

Report on payment systems

1999

Oslo, November 2000

Norges Bank's annual report on payment systems for 1999

Norges Bank is the central bank of Norway. Norges Bank's responsibilities in connection with payment systems are as follows:

- Promoting stable and efficient payment systems
- Clearing and settlement between banks
- Production and distribution of banknotes and coins

Since 1987, Norges Bank has published an annual statistical report on payment system trends and prices. The report also includes information about domestic payment systems.

The report in Norwegian is available in printed form, free of charge, and may be ordered from:

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The report is also available on Norges Bank's website on the Internet: www.norges-bank.no

Standard notation in tables:

- : Data unavailable/cannot be published
- Nil
- 0 Less than half the final digit shown
- * Preliminary figures

Norges Bank should be cited as the source when figures from this report are quoted.

GLOSSARY OF ABBREVIATIONS

BBS	-	Banks' Central Clearing House
BIS	-	Bank for International Settlements
CFD	-	Contract for Difference
CLS	-	Continuous Linked Settlement
CPSS	-	Committee on Payment and Settlement Systems (G-10 countries)
DVP	-	Delivery vs. Payment
NBO	-	Norges Bank's Settlement System
NICS	-	Norwegian Interbank Clearing System
NOS	-	The Norwegian Futures and Options Clearing House
RTGS	-	Real-Time Gross Settlement
SWIFT	-	Society for Worldwide Interbank Financial Telecommunications
TARGET	-	Trans-European Automated Real-time Gross Settlement Express Transfer
VPS	-	The Norwegian Central Securities Depository
WATCH	-	World Automated Transaction Clearing House

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1 INTRODUCTION

Norges Bank's responsibilities in connection with payment systems are as follows:

- Promoting stable and efficient payment systems
- Clearing and settlement between banks
- Production and distribution of banknotes and coins

These responsibilities are discussed in further detail in Chapters 2, 4 and 6.

1.1 The annual report

Norges Bank has published annual reports on payment system trends since 1987. The reports present main features and give an account of the most important events relating to payment systems in Norway and internationally.

Chapter 2 is divided into two sections, one that describes developments in clearing and settlement systems and another that deals with trends in payment instruments and systems for payment services. Chapter 2 also looks at turnover in Norges Bank's Settlement System (NBO) in 1999. Chapter 3 deals with international aspects of the payment system as well as clearing and settlement of foreign exchange transactions. Chapters 4 and 5 contain updated time series on transactions and prices. Price trends and use of payment services are illustrated in charts again this year, whereas more detailed information is available in the statistical annex. Some corrections have been made to the historical data, especially for the 1998 figures. Otherwise, only minor changes have been made in Chapters 4 and 5. A short chapter on Norge Bank's specific responsibilities in connection with the payment system concludes the report. Although the figures in the text and the tables in the statistical annex apply primarily to 1999, the Norwegian report was finalised in mid-May 2000. The report is available both in Norwegian and English on Norges Bank's website, www.norges-bank.no.

1.2 Summary

Clearing and settlement systems

In 1999, measures to reduce the risk associated with clearing and settlement systems continued to receive high priority in central banks, including Norges Bank. These measures relate to both bank settlements and securities settlement systems.

Norges Bank's Settlement System, NBO, was introduced on 24 November 1997. The system's objective is to reduce risk and increase the efficiency of payment settlements in Norway. NBO enables real-time interbank settlement in Norges Bank. Settlement of large interbank transactions occurs individually and continuously (gross settlement), whereas settlement based on netting between banks

(net settlement) occurs more frequently than before. A new electronic interface between the Norwegian Interbank Clearing System (NICS) and NBO was in place as from 12 March 1999. The types of securities that banks may provide as collateral in Norges Bank were expanded in 1999. In June 1999, a central Contingency Committee was established to ensure continuity and reduce vulnerability in the financial infrastructure. Norges Bank chairs this Contingency Committee, which has members representing key participants and the Banking, Insurance and Securities Commission. Under the auspices of the Contingency Committee, a special contingency plan was implemented in connection with the transition to the year 2000 (Y2K). This plan was designed to alert, handle and provide information about any problems that might arise in the financial infrastructure.

The Act relating to Payment Systems, etc. was adopted in December 1999 and entered into force on 14 April 2000. The Act introduces an authorisation requirement for establishing and operating interbank systems and gives Norges Bank responsibility for authorisation and supervision. The Act also introduces a requirement for operators of payment services systems (customer-bank relations) to notify the Banking, Insurance and Securities Commission.

