligations of its participating banks in the retail settlement. The greatest potential loss to a bank associated with this arrangement is equivalent to the participating bank's net settlement obligation in the retail settlement. This risk will nevertheless be limited because the participating banks are small compared with DnB NOR. Moreover, DnB NOR monitors the participating banks' positions in the settlement as well as their general financial position. A bank that has insufficient cover can be excluded from the first retail settlement on the following settlement day. If the bank has not acquired cover by the next settlement day, the bank can be suspended from the settlement in DnB NOR.

Core Principle III is considered to be observed for NICS, observed for NBO, and observed for DnB NOR.

Core Principle IV

The system should provide prompt final settlement on the day of value, preferably during the day, and at a minimum at the end of the day.

NICS

NICS sends the clearing results of the retail payments to NBO twice daily. The banks will be penalised with fines by NICS if they delay the clearing of retail transactions. The RTGS transactions will be continuously sent for settlement in NBO.

NBO

The time for the actual and legal final settlement is clearly defined in the Account Maintenance and Settlement Agreement between Norges Bank and the banks. Final settlement occurs when Norges Bank transfers funds between the banks' accounts in Norges Bank. If the banks have cover, either with a sufficient balance or access to loans, this will normally occur at the same time that the transactions are received in NBO. A payment that is settled cannot be cancelled. The only exception is Norges Bank's opportunity to correct its own errors.

The transactions in RTGS will be settled continuously as they are received by NBO. The clearing of retail transactions will be settled twice daily at a specified time. If a bank has insufficient cover and delays the retail settlement, it will be charged a fine by Norges Bank.

DnB NOR

Positions that DnB NOR's participating banks have with regard to the banks with direct settlements in NBO, will ultimately be settled when the settlement takes place in Norges Bank. The settlement between DnB NOR and the participating banks occurs after NBO has sent a confirmation of an executed settlement to NICS, which then sends accounting data to DnB NOR. Transactions can be recalled up to the close of the day the day before the settlement day.

For the transactions that are not sent via NICS and NBO, i.e. payment orders to or from abroad and transactions that are settled bilaterally in DnB NOR, the transaction will be regarded as ultimately completed when the participating bank's settlement account has been debited or credited in DnB NOR.

The time for final settlement and the way in which a settlement is executed could have been more clearly defined in DnB NOR's agreement framework.

Core Principle IV is considered to be observed for NICS, observed for NBO, and observed for DnB NOR.

Core Principle V

A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.

In order to observe Core Principle V, the participants shall have established mechanisms that ensure settlement of all multilateral net transactions. As a result of this, the other banks' positions in the net settlement will not be changed, and the banks receive all the payments in the settlement at a specified time, even if a bank is unable to meet its settlement obligations.

The banks have not established this kind of solution for the retail settlement. If a bank cannot meet its settlement obligations, the clearing will be rejected by NBO after having waited in the queue, and NICS will calculate a new clearing result without this bank. The banks credit the customers after settlement, and so there will not be any associated credit risk in the event of this kind of rejection. The banks may incur liquidity problems as a result of changed positions if a bank is removed from the clearing. However, simulations show that this liquidity risk is limited in most cases. The current solution is regarded as good.

NICS

Pursuant to Section 4-2 of the Payment Systems Act, the participants in an interbank system can agree that a clearing shall be settled even if a bank is placed under public administration. To ensure sufficient liquidity for the settlement, the banks may provide guarantees. With this kind of solution, the execution of a settlement will be ensured even if a participant is not able to settle. However, the banks may incur expenses if they have to meet their guarantee settlement obligations. This kind of solution would thus entail a higher credit risk for the banks than the current solution.

NBO

The solution the banks have chosen entails that the retail settlement in NBO can be rejected if a participant has insufficient cover for its position. Although this may be regarded as a result of the choices the participants in NICS have made, it suggests that NBO has not completely observed Core Principle V.

DnB NOR

DnB NOR will assume the net positions of its participating banks in the clearing of retail transactions that will be settled in NBO. After the settlement in NBO, DnB NOR will debit or credit the accounts of these banks. Because settlement in DnB NOR is predicated on the settlement in NBO having taken place, the participating banks in DnB NOR will also be assigned a liquidity risk given that the retail settlement in NBO is not ensured.

DnB NOR is obligated to credit or debit its participating banks if the settlement in NBO is executed. This applies even if the biggest participant in DnB NOR does not have sufficient cover in the form of deposits or lines of credit. Therefore, the participants in DnB NOR are ensured a settlement if the settlement in NBO is executed.

Core Principle V is considered to be broadly observed for NICS, broadly observed for NBO, and observed for DnB NOR.

The principle is not applicable to the part of the settlement that is related to the RTGS transactions.

Core Principle VI

Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.

NICS

NICS does not settle transactions. Consequently, this principle is not applicable to NICS.

NBO

The settlement in NBO is done in central bank money, i.e. through debiting and crediting of the banks' accounts in Norges Bank.

DnB NOR

Compared with a settlement in a central bank, a settlement in a private bank will entail a certain amount of risk. If the private settlement bank is placed under public administration, the participating banks may lose deposits they have received by participating in the settlement. Moreover, claims on the settlement bank may become illiquid if the settlement bank has financial difficulties.

DnB NOR is assessed as creditworthy, and the claims on the bank are assessed as liquid. The participating banks do not need to have deposits with DnB NOR at times other than when the settlement is executed. In principle, participating banks with a line of credit do not need to have deposits in DnB NOR in order to take part in the settlement.

Core Principle VI is considered to be not applicable to NICS, observed for NBO, and broadly observed for DnB NOR.

Core Principle VII

The system should ensure a high degree of security and operational reliability and should have contingency arrangements for the timely completion of daily processing.

If one of the three systems develops a major operational failure, this will have extensive consequences. These will be greatest if NICS or NBO fails. That is due to the way in which the clearing and settlement hierarchy is built up and to the fact that the turnover is greatest in these systems. Hence, a failure in NBO or NICS will be more likely to have consequences for the other systems than a failure in DnB NOR. DnB NOR is dependent on both of the other systems because the majority of the transactions that are settled in DnB NOR, will first go through NICS for clearing and NBO for settlement.

NICS

The NICS Operations Office has authorisation for NICS pursuant to the Payment Systems Act. BBS (the Norwegian Banks' Payment and Central Clearing House Ltd.) takes care of the operation of NICS.

Disruptions in BBS are registered in BBS's *Non-conformance system.* A disruption will be followed up in accordance with internal rules and routines in the system. BBS is certified in accordance with the international standards ISO 27001 and ISO 9001, and is regularly audited by Det Norske Veritas. Moreover, the NICS Operations Office has introduced a certification of banks that send transactions to Norges Bank through NICS.

BBS has drawn up a *Disruption and Contingency Plan*, and routines have been established to keep this plan updated. The plan is documented in BBS's *Quality Assurance System*. The system describes routines that BBS's employees are to follow in various situations. If a disruption occurs in BBS, NICS has top priority. The contingency solutions are tested at least twice a year.

Data is continuously transmitted to back-up facilities. According to BBS, the back-up facilities can be fully operative within one hour after a fault occurs in the hardware.

Procedures have been devised to ensure that changes in NICS are approved by the responsible authority before they are implemented.

Norges Bank supervises NICS and receives periodic reports on any disruptions in operations from the NICS Operations Office. Follow-up of disruptions takes place in supervision meetings between Norges Bank and the NICS Operations Office. Norges Bank may require changes in NICS if the organisation of the system does not promote operational stability.

From a contingency perspective, it would be desirable to have alternating operations centres. The current back-up facilities are only brought into use in drills or if actual disruptive situations should so require. NICS is planning to establish a solution with two operations centres that are to be in daily use.

NBO

The technical operation of NBO has been outsourced to ErgoGroup. The security and delivery requirements to ErgoGroup have been stipulated in a Service Level Agreement. Delivery and any disruptions will be assessed monthly against these requirements. Representatives for ErgoGroup and Norges Bank go through security routines and assessment in semi-annual meetings. Whereas the service provider shall conduct regular technical inspections, Norges Bank oversees the settlement in NBO. ErgoGroup is certified in accordance with ISO 17799 and ISO 9001.

Back-up facilities and procedures are tested at least once a year. The tests are often conducted in collaboration with external participants, primarily BBS/NICS. Contingency arrangements for various types of interruptions and crises that may occur in NBO are explained in a separate document. The contingency plans for NBO are coordinated with other relevant departments in Norges Bank.

The subsystems in NBO have available back-up facilities. Application and transaction data are continuously copied to a back-up facility to ensure continuity of operations. One disadvantage of contingency arrangements based on copying data is that any errors in the data will also be copied to the back-up facilities. This risk is reduced through the periodic copying of balance and transaction data to a spreadsheet.

Norges Bank has introduced management tools for change management functions. Proposals for changes in NBO must be reported in to a special change forum that decides whether the relevant changes shall be implemented.

The current NBO is approaching its maximal technological life. In the long run, this will result in a gradually increasing risk. That is one of the reasons why Norges Bank is in the process of implementing a new Settlement System. This project will be referred to as NIBO[18]. According to plan, the new system will become operable in 2008. After that, NBO will become less dependent on having its own staff with special expertise because the supplier will be in charge of maintenance and system development.