International events

A joint system for payment transfers in euros, TARGET, has been introduced to permit effective implementation of monetary policy in EMU and to contribute to enhancing the efficiency of cross-border payments. TARGET became operational when the new single currency, the euro, was introduced, with effect from 1 January 1999. The European Central Bank (ECB) is responsible for the design and operation of TARGET. In addition, the EU Commission carefully monitors developments in the use of the euro.

The Bank for International Settlements (BIS) presented the Trundle Report in 1999. The report focuses on general guidelines and will be followed up by reports that concentrate on more specific matters. The primary objective of these efforts is to develop standards that will simultaneously reduce systemic risk and maintain efficiency in payment systems, including important principles that should underlie the payment systems and their supervision.

General Trends

The use of payment cards continues to rise rapidly, although the rate of increase has slowed compared to earlier in the 1990s. Measured by number of transactions, the use of payment cards, excluding ATM withdrawals, rose by 17% from 1998 to 1999. In 1999, cards were used in about 50% of all payment transactions, excluding cash payments. The use of cheques declined further, and cheques now account for less than 1% of payment transactions.

Payment cards are now used as frequently as giro services for domestic payments. There has been a clear shift towards the use of electronic giro services at the expense of paper-based services the last few years. In 1999, electronic giro transactions outnumbered paper-based giro transactions for the first time. This is due to stagnation in the number of mail giro payments, a clear decline in other paper-based services and pronounced growth in the use of electronic services, especially those aimed at the private customer market. In 1999, the number of electronic giro transactions rose by 14%, while the number of paper-based transactions decreased by 10%. The number of mail giro payments was virtually unchanged compared with last year, whereas the total amount transferred by mail giro dropped by 8%. On the other hand, the total amount transferred by electronic giro services climbed 26% from 1998 to 1999. The use of phone-based giro services (telebanking) and especially giro services over the Internet, expanded sharply in 1999, but these services are still more limited in scale than most other payment services, measured by number of transactions and total amount.

The annual average value of notes and coins in circulation came to about NOK 43.8bn in 1999, which represented a negligible increase from 1998. Cash in circulation has risen by 43% since 1991, which is somewhat less than growth in private consumption during this period.

Prices trends

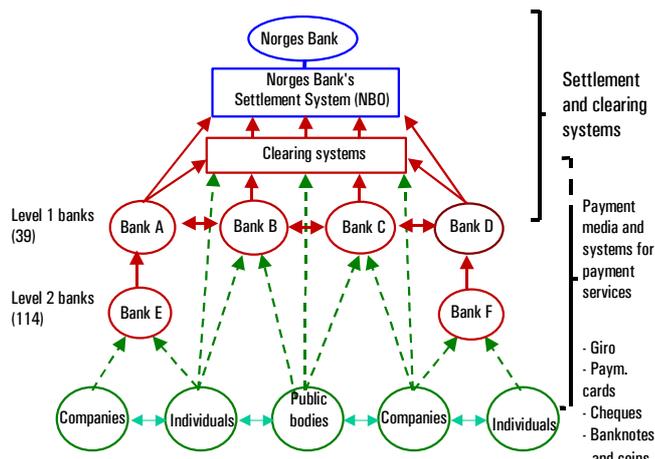
Prices for most types of payment services have risen substantially throughout the 1990s, also in relation to general price inflation. This trend must be viewed in connection with other developments, such as the reduction in banks' interest rate margins during the period. Current price levels are thus more likely to reflect banks' real costs for the various services.

On average, prices for costly services, such as paper-based giros and cheques, have gone up the most, both during the period as a whole and from 1998 to 1999. This is largely related to banks' use of pricing as a means of encouraging customers to shift to more cost-effective services, such as electronic giros and payment cards. There have only been minor price increases for most electronic services the last few years, but prices rose more than usual for a number of electronic services from 1998 to 1999. The average price for ATM withdrawals has increased steadily in recent years. However, the public has largely switched from paper-based services to the far less expensive electronic services, thus limiting the effect of these increases on the general public's total spending on payment services.

2 DOMESTIC PAYMENT SYSTEMS

The payment system in Norway may be described in various ways. Chart 2.1 shows the system from Norges Bank's perspective. At the "bottom" of the

Chart 2.1 The payment system in Norway



system are banknotes and coins and payment systems that permit the use of bank deposits and credits as a means of payment. At the "top" are systems for transferring funds between banks, ie clearing and settlement systems.

At present, payments are primarily made using bank deposits and cash. In Norway, notes and coins are legal tender. In other words, cash can basically be used in any payment situation where settlement occurs on the spot. Bank deposits are normally accessed by means of account cards and various types of giros. New services based on bank deposits are being developed continuously. Work is also in progress in various quarters on electronic money (e-money), ie units of value that may be stored in an electronic medium such as a chip card or a PC, and transferred directly from payer to payee.

Customer payments are gathered in clearing systems and generate a set of net positions between all participating banks. The clearing systems include the Norwegian Interbank Clearing System (NICS), the Norwegian Central Securities Depository (VPS) and the Norwegian Futures and Options Clearing House (NOS).

The settlement systems include Norges Bank's Settlement System (NBO) and settlement systems in private settlement banks. All banks with accounts in Norges Bank have access to NBO, and hence to liquidity information, settlement and intra-day loans from Norges Bank. Banks may choose direct settlement in Norges Bank (level 1 banks) or indirect settlement through a private settlement bank (level 2 banks). Large-value and medium-sized transactions are sent to Norges Bank for settlement via NICS in the SWIFT netting system¹, or they are sent directly (gross) for continuous settlement in NBO. Small transactions, such as giro and ATM withdrawals, are sent for settlement via NICS retail netting. Payment orders connected with securities and derivatives transactions are sent to Norges Bank for settlement via VPS and NOS respectively.

¹ SWIFT (Society for Worldwide Interbank Financial Telecommunications) is an electronic network system for transferring messages and payment information.

2.1 Clearing and settlement systems

2.1.1 New legal framework for payment systems – Act relating to Payment Systems, etc.

Act no. 95 of 17 December 1999 relating to Payment Systems, etc. entered into force on 14 April 2000. The Act generally follows the Banking Law Commission's bill recommendations in NOU 1996:24 Payment Systems, etc. In addition, section 4 of the Act implements the EEA Directive on Settlement Finality in Payment and Securities Settlement Systems. Before this Act came into force, there was no separate regulation of payment systems in Norway. The systems were mainly regulated by agreements between participants. The legislation is not meant to replace, but rather to supplement existing self-regulation.

The Act distinguishes between two types of payment systems: interbank systems and systems for payment services. The term *interbank system* refers to systems based on common rules for clearing, settlement or transfer of funds between credit institutions. The objective of the provisions relating to interbank systems is to ensure that these systems are organised and operated in such a way that they promote financial stability. Special emphasis shall be placed on countering risks resulting from liquidity or solvency difficulties among participants in the system. The term *system for payment services* refers to systems based on standardised arrangements for the transfer of funds from or between customer accounts in banks and financial undertakings when the transfers involve the use of payment cards, numeric codes or any other form of independent user identification issued to an unrestricted range of customers. The purpose of the provisions relating to systems for payment services is to ensure that these systems are organised and operated in a way that promotes reliable and efficient payments and rational and coordinated execution of payment services.

The Act introduces an authorisation requirement for establishing and operating interbank systems and gives Norges Bank responsibility for authorisation and supervision. One condition for authorisation is that an interbank system shall have an operator that is responsible for its establishment and operation. In addition to information about the operator, the Act sets out a number of other conditions that must be described in applications for authorisation, such as criteria for direct and indirect participation in the system and measures that limit participants' risk. Norges Bank may grant exemptions to the authorisation requirement for systems whose operations are so limited in scope that they are assumed to have no significant effect on financial stability.

The Act's provisions relating to legal protection and security for netting and settlement agreements apply to interbank systems with authorisation from Norges Bank as well as securities systems with separate approval from the Banking, Insurance and Securities Commission. Such agreements may be binding even in the event of insolvency proceedings against

one participant in the system, provided that transfer orders have been received by a clearing house, a central counterparty or a settlement agent before the opening of such insolvency proceedings. The provisions reduce the risk associated with participation in payment and settlement systems, clarify participants' obligations in relation to transfer orders and contribute to harmonising rules in the EEA. The Act introduces a requirement for operators of payment service systems, such as giro and card systems, to notify the Banking, Insurance and Securities Commission (see chapter 2.2).

In 1998, the Nordic Council of Ministers established a Nordic working group to develop a joint Nordic interpretation and implementation of the EEA Directive on Settlement Finality in Payment and Securities Settlement Systems. The group's Norwegian participants came from Norges Bank and the Banking, Insurance and Securities Commission. The group concluded that the Nordic cooperation had been extremely useful and an important aspect of each country's efforts to implement the directive. The group recommended similar Nordic cooperation on interpreting and implementing relevant directives in the future. The group completed its work in June 1999.