From a contingency perspective, it would be desirable to have alternating operations centres, where the operations can be moved back and forth between different places. The current back-up facilities are only put to use in drills. As part of NIBO, alternating operations centres will be established.

CPSS (2001) recommends that the system operator be certified in accordance with an internationally accepted security standard. Unlike the ErgoGroup and BBS, Norges Bank is not certified in accordance with this kind of standard.

DnB NOR

DnB NOR has authorisation pursuant to the Payment Systems Act. The technical operation of DnB NOR's IT infrastructure has been outsourced to EDB Business Partner (EDB). The security and delivery requirements for EDB are specified in a contract. DnB NOR has daily meetings with EDB, where disruptions are one matter that will be discussed. EDB is certified in accordance with ISO 17799.

The operation of DnB NOR's interbank services has two back-up facilities, one continuity solution and one contingency solution. The continuity solution is installed in a mainframe at the regular operations centre. According to DnB NOR, operations can be transferred to this facility within fifteen minutes if a failure occurs in the ordinary mainframe. The contingency solution is a secondary computer that is located elsewhere. According to DnB NOR, this computer can become operable about four hours after a decision is made to put it into use. Emergency power and a generator have been installed in both

[18] NIBO stands for *nytt interbank oppgjørssystem* (New Interbank Settlement System).

locations. Data is continuously copied to the back-up facilities. The continuity solutions and contingency solutions are tested annually. The continuity solution has been put into use and has functioned adequately during disruptions in production.

System changes are tested in a test environment before they are implemented. In recent years, DnB NOR has implemented major changes without their giving rise to any material errors or disruptions.

The security routines and system documentation are evaluated and changed, if necessary, once a year. Responsibility and authorisation for information security and dealing with disruptions are specified. Disruptions are reported by users or automatically by the monitoring systems. DnB NOR has specified routines and schedules for the ways in which these notifications shall be followed up.

The participating banks have access to information about their settlement account in real time. DnB NOR monitors the execution of the settlement and will notify a bank if problems or abnormal events should occur; e.g. unusually large positions in the clearing of retail transactions.

DnB NOR's internal audit unit performs a yearly audit on the IT-systems that are included in DnB NOR's self-certification for participation in NICS. Norges Bank supervises DnB NOR's Settlement System and receives periodic reports on disruptions in operations. Disruptions are followed up in supervisory meetings between Norges Bank and DnB NOR. Norges Bank may specify requirements for DnB NOR if the system does not promote operational stability. *Kredittilsynet* (The Financial Supervisory Authority of Norway) shares responsibility with DnB NOR for the general supervision.

DnB NOR's standard for information security is developed around and tested against ISO 17799, but DnB NOR has chosen to not let itself be certified as recommended in Core Principle VII.

Core Principle VII is considered to be observed for NICS, observed for NBO, and observed for DnB NOR.

Core Principle VIII

The system should provide a means of making payments that is practical for its users and efficient for the economy.

NICS and NBO

NBO offers the banks settlement of clearings and gross transactions. Retail transactions that are netted by NICS will be settled twice daily. Gross transactions will usually be settled immediately after they are received by NBO. Whereas the gross settlement is expedient for large transaction that must be settled quickly, the net settlement will be suited for smaller transactions that do not have to be settled quickly. Since the banks may choose between gross and net settlement, the system facilitates efficient and practical solutions for various types of payments.

The NICS Operations Office sets the prices in NICS. The banks can influence the price structure in NBO, but Norges Bank requires full cost absorption.

Discussions with the users show that they think NICS and NBO are practical systems that are well-suited to their needs. Surveys confirm the impression that most users are well satisfied.

DnB NOR

DnB NOR offers its participating banks payment services through various Norwegian and foreign systems. Most of the payments will be settled through the retail settlement in NBO. DnB NOR credits or debits its participating banks' settlement accounts soon after the settlement in NBO has taken place.

The participating banks may be able to cover their positions in the clearing of retail transactions in the form of deposits or lines of credit. This indicates a lower liquidity cost for the banks than for direct settlements in NBO, which require deposits or collateralised loans. The prices for the services are set on the basis of commercial considerations, but are subject to competition, as the participants may choose another settlement bank.

Core Principle VIII is considered to be observed for NICS, observed for NBO, and observed for DnB NOR.

Core Principle IX

The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.

NICS

Banks and other institutions that are entitled, pursuant to Norwegian legislation, to conduct banking activities in Norway, may become members of NICS. Such an affiliation requires that the bank enter into relevant agreements in NICS.

A bank can be excluded from participation in NICS if it grossly or persistently violates the terms and conditions for participation in NICS. The NICS Operations Office may decide this exclusion. From the time when the Operations Office notifies the bank that it may be excluded, it will have thirty days to correct the situation. If a bank's violation of the terms and conditions will have considerable impact on other banks in NICS, that bank may be excluded at once until it has corrected the situation. The NICS Operations Office will notify the bank of this exclusion.

The agreements that regulate the banks' participation in NICS are available to the public.

NBO

Banks in Norway that enter into the necessary agreements may take part in NBO. This also includes subsidiaries and branches of foreign banks. Norges Bank has allowed banks that are established within the EEA to have a remote connection with NBO. These banks may not have loans or deposits overnight.

Norges Bank may cancel the agreement on participation in NBO with one month's notice. The cancellation shall be soundly warranted. In the event of material breach, Norges Bank can cancel the agreement immediately or suspend the participant.

The agreements that regulate the banks' participation in NBO are public information.

DnB NOR

Access to DnB NOR's interbank system is granted in accordance with an individual assessment based on commercial principles. In order to qualify for participation, the banks must have entered into an agreement with BBS on participation in NICS and accept the appurtenant framework of rules. Prices for participation will be agreed to with each individual participating bank or with banking groups.

A bank may be suspended from the settlement in DnB NOR if it is placed under public administration or does not meet the capital adequacy requirements[19]. If a bank fails to fulfil its obligations as specified in the agreements with DnB NOR in some other way and does not correct this within thirty days after receiving written notice, the bank may be suspended. A bank may also be removed from the retail settlement effective the following day if it defaults on the lines of credit it has received at DnB NOR. Necessary conditions for acceptance and suspension are specified in the agreements between DnB NOR and the participating banks.

A deviation with regard to principle IX is that neither information about prices nor other factors that may affect the access to DnB NOR's Settlement System are available to the public.

Core Principle IX is considered to be not applicable to NICS, observed for NBO, and broadly observed for DnB NOR.

Core Principle X

The system's governance arrangements should be effective, accountable and transparent.

NICS

The NICS Operations Office was established by the Finance Industry's General Services Office (FNS) and the Norwegian Savings Banks' Association's General Services Office (SBS). The Operations Office's decision-making authority is regulated in separate agreements. The Branch Board for banking and payment systems in FNS and the Board of SBS are the executive bodies for the NICS Operations Office. Among other things, these bodies shall approve strategies for the NICS Operations Office and approve investments in NICS. FNS and SBS also elect the Board of Directors of the NICS Operations Office. This Board of Directors is composed of the same representatives as the Board of Directors of *Fagutvalg for Avregning og Oppgjør* (FAO) (The Expert Committee for Clearing and Settlement).

[19] Regulations no. 875 of 22 October 1990 on minimum standards of capital adequacy for financial institutions and investment firms.

The management structure of BBS and NICS's operations centre are certified in accordance with ISO 9001. Norwegian banks own BBS directly and NICS indirectly through FNS and SBS.

NBO

Norges Bank has formally defined NBO's responsibility and decision-making structure. Decisions that are important to the banks will be sent out for consultation before they are finally approved by Norges Bank. Changes that are approved will be announced to the banks in circulars. The banks will thereby be given an opportunity to influence the outcome, and the decisions will be announced in a satisfactory manner.

The technical operation of NBO has been outsourced to ErgoGroup. ErgoGroup's obligations are regulated in a separate agreement, which includes a Service Level Agreement, among other things. ErgoGroup shall report on disruptions and be evaluated against specified criteria on a monthly basis. The management structure of ErgoGroup is certified in accordance with ISO 9001.

The banks pay annual fees and transaction charges for participation i NBO. One of Norges Bank's objectives is that the revenue shall provide full cost absorption for the settlement services.

NICS and NBO

The users have clearly expressed that they are satisfied with both NICS and NBO.

NICS and NBO are closely affiliated. That requires good coordination between the systems. There are grounds for presuming that the coordination is satisfactory for the most part at present.

DnB NOR

DnB NOR is the sole owner of DnB NOR's interbank system and is responsible for the operation and management of the system. The system's technical operation has been outsourced to EDB.

Through meetings and courses, DnB NOR keeps the participating banks updated on matters concerning the payment settlement. In the agreement framework it is also specified that DnB NOR must respond to any questions about the settlement by specific deadlines.

DnB NOR decides changes in the system, but the participating banks will be made aware of the changes before they are implemented. No formal routines have been established to ensure that the participants get an opportunity to comment before a decision is made to make changes. However, the fact that DnB NOR is subject to competition, indicates that they attach importance to the needs of the participating banks, also when it comes to changes in the services that are provided. Moreover, the participating banks may influence the organisation of NICS and thereby help set the premises for the private settlement banks.