2.1.2 Norges Bank's Settlement System (NBO)

The central bank is the bankers' bank, and as such, one of its important responsibilities is to function as a settlement bank, ie. intermediary of payments between banks. A settlement between two banks takes place when the payer bank's account in the settlement bank is debited by the same amount that is credited to the recipient bank's account. Routines and systems for the exchange, supervision and settlement of transactions may be said to constitute a settlement system.

As a result of customer-initiated transactions in the payment system, large positions arise between banks. If settlement of these positions is delayed or rejected, the recipient bank will not receive the amounts anticipated. Such a situation may arise because a bank is illiquid or insolvent (placed under public administration). If the delay is caused by insolvency, the surviving banks may incur a loss. If the delay is caused by illiquidity, the other banks' liquidity will decline. The payment system may thus be a channel for spreading both liquidity and solvency problems between banks.

The most important types of risk inherent in payment settlements are credit risk, liquidity risk, operational risk and systemic risk. *Credit risk* is the risk of losses due to the failure of a counterparty to meet his obligations. In the case of an early crediting, the recipient customer's bank takes on an obligation by crediting the customer's account before funds have been received from the remitting bank. If a bank that owes money in the settlement becomes insolvent, the bank that has credited customers will face potential losses corresponding

to the amounts owed this bank. *Liquidity risk* is the risk that the payer cannot pay, in part or in full, at the agreed time. The liquidity shortfall must be replaced and the terms connected with such liquidity supply may be less favourable than the original terms (replacement risk which depends on the volatility of funding costs). This may lead to solvency problems if market conditions are unstable. "Pure" liquidity risk may delay or lead to cancellation of settlement and customer crediting and reduce confidence in deposits in general. *Operational risk* is the risk of a breakdown in computer systems or telecommunications services.

Systemic risk is the risk that credit and liquidity problems in one bank will spread to other banks, making them unable to meet their obligations. In such a case, financial stability may be threatened. Norges Bank's role in shaping this part of the financial infrastructure has its roots in the desire to reduce systemic risk and foster financial stability.

There have been major changes in the Norwegian clearing and settlement system in recent years. The purpose of these changes has been to reduce the probability of these systems being the source of risk or a channel for spreading risk. The introduction of Norges Bank's Settlement System (NBO) was an important measure in connection with this and involved a transition from one daily net settlement to gross settlement and more frequent net settlements. Gross settlement means that transactions are settled as obligations arise, whereas a net settlement is made on the basis of netting a number of transactions between banks. Thirty-nine banks participate daily in gross and net settlements in NBO. One important principle in NBO is that the banks to be debited must have cover in their accounts in Norges Bank before settlement can take place.

Turnover in NBO

Turnover in NBO is spread over various types of settlements, which may be classified roughly as follows:

- A gross settlement is a bilateral settlement between banks and is used particularly in connection with large payments (eg large short-term loans between banks), but minor transactions may also be settled gross. Banks may send gross settlement transactions directly to Norges Bank or via NICS. All SWIFT transactions in NICS over NOK 100m are automatically channelled to gross settlement. In principle, all banks may send gross transactions to Norges Bank.
- NICS-SWIFT settlements are multilateral net settlements based on the result of SWIFT netting in NICS and are currently used for medium-sized interbank payments (under NOK 100m), for example in connection with foreign exchange tra-

ding. Seven such settlements are made every day, and 22 banks participated in this settlement in 1999.

- NICS retail settlement is a multilateral net settlement based on the result of netting retail payments in NICS. Banks' net positions in connection with retail payments (eg giro transactions and card payments) are calculated. In 1999, 36 banks participated in this settlement in Norges Bank. In addition to a daily retail settlement in NBO, there is also a retail settlement at level 2 (see Chart 2.1) where banks settle in a private settlement bank.
- Securities and derivatives settlement (VPS/NOS). Norges Bank is responsible for the cash settlement connected with securities and derivatives transactions that go through the Norwegian Central Securities Depository (VPS) and Norwegian Futures and Options Clearing House (NOS). In 1999, 19 banks participated in securities settlements, while 15 took part in derivative settlements.
- Norges Bank/Central government. This includes transfers to and from the central government's consolidated account and various transfers associated with Norges Bank's monetary policy operations (such as fixed-rate loans and deposits and foreign exchange trading).
- Cash. Norges Bank provides private banks with cash (banknotes and coins) and receives used cash for redistribution, quality control and sorting. Settlement for cash supplied and received is made through the banks' accounts in NBO.