Core Principle X is considered to be observed for NICS, observed for NBO, and observed for DnB NOR.

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General data

Table 1: Basic statistical data for Norway

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Population (per 1 Jan., million)	4.39	4.42	4.45	4.48	4.50	4.52	4.55	4.58	4.61	4.64
GDP, market value (NOK billion)	1 119.18	1 140.36	1 240.43	1 481.24	1 536.89	1 532.31	1 593.83	1 743.04	1 942.89	2 147.99
Mainland GDP, market value (NOK billion)	919.03	992.60	1 045.34	1 113.89	1 179.59	1 224.64	1 274.83	1 355.31	1 445.96	1 563.08
GDP per capita (NOK thousand)	254.78	258.14	279.04	330.63	341.53	339.01	350.29	380.58	421.45	462.93
1 USD in NOK (year-end)	7.32	7.60	8.04	8.85	9.01	6.97	6.68	6.04	6.77	6.26
1 euro in NOK (year-end. ECU to end-1998)	8.06	8.90	8.08	8.23	7.97	7.29	8.42	8.24	7.99	8.24

Table 2: Technological infrastructure in Norway

	1997	1998	1999	2000	2001 (July)	2002 (July)	2003 (July)	2004 (July)	2005 (July)	2006 (July)
Fixed network telephone subscribers	**2 474 964**	**2 475 490**	**2 445 734**	**2 400 785**	**2 362 625**	**2 316 556**	**2 268 183**	**2 205 902**	**2 147 998**	**2 084 456**
PSTN	2 325 010	2 165 530	1 913 657	1 682 603	1 603 525	1 496 119	1 445 236	1 394 088	1 345 719	1 224 626
ISDN	149 954	309 960	532 077	703 843	741 600	800 451	798 751	768 785	682 742	564 428
Cable TV network telephone subscribers			:	14 325	17 500	19 986	23 301	23 155	22 037	16 332
Other types of fixed network links				14	:	:	895	19 875	97 500	279 070
Mobile telephone subscribers	**1 676 763**	**2 106 414**	**2 744 793**	**3 339 936**	**3 411 962**	**3 699 471**	**3 869 792**	**4 295 042**	**4 615 337**	**4 886 755**
Broadband subscribers					**44 852**	**136 153**	**280 111**	**517 148**	**835 695**	**1 126 921**

Source: Norway Post and Telecommunications Authority

Settlement media in Norway

Table 3: Settlement media used by the public (at year-end, in NOK million)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
M1 + other short-term deposits (M2)	**590 207**	**616 938**	**683 855**	**753 270**	**818 859**	**882 913**	**904 216**	**972 012**	**1 084 205**	**1 227 188**
Narrow money supply (M1)	**268 754**	**278 716**	**342 362**	**370 378**	**384 631**	**399 711**	**427 689**	**472 058**	**550 946**	**679 957**
Banknotes and coins	42 215	42 142	43 366	42 523	42 038	40 282	41 685	43 340	46 530	48 247
Deposits in current accounts	226 539	236 574	298 996	327 855	342 593	359 429	386 004	428 718	504 416	631 710
Other deposits	**278 741**	**292 820**	**295 820**	**326 350**	**370 171**	**409 704**	**407 457**	**423 185**	**435 529**	**472 758**
Certificates of deposit + units in money market funds	**42 712**	**45 402**	**45 673**	**56 542**	**64 057**	**73 498**	**69 070**	**76 769**	**97 730**	**74 473**

Table 4: Settlement media used by banks (in NOK million)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Cash holdings in banks at year-end	4 240	4 395	5 116	4 879	5 290	5 063	4 980	4 649	5 733	6 987
Cash holdings, annual average	3 835	3 940	4 519	4 431	4 817	4 675	4 409	4 457	4 960	6 198
Banks' sight deposits in the central bank[1] at year-end	8 139	4 716	18 330	11 540	17 438	33 348	22 117	35 240	30 854	19 459
Sight deposits, annual average	8 463	6 986	8 016	9 233	11 804	15 647	24 690	21 337	28 666	24 536
Central bank lending (F-loans + D-loans) at year-end	547	6 918	13 600	14 160	12 443	19	10 460	7	17 769	56 959
Lending (F-loans + D-loans), annual average	790	1 225	4 385	5 104	13 356	538	2 978	18 788	14 694	34 411
Banks' deposits from money-holding sector at year-end	14 828	13 421	13 594	15 774	16 633	16 027	19 982	18 383	21 437	32 022
Deposits from money-holding sector, annual average	16 107	15 830	18 538	18 173	20 420	16 737	23 148	23 897	22 723	28 605

[1] The figures show the daily average in the latter half of December

Table 5: Banknotes and coins. Annual average (in NOK million)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total	**41 221**	**43 578**	**43 837**	**43 571**	**42 947**	**41 767**	**41 562**	**43 728**	**45 887**	**49 218**
Total banknotes	**38 284**	**40 487**	**40 566**	**40 119**	**39 271**	**37 811**	**37 429**	**39 429**	**41 382**	**44 523**
1000-krone	26 711	27 773	27 290	26 336	24 713	22 599	22 167	23 555	24 649	25 818
500-krone	4 068	4 875	5 588	6 107	6 921	7 626	7 732	8 278	9 060	10 374
200-krone	2 630	3 650	3 949	4 275	4 446	4 573	4 674	4 792	4 819	5 296
100-krone	4 246	3 473	3 027	2 684	2 464	2 270	2 091	2 012	2 021	2 119
50-krone	629	717	712	717	727	744	765	793	833	916
Total coins	**2 937**	**3 090**	**3 271**	**3 452**	**3 676**	**3 955**	**4 132**	**4 299**	**4 506**	**4 695**
20-krone	655	779	873	966	1 124	1 387	1 561	1 667	1 778	1 849
10-krone	1 010	1 030	1 046	1 087	1 111	1 085	1 051	1 049	1 076	1 145
5-krone	415	440	474	487	497	505	515	538	563	598
1-krone	518	561	590	617	641	666	686	718	753	799
0.5 krone	142	150	157	165	174	182	191	199	208	218
0.25 krone	40	:	:	:	:	:	:	:	:	:
0.10 krone	131	131	130	130	130	130	129	128	128	86
Copper	26	:	:	:	:	:	:	:	:	:

Payments infrastructure

Table 6: Institutional infrastructure

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of banks						**153**	**152**	**148**	**149**	**147**
Savings banks						129	129	127	126	124
Commercial banks						16	15	13	14	15
Number of foreign bank branches in Norway						8	8	8	9	8
Number of bank branches	1 477	1 468	1 457	1 429	1 414	1 376	1 348	1 234	1 234	1 259
Number of Norway Post branches	1 618	1 280	1 257	1 261	1 320	1 433	1 480	1 504	1 523	1 511
Electronic money institutions							4	5	5	4

Table 7: Number of agreements

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Internet banking agreements				**933 335**	**1 340 661**	**1 934 318**	**2 429 694**	**2 976 690**	**3 282 793**	**4 006 396**
Internet banking agreements- retail customers									3 221 839	3 678 186
Internet banking agreements- corporate customers									60 954	328 210
Agreements to offer *eFaktura* - corporate customers										330
Agreements on receipt of *eFaktura* - retail customers										2 149 356
Company terminal giro agreements										16 484
Mail giro agreements				2 687 420	2 361 031	1 787 462	1 707 428	1 540 768	1 453 825	1 206 254
Direct debit agreements (*Avtalegiro* and *Autogiro*)				3 500 000	4 044 848	4 483 286	4 901 219	5 505 933	6 305 218	7 523 461
Avtalegiro - payees				6 041	6 473	6 883	7 194	7 905	8 761	9 554
Autogiro - payees				1 174	1 200	1 265	1 232	1 187	1 243	1 441

Table 8: Number of issued cards (thousands), number of functions in issued cards (thousands) and number of terminals

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of issued cards	**4 296**	**4 768**	**5 220**	**5 611**	**6 081**	**6 395**	**6 931**	**7 616**	**7 872**	**9 187**
Cards with a chip	:	:	:	:	:	:	:	:	:	950
Cards with a magnetic strip	:	:	:	:	:	:	:	:	:	8 237
Number of functions in issued cards	**6 583**	**7 527**	**8 406**	**9 056**	**10 075**	**10 575**	**11 322**	**12 298**	**12 449**	**14 168**
Debit functions	**5 573**	**6 278**	**6 853**	**7 419**	**7 991**	**8 212**	**8 600**	**9 326**	**9 107**	**10 138**
BankAxept	3 227	3 561	3 734	4 020	4 287	4 362	4 527	4 985	4 894	5 537
Payment cards issued by international card companies	2 346	2 717	3 119	3 399	3 704	3 850	4 073	4 341	4 214	4 601
Billing functions (payment cards issued by international card companies)	**343**	**369**	**395**	**416**	**445**	**438**	**451**	**470**	**451**	**477**
Credit functions	**667**	**880**	**1 158**	**1 221**	**1 638**	**1 925**	**2 271**	**2 502**	**2 891**	**3 553**
National credit cards	514	620	687	577	630	681	646	535	546	548
Payment cards issued by international card companies	153	260	471	644	1 008	1 244	1 624	1 967	2 345	3 005
Number of terminals that accept BankAxept cards	**48 488**	**54 179**	**60 749**	**67 445**	**73 832**	**82 294**	**93 456**	**94 386**	**96 591**	**99 880**
ATMs	**1 896**	**1 944**	**2 007**	**2 119**	**2 144**	**2 188**	**2 217**	**2 180**	**2 184**	**2 113**
Payment terminals (EFTPOS)	**46 592**	**52 235**	**58 742**	**65 326**	**71 688**	**80 106**	**91 239**	**92 206**	**94 407**	**97 767**
Owned by banks	41 299	46 849	:	55 208	59 184	65 374	66 207	68 197	66 786	74 303
Owned by others	5 293	5 386	:	10 118	12 504	14 732	25 032	24 009	27 621	23 464
Number of locations with payment terminals (EFTPOS) that accept BankAxept cards	**32 761**	**38 029**	**42 164**	**47 434**	**49 328**	**52 705**	**59 100**	**63 976**	**73 242**	**78 656**

Customer-oriented payment services

Table 9: Use of payment services (in millions of transactions)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total	**564.3**	**634.1**	**695.3**	**760.9**	**848.3**	**960.4**	**1 039.3**	**1 144.9**	**1 235.5**	**1 369.2**
Debit and credit transfers (Giro)	**343.9**	**360.0**	**371.3**	**370.4**	**397.5**	**440.5**	**442.8**	**465.6**	**480.4**	**509.7**
Electronic[1]	146.5	173.9	202.7	221.0	268.1	331.3	348.9	384.3	411.8	457.8
Paper-based	197.4	186.2	168.5	149.3	129.3	109.3	93.9	81.3	68.6	51.9
Payment cards (goods purchases)	**207.5**	**264.6**	**317.7**	**386.5**	**448.0**	**517.8**	**595.0**	**678.1**	**754.2**	**858.8**
Electronic	200.9	256.0	307.3	378.4	439.0	508.0	584.7	664.2	737.9	838.2
Manual	6.6	8.6	10.4	8.2	9.0	9.8	10.3	13.9	16.3	20.6
Cheques	**12.9**	**9.4**	**6.3**	**4.0**	**2.9**	**2.0**	**1.5**	**1.2**	**0.8**	**0.7**

1 Number of electronic giros up to end-2001 does not include miscellaneous credit transfers, e.g. standing orders.

Table 10: Debit and credit transfers (giros) (in millions of transactions)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total	**343.9**	**360.0**	**371.3**	**370.4**	**396.7**	**440.3**	**442.8**	**465.6**	**480.4**	**509.7**
Credit transfers[1]	**282.7**	**305.6**	**318.3**	**320.9**	**343.5**	**393.9**	**395.5**	**418.2**	**431.6**	**460.0**
Electronic	**122.5**	**147.5**	**172.7**	**192.1**	**234.5**	**299.9**	**314.8**	**348.5**	**371.9**	**416.0**
Company terminal giro	109.1	126.1	129.9	128.7	143.8	153.2	164.4	160.2	95.8	73.1
Internet banking	:	3.2	14.5	34.6	62.0	81.4	101.5	138.4	227.8	292.4
Internet banking solutions for retail customers	-	3.2	14.5	34.6	62.0	:	91.6	112.0	131.8	144.3
Internet banking solutions for corporate customers	-	-	-	-	-	:	9.9	26.4	96.0	148.1
Telephone giros	13.4	18.2	28.3	28.8	28.7	26.8	25.5	24.8	21.8	16.9
Miscellaneous other electronic credit transfers	:	:	:	:	:	38.5	23.4	25.1	26.4	33.6
Paper-based	**160.2**	**158.1**	**145.6**	**128.9**	**109.1**	**94.0**	**80.6**	**69.7**	**59.8**	**44.0**
Company terminal giros and Internet banking as money order	14.3	13.7	9.4	6.3	5.6	4.9	4.2	3.0	2.6	1.0
Mail giros	104.3	106.9	107.0	90.2	74.4	61.7	52.1	44.6	38.0	32.6
Giros delivered at the counter - account debits	27.4	24.5	29.2	32.4	28.3	27.1	24.4	22.0	19.2	10.4
Miscellaneous giros registered in banks[2]	14.2	13.0	-	0.0	0.8	0.3	0.0	0.0	0.0	0.0
Direct debits	**24.0**	**26.3**	**30.0**	**29.0**	**33.6**	**31.3**	**34.1**	**35.8**	**39.9**	**41.8**
Giros delivered at the counter - cash payments	**37.1**	**28.1**	**22.9**	**20.4**	**19.5**	**15.0**	**13.2**	**11.6**	**8.9**	**7.8**

1 Figures for credit transfers do not include miscellaneous credit transfers, including standing orders in the period 1994 - 2001.

2 Miscellaneous giros registered in banks includes both cash payments and account debits.

Table 11a: Payment cards: Use of cards (in millions of transactions) [1]

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total use of Norwegian cards (in Norway and abroad)	**314.4**	**374.7**	**429.1**	**496.8**	**563.6**	**631.1**	**704.7**	**786.6**	**862.2**	**965.1**
Goods purchases	**207.5**	**264.6**	**317.7**	**386.5**	**448.0**	**517.8**	**595.0**	**678.1**	**754.5**	**858.5**
Goods purchases without cashback	:	:	:	283.8	323.8	385.2	456.8	533.6	618.5	776.7
Goods purchases with cashback	:	:	:	102.7	124.2	132.6	138.2	144.6	135.9	81.8
Cash withdrawals without goods purchases	**106.9**	**110.1**	**111.4**	**110.3**	**115.7**	**113.3**	**109.7**	**108.5**	**107.8**	**106.6**
Use of Norwegian cards abroad	**12.5**	**15.8**	**19.0**	**22.6**	**26.2**	**31.5**	**36.2**	**38.3**	**39.2**	**50.8**
Goods purchases	8.7	11.3	13.2	16.3	19.0	23.2	27.0	29.8	30.8	42.2
Cash withdrawals	3.8	4.5	5.8	6.3	7.1	8.3	9.2	8.6	8.3	8.5
Use of Norwegian cards broken down by function										
Debit functions	**301.2**	**358.0**	**410.0**	**473.7**	**536.5**	**601.4**	**669.5**	**743.6**	**811.4**	**904.2**
BankAxept	285.1	338.0	385.0	441.1	496.7	548.3	615.3	681.7	745.8	817.4
Payment cards issued by international card companies	16.1	20.0	25.0	32.6	39.8	53.1	54.2	61.9	65.6	86.8
Billing functions (Payment cards issued by international card companies)	**10.6**	**11.7**	**12.5**	**13.9**	**14.8**	**13.9**	**14.8**	**16.6**	**21.1**	**35.4**
Credit functions	**2.6**	**4.9**	**6.7**	**9.2**	**12.3**	**15.7**	**20.4**	**26.4**	**31.9**	**25.5**
National credit cards	1.4	1.7	1.9	2.9	3.6	4.5	5.3	5.7	6.1	6.5
Payment cards issued by international card companies	1.2	3.2	4.8	6.3	8.8	11.2	15.1	20.7	25.8	19.0
Use of foreign cards in Norway	**4.8**	**5.6**	**6.7**	**7.1**	**7.8**	**8.6**	**9.5**	**10.8**	**13.6**	**15.0**
Goods purchases	4.2	4.3	5.1	6.0	6.5	7.3	8.1	9.3	12.4	13.2
Cash withdrawals	0.5	1.3	1.6	1.2	1.3	1.4	1.4	1.5	1.3	1.7

1 Figures for the years 1999 - 2001 do not include the use of international payment cards and national credit cards in terminals owned by entities other than banks and oil companies. Figures for the use of international payment cards in payment terminals also includes the use of cards on the Internet.