Chart 2.1.1 illustrates the breakdown of total NBO turnover in 1999 between gross and net settlement. The average daily turnover in banks' accounts in Norges Bank was NOK 145.9bn. There was a pronounced change between March and April due to the introduction of new system functionality that allows banks to report gross settlements electronically via NICS for automatic recording in NBO. Previously, gross settlements were recorded manually. A limit of

Chart 2.1.1 Average daily value of transactions in NBO per month in 1999. In millions of NOK

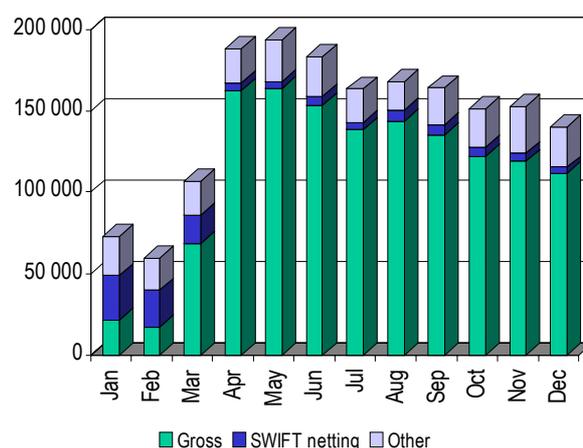
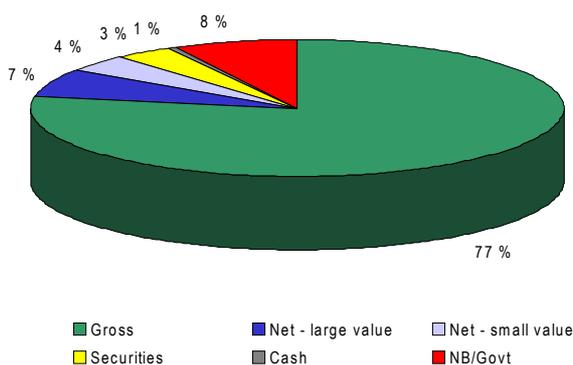


Chart 2.1.2 Value of transactions in NBO in 1999 by settlement type



Source: Norges Bank

NOK 100m for payments that may be included in SWIFT netting was also introduced in March. In the period before these changes, the average turnover was NOK 64.5bn, whereas after the changes, the average climbed to NOK 164.2bn. Gross settlements' share of total turnover rose from 32% in 1998 to 77% in 1999. This development has reduced the credit risk involved in settlements.

For the year as a whole, SWIFT netting accounted for 7% of turnover, while NICS retail clearing accounted for 4%. Cash settlements in connection with securities and derivatives settlements in VPS and NOS accounted for 3%, whereas 8% may be ascribed to various transactions in connection with liquidity management and the central government's accounts in Norges Bank. Cash settlements amounted to about 1%.

Framework

In March 1999, gross and SWIFT settlements in NBO were restructured. Previously, gross settlements were reported to Norges Bank by fax or SWIFT messages and then recorded manually in NBO. With effect from 12 March 1999, gross settlements may also be reported electronically via NICS. A limit of NOK 100m for payments that may be included in SWIFT netting was also introduced. Larger payments are automatically recorded in NBO and taken individually to gross settlement.

Real-time settlement makes it necessary for banks to manage their positions in Norges Bank throughout the day, instead of from day to day, as earlier. Banks require continuous information about their positions in Norges Bank for intraday liquidity management purposes. Banks also require continuous electronic feedback from Norges Bank about settlements that have been completed. This is part of the new transaction interface between NICS and NBO.

The principle of NBO is that banks must have cover in their accounts in Norges Bank before settlement may be carried out. Cover is achieved by way of an account balance and access to loans

during the day (intraday loans) against collateral in the form of securities. Circular no. 6 of 30 July 1999 changed banks' access to loans and deposits in Norges Bank. The possibility of using securities as collateral in Norges Bank was expanded to include several types of securities. Both some private and foreign securities are now accepted as collateral. In addition, the circular states that banks must also provide full collateral for F-loans now (in the same way as for D-loans), which means that they must deposit a larger number of securities in Norges Bank. The same circular changed NBO's operating pattern. The changes entered into effect on 1 September.

The framework and operating pattern for settlement in NBO are described in agreements and circulars. Banks were informed about the framework and operating pattern when the system was established in Circular no. 5 of 17 November 1997. In 1999, the terms were changed four times by means of Circulars no. 1 of 23 February 1999, no. 2 of 29 March 1999, no. 6 of 30 July 1999 (with clarifications in no. 8 of 30 August 1999) and no. 9 of 9 September 1999.

NBO was introduced in November 1997 and experience from the new settlement system's first two years of operation is generally good. Banks have adapted to the new system without major problems and there have seldom been extensive queues or large penalty fees due to violation of rules that govern the settlements.

After the new transaction interface between NICS and NBO began ordinary operations, NBO became a fully functioning system for real-time gross settlement, RTGS. We are thus on a par with RTGS systems in comparable countries.

2.1.3 Securities settlement

Norges Bank is the settlement bank for cash settlements in connection with securities transactions cleared in the Norwegian Central Securities Depository (VPS). Norges Bank seeks to reduce risk and promote efficiency in securities settlements, in part out of consideration for financial stability. In 1999, it was decided that regular contact meetings would be held to strengthen contact between the two institutions and to provide a forum for the exchange of information.

Until now, there has been a lack of legal clarity as to when a settlement is final and irrevocable. The EEA Directive on settlement finality, which was implemented through the Act relating to Payment Systems, etc., ensures clearing and settlement between participants in the system even when one of the participants is insolvent. This secures the settlement from the time of clearing until final settlement and thus reduces legal risk.

In 1995-1996, Norges Bank and VPS examined, both individually and jointly, how securities settlement should be developed to reduce risk and enhance efficiency. Together they determined that the system should move in the direction of frequent

net settlements, introduction of gross functionality as well as integrated cover control for both securities and cash in order to reduce the problem of failed transactions and yellow lights. The new securities settlement system was named VPO.

As a follow-up, VPS started work on a VPO project in 1997. The work was suspended in the autumn of 1998 when VPS began cooperating with the central securities depositories in Sweden and Denmark on a joint preliminary project, called S4, to study the possibilities of a joint clearing and settlement house for these three countries. In the spring of 1999, the boards of the three central securities depositories decided that there were not sufficient grounds for further work on this project. VPS has therefore continued the development of its own systems.

Securities settlements in Norway have had a high proportion of failed (not completed) trades because the seller has not had the security in the registered VPS account. VPS has developed a new settlement procedure that attempts to optimise the value of settled trades with regard to timing and securities cover. The new procedure, introduced in May 1999, has contributed to reducing the number of failed transactions from 20 to 10 per cent, ie a 50 per cent reduction. A further reduction was desirable, however, to ensure that settlements may be completed with optimal security. In cooperation with Norwegian Futures and Options Clearing House (NOS), VPS has developed an automatic borrowing facility that was implemented in September 1999. Participants in securities settlements may link up to this facility so that in the event of inadequate securities cover, a loan of securities is automatically established on behalf of the participant. This has reduced the number of failed trades by about 50 per cent for the brokers involved in the scheme. The scheme is based on the assumption that some participants join the scheme as potential lenders of securities. It has been difficult, however, to gain support from an adequate number of lenders, since under the Tax Act, a loan in most situations is considered a realisation of an asset and is thus subject to capital gains tax. In addition, a new function has been implemented in 2000 to change the settlement date for trades that are not completed as agreed. The trade will not fail, but will be put on hold and included in a later settlement.

One aspect of the work with a new VPO is to assess new solutions for the cash side of the settlement. On 17 November 1999, Norges Bank and VPS decided to establish a working group that would quickly evaluate which technical solutions should be further developed and the adaptations required. The group used the VPS project report from 1997 and the S4 report from 1999 as its point of departure. The working group presented its report at year-end.

In line with the working group's recommendations, work is underway to find technical solutions

for introducing intraday collateral security, more net settlements per day and in the long run a gross settlement. Intraday collateral security allows same-day settlements. This will be a more efficient means of pledging security for the cash side of securities settlements and for D- and F-loans from Norges Bank. Intraday collateral security requires an amendment to the Central Securities Depository Act that will ensure immediate legal protection. At present, securities pledged in favour of Norges Bank must be registered the day before to benefit from legal protection. By having several net settlements every 24 hours, one of the settlements may be made at night in order to take advantage of money and collateral security that would otherwise be idle. Trades that fail during the night settlement may be included in the net settlement during the day. A gross settlement may also be used to deal with failed trades from the night settlement. Gross settlements also lead to greater predictability for participants since the settlement is completed at the agreed time.