Table 11b: Payment cards: Use of payment terminals (in millions of transactions)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Use of Norwegian terminals	**:**	**:**	**:**	**514.8**	**578.3**	**633.3**	**709.6**	**780.9**	**857.3**	**945.9**
Cash withdrawals from ATMs	104.0	107.2	107.4	106.1	109.0	103.5	102.1	99.3	98.7	95.8
Goods purchases in EFTPOS terminals that accept BankAxept	234.7	288.6	338.8	391.6	446.1	500.8	575.6	638.5	718.1	797.6
Of which BankAxept goods purchases with cashback	:	:	:	102.7	124.2	132.6	138.2	144.6	135.9	81.8
Goods purchases in other Norwegian payment terminals	:	:	:	17.1	23.2	29.0	31.9	43.1	40.5	52.6
Use of Norwegian cards in Norwegian terminals	**:**	**:**	**:**	**471.4**	**534.1**	**591.2**	**665.8**	**743.5**	**819.0**	**907.9**
Cash withdrawals from ATMs	**:**	**:**	**:**	**103.3**	**107.7**	**102.1**	**100.3**	**99.2**	**98.8**	**94.7**
BankAxept	100.9	103.2	102.3	98.6	102.0	96.6	95.6	93.2	91.7	88.7
National credit cards	0.7	0.8	0.9	1.0	1.2	1.0	1.4	1.1	0.8	0.8
Cards issued by international card companies	:	:	:	3.8	4.5	4.5	3.3	4.9	6.3	5.2
Goods purchases in payment terminals	**:**	**:**	**:**	**368.1**	**426.4**	**489.0**	**565.5**	**644.3**	**720.2**	**813.2**
BankAxept - goods purchases (including purchases with cashback) in EFTPOS terminals	184.2	234.8	282.7	342.5	394.7	451.7	519.7	588.4	654.1	728.7
National credit cards - goods purchases	:	:	:	1.3	2.0	3.0	3.8	4.1	4.8	5.3
Cards issued by international card companies - goods purchases	:	:	:	24.2	29.7	34.4	41.9	51.8	61.3	79.2

Table 12: Cross-border transfers registered in the Register of Crossborder Transactions and Currency Exchange (in thousands of transactions)

	2006
Transfers from Norway abroad	**5 422.5**
SWIFT	5 171.1
Foreign currency cheques	97.0
Other transfers (MoneyGram, Western Union, etc.)	154.5
Transfers to Norway from abroad	**2 784.8**
SWIFT	2 773.7
Foreign currency cheques	3.2
Other transfers (MoneyGram, Western Union, etc.)	7.9

Table 13: Use of payment services (in NOK billion)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total	**4 683.4**	**4 781.9**	**5 875.4**	**5 894.4**	**5 951.8**	**6 225.1**	**6 934.7**	**8 963.5**	**8 283.9**	**9 210.2**
Debit and credit transfers (giros)	**4 358.8**	**4 464.6**	**5 572.4**	**5 627.7**	**5 695.1**	**5 943.5**	**6 653.3**	**8 656.0**	**7 945.4**	**8 841.6**
Electronic[1]	2 935.6	3 223.2	4 444.4	4 720.0	5 156.0	5 457.2	6 242.0	8 283.6	7 662.1	8 580.1
Paper-based	1 423.2	1 241.4	1 127.9	907.7	539.0	486.3	411.3	372.4	283.4	261.5
Payment cards (goods purchases)	**104.1**	**134.6**	**164.1**	**164.3**	**184.2**	**224.9**	**236.6**	**265.0**	**305.5**	**352.8**
Electronic	97.4	125.3	151.2	156.2	175.4	215.4	227.9	254.1	289.5	336.9
Manual	6.7	9.3	12.9	8.1	8.9	9.5	8.7	10.9	16.0	15.9
Cheques	**220.5**	**182.7**	**138.9**	**102.4**	**72.5**	**56.6**	**44.9**	**42.5**	**32.9**	**15.8**

Table 14: Debit and credit transfers (giros) (in NOK billion)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total	**4 358.8**	**4 464.6**	**5 572.4**	**5 627.7**	**5 695.1**	**5 943.5**	**6 653.3**	**8 656.0**	**7 945.4**	**8 841.6**
Credit transfers[1]	**4 046.1**	**4 194.2**	**5 265.1**	**5 314.2**	**5 410.5**	**5 714.4**	**6 431.5**	**8 396.5**	**7 648.6**	**8 560.8**
Electronic	**2 802.0**	**3 079.4**	**4 281.0**	**4 517.9**	**4 971.2**	**5 308.0**	**6 077.4**	**8 105.1**	**7 449.2**	**8 356.6**
Company terminal giros	2 779.2	3 041.1	4 185.7	4 372.2	4 716.2	4 678.4	5 225.3	6 553.4	2 976.6	2 339.8
Internet banking	:	7.3	39.7	93.3	197.3	409.1	650.7	1 351.8	4 272.8	5 626.7
Internet banking solutions for retail customers	:	7.3	39.7	93.3	197.3	:	332.6	436.4	517.3	585.4
Internet banking solutions for corporate customers	-	-	-	-	-	:	318.1	915.4	3 755.6	5 041.3
Telephone giros	22.8	31.0	55.6	52.5	57.6	54.3	51.0	48.4	43.8	37.5
Various other electronic credit transfers	:	:	:	:	:	166.3	150.4	151.5	155.9	352.6
Paper-based	**1 244.1**	**1 114.9**	**984.1**	**796.2**	**439.3**	**406.4**	**354.1**	**291.4**	**199.4**	**204.2**
Company terminal giros and Internet banking as money order	35.8	30.6	56.5	44.0	42.0	36.8	33.4	27.2	4.5	11.7
Mail giros	830.2	649.8	597.6	527.7	195.5	175.7	184.6	161.1	139.0	117.7
Giros delivered at the counter - account debits	247.8	308.5	330.1	224.6	189.0	190.0	136.1	103.1	55.9	74.7
Miscellaneous giros registered in banks[2]	130.3	126.0	-	0.0	12.9	3.9	0.0	0.0	0.0	0.0
Direct debits	**133.6**	**143.8**	**163.5**	**202.0**	**184.8**	**149.2**	**164.6**	**178.5**	**212.9**	**223.5**
Giros delivered at the counter - cash payments	**179.1**	**126.5**	**143.8**	**111.5**	**99.7**	**79.8**	**57.2**	**81.0**	**83.9**	**57.3**

1 Figures for credit transfers do not include various credit transfers, including standing orders in the period 1994 - 2001.

2 Miscellaneous giros registered in banks include both cash payments and account debits.

Table 15a: Payment cards: Use of cards (in NOK billion)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total use of Norwegian cards (in Norway and abroad)[1]	**204.6**	**242.6**	**277.1**	**315.9**	**355.7**	**382.9**	**411.6**	**440.0**	**481.0**	**511.5**
Goods purchases	104.1	134.6	164.1	164.3	184.2	224.9	236.6	265.0	305.6	352.0
Cashback from EFTPOS terminals	:	:	:	36.9	44.7	47.5	48.3	48.3	49.4	28.8
Cash withdrawals without goods purchases	100.5	108.0	113.0	114.6	126.8	110.4	126.6	126.7	126.0	130.7
Use of Norwegian cards abroad	**12.3**	**15.8**	**19.5**	**23.3**	**25.6**	**29.3**	**33.6**	**34.4**	**35.7**	**39.9**
Goods purchases	7.0	9.4	11.1	13.8	15.0	17.4	20.4	21.8	23.6	27.5
Cash withdrawals	5.3	6.5	8.4	9.5	10.6	11.9	13.3	12.6	12.1	12.4
Use of Norwegian cards broken down by function										
Debit functions	**186.1**	**219.9**	**251.2**	**283.4**	**320.0**	**344.5**	**371.0**	**393.5**	**429.0**	**448.2**
BankAxept	173.3	204.4	232.3	259.8	291.8	309.7	335.7	354.1	386.8	399.0
Payment cards issued by international card companies	12.8	15.5	18.8	23.6	28.2	34.8	35.4	39.4	42.2	49.2
Billing functions (payment cards issued by international card companies)	**12.8**	**14.3**	**15.3**	**17.2**	**18.1**	**17.5**	**16.9**	**18.1**	**21.6**	**29.7**
Credit functions	**5.7**	**8.4**	**10.8**	**15.4**	**17.6**	**20.8**	**23.8**	**28.4**	**30.1**	**33.6**
National credit cards	4.2	4.5	5.1	6.7	7.4	8.3	7.5	7.6	5.3	8.7
Payment cards issued by international card companies	1.5	3.9	5.7	8.7	10.3	12.5	16.2	20.8	24.8	24.9
Use of foreign cards i Norway[2]	**3.8**	**4.4**	**5.5**	**5.4**	**5.8**	**5.9**	**6.9**	**8.5**	**9.6**	**10.1**
Goods purchases	3.1	3.0	4.0	3.9	4.1	4.2	5.0	6.3	7.7	7.7
Cash withdrawals	0.7	1.5	1.5	1.5	1.7	1.7	1.9	2.2	1.8	2.4

1 Figures for the years 1999 - 2001 do not include the use of international payment cards and national credit cards in terminals owned by entities other than banks and oil companies. Figures for the use of international payment cards in payment terminals also include the use of cards on the Internet.

2 Figures for the use of international payment cards in EFTPOS terminals to end-2005 also include the use of cards on the Internet.