The most important source of risk in securities settlements has thus far been "red lights". A red light occurs when a participant still lacks sufficient cover for his debit position at 10:30 am on the settlement day. Norges Bank does not effect cash settlement until there is full cover and will therefore reject settlement. In such a situation, the settlement result will be returned to VPS, which will prepare a new net settlement. How VPS should prioritise trades to be taken out during batching, as well as what sort of general and technical procedures should be used are currently unclear. Norges Bank has cooperated with the VPS and the Banking, Insurance and Securities Commission to clarify conditions related to handling net settlements that are rejected in Norges Bank.

A "yellow light" occurs in a securities settlement when a broker has furnished additional guarantees later than 3 pm on the day before the settlement day. There has been a rise in the number of yellow lights recently, thus increasing the possibility of red lights. If integrated cover control is introduced both on the securities and cash side, the problem of yellow and red lights will disappear since VPS will always have checked the participants' cash cover before sending the netting result to Norges Bank.

2.1.4 Vulnerability and preparedness in the financial infrastructure

The banking and financial sector is extremely dependent on IT systems which in turn are based on access to telecommunications and electricity supply. Payment orders and financial transactions move through the systems to a number of participants in the financial sector. A modern payment system must be capable of handling a large number of transactions quickly and with a high degree of security for payers, payees and banks. The efficient func-

tioning of the Norwegian payment system thus depends on a well-functioning financial infrastructure and participants who perform their tasks and meet their obligations as expected.

In the light of developments in modern payment systems, both the authorities and market participants have placed great emphasis on implementing measures to reduce vulnerability in systems for clearing and settlement of payment transactions. Each individual participant has an independent responsibility for running his own operations, including a contingency plan for handling operational disruptions. The plan may involve the establishment of back-up solutions in the event of disruptions, alternative electricity supply, alternative telecommunication lines and other contingency measures. In addition, each participant in the payment system is responsible for handling operational risk (credit, liquidity and market risk) connected with his own payment settlements.

The authorities and the financial industry have cooperated to evaluate possible measures to reduce the vulnerability of the joint systems in the financial infrastructure. In January 1998, a working group chaired by Norges Bank and with representatives from the banking industry and Posten Norge BA, presented a report with proposals for reducing vulnerability. The two proposals that received highest priority were the establishment of a central contingency committee for payment systems and the development of contingency plans for alternative payment instruments in crisis situations, cf Report on Payment Systems 1998, section 2.1.6.

As a follow-up to the aforementioned proposal, a central contingency committee for continuity in the financial infrastructure was established in June 1999 in consultation with the Ministry of Finance and key participants in the financial industry. This committee, which is chaired by and has its secretariat at Norges Bank, and has members representing market participants and the Banking, Insurance and Securities Commission, was established as a new operational contingency body in the payment system. The committee is responsible for developing and coordinating measures to solve crises and other situations that may lead to major disturbances in the financial infrastructure. In a crisis situation, the contingency committee shall alert and inform affected market participants and authorities about problems that have occurred and measures that are initiated to solve the problems.

To begin with, the contingency committee was to be prepared to handle any problems connected with the transition to the year 2000. Since the beginning of the year, work has been focused on a proposal to maintain the committee, expand its mandate and alter its composition. A name change to "contingency committee for the financial infrastructure" has also been suggested. The new contingency committee is

intended to replace other existing contingency bodies in the financial sector.

A working group for alternative payment instruments was appointed in August 1998 to follow up the other proposed measure for reducing vulnerability. This group's task was to develop draft contingency plans for executing payment transactions in the event of crises that affect the ordinary payment systems. Norges Bank has chaired and provided the secretariat for the working group, which has included representatives of the banking industry, Posten Norge BA and Norges Bank. The group's work was suspended in April 1999, however, when priority was given to the Y2K contingency plan.

Preparedness in connection with the transition to the year 2000

As a consequence of its responsibility for contributing to a robust and efficient payment system, Norges Bank was responsible for following up the Y2K preparations in the payment system's joint infrastructure. In the spring of 1999, Norges Bank established a separate working group with representatives of public bodies, the banking industry and computer centres to contribute to an optimal transition to the year 2000 in the area of electronic payment systems.