Table 15b: Payment cards: Use of payment terminals (in NOK billion)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Use of Norwegian terminals	**:**	**:**	**:**	**:**	**:**	**367.0**	**395.1**	**419.7**	**454.8**	**479.3**
Cash withdrawals from ATMs	94.5	102.1	105.6	106.3	115.8	114.0	115.0	113.1	112.0	115.1
Goods purchases in EFTPOS terminals that accept BankAxept	100.8	127.1	:	:	:	183.5	211.2	231.2	272.6	305.8
Cashback with goods purchases with BankAxept cards	:	:	:	36.9	44.7	47.5	48.3	48.3	49.4	28.8
Goods purchases at other Norwegian payment terminals	:	:	:	15.9	18.3	21.9	20.5	27.1	20.8	29.6
Use of Norwegian cards in Norwegian terminals	**:**	**:**	**:**	**288.1**	**324.9**	**346.0**	**375.6**	**401.0**	**439.2**	**460.3**
Cash withdrawals from ATMs	**:**	**:**	**:**	**103.6**	**114.3**	**112.4**	**112.6**	**112.8**	**112.1**	**114.3**
BankAxept	90.5	97.2	99.2	97.9	107.0	105.0	105.7	104.2	101.9	104.1
National credit cards	0.7	0.9	1.1	1.4	1.4	1.4	2.1	1.7	1.3	1.8
Cards issued by international card companies	:	:	:	4.4	5.9	6.0	4.9	7.0	8.9	8.5
Cashback with goods purchases with BankAxept cards	**:**	**:**	**:**	**36.9**	**44.7**	**47.5**	**48.3**	**48.3**	**49.4**	**28.8**
Goods purchases in payment terminals	**:**	**:**	**:**	**147.5**	**165.8**	**186.0**	**214.6**	**239.8**	**277.7**	**317.2**
BankAxept - goods purchases in EFTPOS terminals	82.8	107.2	133.1	125.0	140.1	157.2	181.6	201.7	235.4	266.1
National credit cards - goods purchases	:	:	:	2.7	3.2	4.3	5.0	5.1	5.7	5.9
Cards issued by international card companies - goods purchases	:	:	:	19.8	22.5	24.6	28.0	33.1	36.6	45.2

Table 16: Cross-border transfers registered in the Register of Crossborder Transactions and Currency Exchange (in NOK million)

	2006
Transfers from Norway abroad	**34 514 730.7**
SWIFT	33 748 498.9
Foreign currency cheques	766 231.6
Other transfers (MoneyGram, Western Union, etc.)	0.2
Transfers to Norway from abroad	**9 777 425.9**
SWIFT	9 772 241.8
Foreign currency cheques	5 184.0
Other transfers (MoneyGram, Western Union, etc.)	0.0

Interbank

Table 17: Average daily turnover in clearing and settlement systems (transactions)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
NICS										
SWIFT Gross/RTGS			331	282	303	300	596	611	532	547
SWIFT Net			4 258	4 344	4 719	4 925	5 155	4 480	4 744	5 301
NICS Retail (million)			2-3	3.0	3.4	3.7	4.0	4.3	4.7	5.1
NBO										
NICS SWIFT RTGS										547
RTGS Gross transactions not including NICS										200
NICS SWIFT Net										47
NICS Retail										119
VPO										87
VPS Clearing										12
Manual transfers										20

Table 18: Average daily turnover in clearing and settlement systems (in NOK billion)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
NICS			**165-170**	**175.1**	**211.4**	**212.5**	**248.7**	**195.7**	**200.8**	**224.8**
SWIFT Gross/RTGS			127.0	123.0	151.2	149.5	187.8	129.4	135.5	155.3
SWIFT Net			18.0	16.9	16.1	16.2	12.6	5.2	5.7	6.7
NICS Retail			20-25	35.1	44.1	46.8	48.3	61.1	59.6	62.8
NBO			**ca 147,2**	**144.0**	**172.1**	**169.2**	**206.8**	**152.3**	**160.8**	**185.2**
NICS SWIFT RTGS			127.3	123.2	150.7	149.5	187.7	128.9	135.5	155.3
RTGS Gross transactions not including NICS			8.3	9.3	6.9	4.8	7.2	11.1	12.1	16.1
NICS SWIFT Net			5.2	3.8	5.3	5.5	2.1	1.0	0.9	1.0
NICS Retail			ca 4	5.5	6.8	6.9	6.7	7.6	8.5	8.1
VPO and VPS Clearing (formerly NOS)			2.4	2.2	2.3	2.5	3.1	3.7	3.8	4.7
VPO										4.4
VPS Clearing										0.3

Table 19: Number of participants in clearing and settlement systems (at year-end)

	2006
Norges Bank's settlement system (NBO)	23
DnB NOR	104
Sparebank 1 Midt-Norge	17
Norwegian Interbank Clearing System (NICS)	146
The Securities Settlement System (VPO)	82

Table 20: Participation in SWIFT

	2002		2003		2004		2005		2006	
	Norwegian	Total	Norwegian	Total	Norwegian	Total	Norwegian	Total	Norwegian	Total
Total	**33**	**7 465**	**34**	**7 527**	**34**	**7 667**	**32**	**7 863**	**32**	**8 103**
Members	22	2 203	22	2 312	14	2 280	14	2 229	13	2 289
Sub-members/domestic users covered by members abroad	7	3 079	7	3 051	12	3 019	11	3 060	11	3 124
Participants	4	2 183	5	2 164	8	2 368	7	2 574	8	2 690

Table 21: SWIFT message traffic to/from Norway (in thousands of transactions)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of messages sent			8 124	9 238	10 521	11 239	12 931	18 590	22 060	30 090
Number of messages received			6 051	6 920	8 163	8 747	10 391	13 650	13 500	15 250
Global SWIFT traffic			1 058 836	1 273 913	1 533 906	1 817 444	2 047 564	2 299 074	2 518 290	2 864 540

Prices

Table 22: Price list for participation in Norges Bank's settlement system (NBO), valid from 1 January 2007 (in NOK)

Annual fees	Basic price for participation	Retail settlement	SWIFT settlement	Securities settlement	Derivative settlement	Basic fee for collateral for loans	Supplementary fee for collateral deposited abroad	Scandinavian Cash Pool
Participant category								
Banks with total assets over NOK 100 billion	550 000	100 000	100 000	100 000	100 000	200 000	150 000	15 000
Banks with total assets between NOK 40 and 100 billion	450 000	80 000	80 000	80 000	80 000	150 000	125 000	15 000
Banks with total assets between NOK 10 and 40 billion	350 000	60 000	60 000	60 000	60 000	100 000	100 000	15 000
Banks with total assets under NOK 10 billion	20 000	40 000	40 000	40 000	40 000	15 000	75 000	15 000
Investment firms				100 000				
Money brokers	20 000							

	Transaction prices		Prices for pledging collateral		
Participant category	STP transactions	Manual gross transactions	Changes in collateral	Application for approval of new securities (ISIN) in VPS	Application for approval of new securities (ISIN) abroad
Banks	1	60	200	1 500	3 000
Money brokers		60			

Participant category	Initial charge
Banks / Investment firms / Money brokers	50 000

Table 23: Price list for banks' delivery and withdrawal of cash to and from Norges Bank's depot

Type of fee/charge[1]	**Delivery**	**Withdrawal**
Handling fee, fixed share		
Banknotes, per transaction	100	100
Coins, per transaction	100	100
Handling fee, variable share		
Banknotes, per packet of 500 notes	6	6
Coins, per standard unit (150 rolls)	30	30
Incorrect sorting, error in delivery charge[2]		
Too many good notes delivered as damaged notes	0	
Counterfeit notes	0	

[1] Prices do not apply to exempt exchange transactions or delivery of banknotes and coins not fit for circulation

[2] Charges will possibly be introduced at a later date.

Table 24: Prices for domestic payment transactions, receipt of payments and cash withdrawals. Weighted average (in NOK) in selected banks on 1 January each year for customers other than programme customers[1]

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Payment transactions										
Electronic giro services										
Telephone giros	2.33	2.31	2.38	2.45	2.44	2.38	2.14	2.15	2.19	2.23
Internet banking - solutions for retail customers										
Payment with CID	1.98	2.03	1.94	1.91	1.88	1.95	1.95	2.03	2.08	2.04
Payment with notification										2.37
Direct debits (Avtalegiro)							2.09	2.03	2.12	2.08
Direct Remittance without notification	1.64	1.59	2.07	2.73	2.82	2.85	2.99	3.28	3.27	3.40
Direct Remittance with notification	3.53	3.44	4.02	4.25	4.78	4.88	5.19	5.46	5.53	5.43
Direct Remittance with CID	1.02	0.99	1.03	1.31	1.38	1.38	1.47	1.52	1.57	1.58
Other company terminal giro without notification	1.26	1.20	1.91	1.96	2.07	2.03	1.62	2.78	1.71	2.51
Other company terminal giro with notification	3.08	3.03	3.14	3.58	3.61	3.68	3.80	3.62	3.74	3.85
Other company terminal giro with CID	0.91	0.92	0.88	0.98	0.99	1.01	1.03	1.55	1.82	1.21
Internet banking - solutions for corporate customers										
Payment of wages									1.25	1.49
Payment without notification									1.66	1.85
Payment with CID									1.43	1.07
Payment with notification									3.55	3.62
Paper-based giro services										
Mail giros	4.04	4.25	4.84	5.14	5.67	6.36	6.52	6.91	6.92	6.93
Giro, account debits	13.30	15.28	16.92	18.59	25.10	26.01	29.99	33.17	33.37	33.68
Giro, cash payment	18.46	23.40	26.11	27.18	31.69	32.50	41.93	40.89	42.00	42.77
Direct Remittance sent as money order	23.12	25.72	27.78	30.01	32.64	33.70	35.69	46.65	46.54	51.97
Other company terminal giro sent as money order	23.41	25.01	26.06	30.11	32.61	33.58	35.27	46.06	37.31	44.44
Corporate Netbank sent as money order									47.62	50.40
Payment cards										
BankAxept cards in payment terminals (EFTPOS)	2.13	2.07	2.19	2.24	2.07	2.07	2.11	2.50	2.37	2.41
Cheques										
Personal cheques	10.72	12.30	15.00	20.07	20.70	21.13	20.64	27.58	27.32	28.54
Business cheques	10.46	12.31	15.13	22.05	22.79	23.94	24.01	27.58	27.24	28.46
Receipt of payments										
Electronic giro services										
Direct debits (Avtalegiro) (without notification from the bank)	1.60	1.51	1.38	1.42	1.42	1.42	1.52	1.38	1.37	1.41
Optical Character Recognition (OCR) - File	0.80	0.79	0.89	1.13	1.15	1.17	1.16	1.22	1.23	1.24
GiroFax						0.02	0.16	0.09	0.08	0.02
GiroMail						0.00	0.06	0.01	0.01	0.02
Paper-based giro services										
Optical Character Recognition (OCR) - Return	2.40	2.12	3.72	3.63	3.70	3.85	3.93	4.05	4.39	4.50
Cash withdrawals										
ATMs										
Own bank's ATMs outside opening hours	3.49	3.79	3.78	4.28	3.76	3.69	3.89	4.07	3.86	3.87
Other banks' ATMs in opening hours	2.25	2.19	2.64	4.00	3.89	4.09	4.72	5.14	6.38	6.45
Other banks' ATMs outside opening hours	4.44	4.46	4.32	4.81	4.79	4.91	5.49	5.53	6.78	6.84

[1] For estimated prices in customer programmes, see Chapterl 3.

Table 25: Prices in NOK for transfers from Norway to countries in the EU/EEA. Weighted average in selected banks

	Electronic payment order/ wholly automated processing				Electronic payment order/ Bank performs some operations manually				Manual payment orders			
	01.12.2004	01.01.2005	01.01.2006	01.01.2007	01.12.2004	01.01.2005	01.01.2006	01.01.2007	01.12.2004	01.01.2005	01.01.2006	01.01.2007
Ordinary SWIFT transfer in NOK												
Without BIC and IBAN, NOK 2 500	66.8	66.9	59.9	64.7	82.8	82.7	81.4	84.5	132.7	132.8	136.4	136.4
With BIC and IBAN, NOK 2 500	55.9	55.9	40.6	43.2	86.8	86.8	73.3	78.7	121.7	121.9	125.0	128.6
Ordinary SWIFT transfer in euro												
Without BIC and IBAN, equivalent to NOK 2 500	66.8	66.9	59.9	63.4	82.8	82.7	81.4	84.1	132.7	132.8	136.4	136.4
With BIC and IBAN, equivalent to NOK 2 500	43.2	35.3	32.5	33.9	86.8	86.8	66.4	76.4	121.7	105.2	110.1	122.6
SWIFT express transfer in NOK												
Without BIC and IBAN, NOK 150 000	311.6	311.0	342.2	346.7	311.6	311.0	328.4	331.3	375.8	377.7	381.1	381.6
With BIC and IBAN, NOK 150 000	301.3	300.6	289.4	305.4	301.3	300.6	353.5	367.7	365.5	367.3	371.5	373.8
SWIFT express transfer in euro												
Without BIC and IBAN, equivalent to NOK 150 000	311.6	311.0	298.7	346.7	311.6	311.0	328.4	331.3	375.8	377.7	381.1	381.6
With BIC and IBAN, equivalent to NOK 150 000	301.3	300.6	281.9	303.2	301.3	300.6	346.0	360.0	365.5	367.3	362.3	373.8
Cheques to other countries												
Equivalent to NOK 2 500	-	-	-	-	151.5	159.2	162.0	164.7	201.3	205.7	202.5	204.6

Table 26: Prices in NOK for receipt of payments from abroad. Weighted average in selected banks

	Receipt of payments from countries in the EEA			
	01.12.2004	01.01.2005	01.01.2006	01.01.2007
Receipt of payments in euro				
Without BIC and IBAN, equivalent to NOK 2500[1]	97.5	96.4	86.4	80.8
Without BIC and IBAN, equivalent to NOK 150 000	97.5	97.9	93.0	85.1
With BIC and IBAN, equivalent to NOK 2500[1]	97.5	21.6	13.2	12.6
With BIC and IBAN, equivalent to NOK 150 000	97.5	95.8	29.6	12.6
Receipt of payments in other currencies				
Without BIC and IBAN, equivalent to NOK 2500[1]	97.5	97.9	96.5	90.1
Without BIC and IBAN, equivalent to NOK 150 000	97.5	97.9	96.5	95.2
With BIC and IBAN, equivalent to NOK 2500[1]	97.5	95.8	96.5	89.4
With BIC and IBAN, equivalent to NOK 150 000	97.5	95.8	96.5	92.3

[1] From 1 Dec. 2004 to 1 Jan. 2006 prices were for the amount of NOK 50 000.

Definitions and abbreviations

Autogiro: An electronic collection procedure whereby companies can debit outstanding claims directly from customers' accounts when they fall due (see also direct debit).

Avtalegiro (Agreement-based giro): The bank automatically debits payment of regular bills from customers' accounts on the due date (see also direct debit).

BankAxept card: A debit card that is issued by Norwegian banks and linked to a bank account for use in Norway.

BBS: Bankenes Betalingssentral (The Norwegian Banks' Payment and Central Clearing House Ltd.)

BIC (Bank Identifier Code): Code that is used to identify a bank by means of the bank's SWIFT address.

BIS (Bank for International Settlements): International organisation that has the purpose of promoting cooperation among the central banks.

Charge card: Payment card that is not linked to a bank account. The user receives an invoice for all use in a given period at regular intervals and pays using another payment instrument. The user has a certain amount of credit in the form of delayed payment, whereas the payee receives settlement from the card company.

CID (Customer Identification Number): A series of digits that uniquely identifies the payment. Several pieces of information about the payer can be contained in the CID.

Clearing: Several transactions are offset against each other, and for each bank a net position will be calculated.

CLS (Continuous Linked Settlement): System for the settlement of trading in foreign currency. CLS ensures payment versus payment and thereby removes the credit risk associated with the settlement.

Combined payment cards: Payment cards with more than one of the following three functions: BankAxept card, domestic credit card and/or payment card issued by an international card company.

Company terminal giro: Payment solutions for businesses. Solutions require installation of software in the user's/business' computer system. Used for individual payments, retail payments to payees with and without accounts, etc.

CPSS (Committee on Payment and Settlement Systems): CPSS is a forum for the central banks in the G10 countries. CPSS shall promote robust, efficient payment systems.

Credit card: Payment card with a credit limit that is repaid according to an agreed repayment plan, regardless of use.

Credit transfer: Money transfer that is initiated by the payer.

Debit card: Payment card that makes it possible for the owner of the card to access deposits and credit in the bank account to which the card is linked. The user's account is debited each time the card is used.

Debit transfer: Money transfer initiated by the payee.

Direct debits: Autogiro and Avtalegiro. Up to and including 2001, the term also included DataGiro Direkte Trekk, DataGiro Terminbetaling and DataGiro Medlemsbetaling.

Direct Remittance: Service that is equivalent to the company terminal giro established by BBS.

ECB: The European Central Bank

eFaktura: Electronic billing that is completed with a CID, account number, etc. and sent to the customer's Internet bank.

EFTPOS (Electronic Funds Transfer at Point Of Sale): Payments and withdrawals of cash by means of payment cards at electronic payment terminals in shops, etc.

e-money: A monetary value in the form of a claim on the issuer that is stored on an electronic medium, issued on receipt of funds and a recognised means of payments by enterprises other than the issuer.

FAO (Expert Committee for Clearing and Settlement): Advisory body for FU.

FNH: Norwegian Financial Services Association

FNS: The Finance Industry's General Services Office

FU (The Joint Committee for Payment Transactions): The banking industry's supervisory committee for matters related to payment transactions.

Functions for cards: Payment cards are classified both according to whether they function as BankAxept cards, national credit cards or international payment cards and according to whether they function as debit cards, charge cards or credit cards.

Giro as money order: Paper-based giro without the payee's account number. The form must be presented in a bank in order to receive payment.

Giro: Credit and debit transfers from one bank account to another.

Gross settlement: Transactions are settled individually, without prior clearing. When this is done in real time, the system is called an RTGS system (Real Time Gross Settlement System).

IBAN (International Bank Account Number): Identifies the payee bank and account number. This kind of number contains three elements: the bank account number, the country code and the bank code.

IMF (International Monetary Fund): The IMF shall foster global monetary cooperation, provide loans to countries with payment difficulties, and work for international financial stability.

ISO (International Standards Organization): ISO is an international organisation that approves, develops and publicises international standards.

Mail giro: Payer sends a paper-based giro in an envelope directly to BBS rather than delivering the form to his/her bank.

Means of payment: Money in the form of cash or deposit money.

NBO: Norges Bank's Settlement System

NICS Operations Office: The NICS Operations Office is the operator of NICS; cf. Chapter 2 of the Act relating to payment systems, etc. The NICS Operations Office is responsible for the organisation and operation of NICS and is the addressee for any instructions from Norges Bank.

NICS: Norwegian Interbank Clearing System

OCR (Optical Character Recognition): Giro with a special code bar that makes it possible for the payee to register the amount and to invoice electronically. OCR File: The bank keeps the form. OCR Return: The form is returned to the payee.

Oil company cards: Cards that can only be used for payments in the oil companies' own terminals.

Payment cards established by international card companies: Payment cards that are issued on the basis of a direct licence from an international card company (Visa/Master Card/American Express/ Diners Club).

Payment cards: Debit cards, charge cards and credit cards.

Payment instrument: A payment instrument is used to gain access to means of payment. Cash is a payment instrument and a means of payment.

RTGS: Real Time Gross Settlement

SBS: The Norwegian Savings Banks' Association's General Services Office

SWIFT (Society for Worldwide Interbank Financial Telecommunication): A company that operates a global communications network for payment transactions. SWIFT offers both a message format and a transaction route.

Telephone giro: Transfers from one account to another, initiated by telephone.

VPO: Securities settlement system.

VPS: Verdipapirsentralen ASA (The Norwegian Central Securities Depository).

Guide to the tables

The following section provides an explanation of sources for figures, data quality, calculation methods for averages and the contents of some of the tables.

Statistics that concern general data, means of payment in Norway, clearing and settlement have been prepared by Norges Bank, while the other statistics have been prepared by Statistics Norway (SSB).

Altered procedures for gathering data and the introduction of new tables have resulted in some data being revised relative to the reports for previous years. There are also breaks in some time series.

Norges Bank asks to be listed as a source when data from this report is used for other purposes.

Sources

- Information about cash in Norway: Norges Bank.
- Information about clearing and settlement: Norges Bank, NICS Operations Office, SWIFT and DnB NOR.
- General data: SSB, the Norwegian Post and Telecommunications Authority and *Kredittilsynet*, the Financial Supervisory Authority of Norway.
- Information about giros, cheques, BankAxept cards, ATMs and the use of EFTPOS terminals that accept BankAxept cards: the Norwegian Financial Services' Association (FNH), the Norwegian Savings Banks' Association, Entercard A/S, the Norwegian Banks' Payment and Central Clearing House Ltd. (BBS), EDB Business Partner ASA, SDC Udvikling AS, Nordea Bank Norge ASA, DnB NOR Bank ASA, Fokus Bank ASA, Danske Bank NUF, Skandinaviska Enskilda Banken AB Oslo branch, Statoil ASA, Esso Norway A/S, A/S Norske Shell, YX Energi AS and ConocoPhillips JET A/S.
- Information about payment cards other than BankAxept cards and the use of other payment terminals: Teller A/S, SEB Kort AB (Oslo branch), DnB NOR Kort, Nordea Bank Norge ASA, Fokus Bank ASA, GE Money Bank, Ikano Finans AS, and Entercard A/S.
- Information about cross-border payments other than those that are executed with payment cards: The Register of Crossborder Transactions and Currency Exchange (the Norwegian Directorate of Customs and Excise).
- Information about banks' income from the payment system: Norges Bank's database for bank statistics (ORBOF).
- Information about prices in the payment system for customers that are not in bank loyalty programmes is based on a survey comprising 24 commercial and savings banks. The banks in the survey accounted for 85% of the market measured in deposits in current accounts on 30 November 2006. The prices were taken from the banks' price lists on 1 January in the period 1997-2007.

Comments on individual tables

Table 7 - Number of agreements

- The number of agreements to offer and receive electronic invoices concerns agreements linked to the use of the BBS service eFaktura.

Table 8 - Number of issued cards, number of functions in issued cards and number of terminals

- To end-1997, information about BankAxept cards was not available from 8% of commercial banks measured by the bank's share of sight deposits. From 1998, the share of banks with no available information is negligible.
- The number of physical cards is lower than the number of functions in the cards. This is due to the high number of combined cards (i.e. cards with several functions, see Definitions).
- The statistics for the number of payment terminals only include EFTPOS terminals that accept BankAxept cards. To end-1998, these terminals were owned by either banks or oil companies. Terminals owned by FINA were not included in the statistics. FINA was bought out by Shell on 4 March 1999. From 1999 onwards, others, designated as "retail chains", have also owned these terminals, but the distribution between banks and other owners was unknown until 2000. The number of locations with payment terminals refers to each shop, each post office branch, etc.

Tables 10 and 14: - Debit and credit transfers (giro)

- Individual electronic credit transfers are not included in the statistics prior to 2002 (standing orders, etc.)

- The figures for miscellaneous giros registered in banks include both cash payments and account debits. Figures for cash payments in 2005 have been in part estimated by Norges Bank and BBS. Turnover figures (Table 15) for company terminal giros to end-2002 and money orders to end-2005 are in some cases based on estimates from Norges Bank.

Tables 11a and 15a - Payment cards. Use of cards

- The figures for cashback withdrawals are for cashback in EFTPOS terminals that accept BankAxept cards, whereas the figures for other cash withdrawals are for cash withdrawals at the counter and from ATMs.
- The turnover (Table 15a) for the use of Norwegian cards for goods purchases in the period from 1997 to 1999 includes cashback from payment terminals, whereas the turnover from 2000 onwards only includes goods purchases.
- The figures for the use of Norwegian cards abroad and foreign cards in Norway refer primarily to payment cards issued by international card companies, including Visa, Eurocard, MasterCard, Diners, American Express and JCB cards (Japan Credit Bureau). To end-2006 cross-border payments were made with bankcards in the Eufiserv network, but these transactions amounted to less than one per cent of the total number of transactions.
- The distribution of the use of Norwegian cards in Norway and abroad from 2004 onwards and the distribution of cash withdrawals and goods purchases for American Express to end-2004 have been based on estimates prepared by Norges Bank.

Tables 11b and 15b - Payment cards. Use of payment terminals

- The statistics for the total use of domestic terminals give an overview of the use of Norwegian and foreign cards, including the oil companies' cards in ATMs and payment terminals.
- The statistics for the use of Norwegian payment cards in domestic terminals do not include cards issued by oil companies.
- In 1999, 2000 and 2001, the figures for goods purchases in EFTPOS terminals that accept BankAxept cards do not include the use of domestic credit cards and international payment cards in terminals owned by entities other than banks and oil companies.
- Figures for cashback to end-2006 are based on estimates from BBS and Norges Bank. The low numbers for 2006 only include registered cashback.
- Figures for the use of payment cards in other Norwegian payment terminals include domestic credit cards and international payment cards in EFTPOS terminals that do not accept BankAxept cards and the use of various payment cards over the Internet.

Tables 12 and 16 - Cross-border transfers using foreign currency cheques, foreign currency giros, MoneyGram and Western Union:

- The statistics include payments registered in the Register of Crossborder Transactions and Currency Exchange in 2006. Altered routines for reporting these payments from 2006 onwards have resulted in insufficient information for some banks. This information is subsequently reported to the Register of Crossborder Transactions and Currency Exchange.

Table 17-18 - Average daily turnover in NBO and NICS:

- The figures for 1999 only cover the period May – December 1999. The figures for 2000 and later cover the whole year. There is some uncertainty about the statistics on NICS retail settlement.

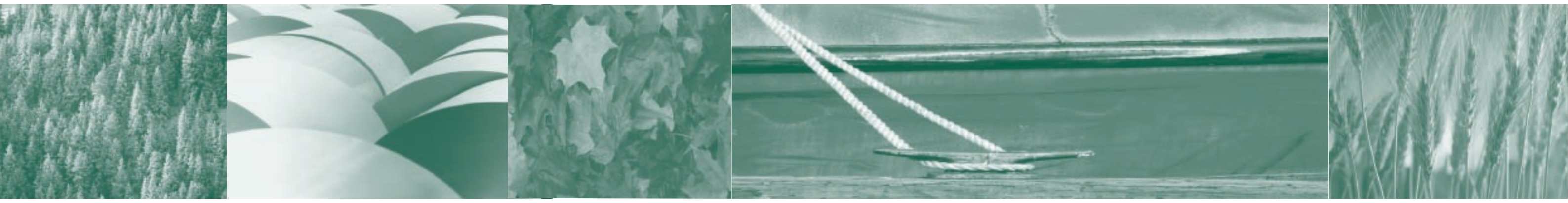
Tables 24-26 - Prices for domestic payment transactions, receipt of payments and cash withdrawals and prices of cross-border transactions:

- The statistics present average prices in banks for payment transactions and receipt of payments. The figures are calculated from price lists that apply to customers that are not participating in customer programmes or receiving some other type of discount. The average prices are calculated by weighting the price per payment and/or receipt in each bank with the bank's share of deposits in current accounts.
- For domestic payments, the prices that are paid by the payees are added to the prices that are debited the payers.
- The price of a mail giro refers to each form sent in. Postage for each sending is an additional charge.
- For agreement-based giros *(Avtalegiro)*, prices

per payment received refer to direct debits without notification.

- Cross-border prices refer to fixed sum transfers in the EEA both with and without BIC and IBAN. Prices do not include additional costs for cash payments, third country currency, confirmations or costs that the payer must cover for the payee.

Standard symbols in the tables:
: Incomplete information/will not be published
- Zero
0 Less than (the absolute value of) 0.5 of the unit used



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