The working group's task was to acquire an overview of and assess the need for additional joint tests, contingency plans and information measures in the payment system. In the view of the working group, the Y2K tests had covered the most important joint systems in the payment system. The working group referred to the submitted test reports' conclusions that showed that the tests had been successful and that the errors found had been corrected. Consequently, the working group considered further testing in the electronic payment system's joint infrastructure unnecessary. In addition, the working group found that the plans for joint efforts to provide information to the general public about the Y2K issue in the banking industry and in connection with securities transactions were well adapted to existing needs. Joint contingency plans were developed in cooperation with the contingency committee.

Special routines for alerting, handling and providing information about any problems that might arise in the financial infrastructure were established under the auspices of the contingency committee as part of the preparations for the transition to the year 2000. These routines provided the basis for a contingency committee exercise during the first part of December 1999. In connection with the New Year's weekend, a special contingency plan was implemented from 28 December 1999 to 4 January 2000. During this period, availability requirements were tightened for contingency committee members. This entailed in particular routines relating to notification about any problems and a plan for reporting status at specified times once or twice daily on 1, 2, 3 January 2000.

The reports received by Norges Bank during the New Year's weekend showed that the transition to the year 2000 did not involve major problems in Norway's financial infrastructure. Some minor operational problems that were discovered during the New Year's weekend were quickly solved. Few of these problems were directly related to the transition to the year 2000.

Substantial liquidity was supplied to banks in the form of fixed-rate loans and currency swaps as part of Norges Bank's contingency measures in connection with the transition to the year 2000. In addition, Norges Bank, like other central banks, built up considerable cash reserves. In December 1999, net withdrawals of cash amounted to about NOK 3bn more than in December 1998. However, there were no reports of abnormal demands for cash at any of Norges Bank's regional offices.

Due to expectations of somewhat greater vulnerability in connection with Leap Year Day on 29 February 2000, it was also decided that the contingency committee should implement a contingency plan in the financial infrastructure. The period from 29 February to 1 March was stipulated as a separate contingency period. Separate routines for alerting, handling and providing information about any problems that might arise were established. No problems were reported in the Norwegian payment system in connection with Leap Year Day.

The thorough preparations and cooperation among participants in the financial sector contributed decisively to a transition to the year 2000 without major problems in the payment system.

2.1.5 New interbank standard for payment messages – NIBE²

Following a study under the auspices of the Banks' Standardisation Office (BSK), savings and commercial banks decided in 1994 to replace the Norwegian interbank standard, BOLS³, with a new interbank standard based on EDIFACT messages FINPAY (Financial Payment). A special project was established in the autumn of 1994 to work on the new Norwegian Interbank standard (NIBE). The banks started using the new national EDIFACT standard in the summer of 1998. A number of the large banks began using NIBE for their transactions fairly quickly. As part of the security measures in connection with the transition to the year 2000, the Banking, Insurance and Securities Commission decided that new IT solutions should not be implemented during the period from 1 July 1999 to 1 March 2000. Therefore, it was not possible for all banks to change over to NIBE in the course of 1999.

² Norwegian interbank standard based on EDIFACT.

³ Banks' online standard

2.2 Payment instruments and systems for payment services

Two acts relating to payment instruments and systems for payment services were adopted in 1999. The Act relating to Payment Systems, etc. (see chapter 2.1.1) introduced mandatory notification to the Banking, Insurance and Securities Commission in connection with the establishment of systems for payment services. The Act defines systems for payment services as systems that are based on standardised terms for the transfer of funds from or between customer accounts in banks and financial undertakings when the transfer is based on the use of payment cards, numeric codes or any other form of independent user identification issued to an unrestricted range of customers. If the Banking, Insurance and Securities Commission finds that such a system is not organised or operated in accordance with the provisions stipulated in or pursuant to legislation, the Commission may order the operator to implement the measures necessary to remedy the situation.

The Act relating to Financial Agreements, which entered into force on 1 July 2000, regulates a range of conditions associated with payment systems and agreements between customers and banks. Systems for payment services will be affected because the Act in principle removes the float in the payment system, in addition to introducing a clear division of responsibility in connection with the use of payment instruments such as giros and payment cards.

In cooperation with BBS (Banks' Central Clearing House), four of Norway's largest banks initiated the Smart Card Norway Project. The project's objective is to prepare the transition from magnetic stripe technology to smart card technology for Norwegian payment cards and payment terminals. The smart card technology will be based on the international EMV standard,⁴ and the plan is to complete the transition by the end of 2004. As part of this project, banks also have plans to introduce new solutions for small payments with smart cards (electronic purse). Notes and coin, payment transfers over the Internet and payment systems and electronic money are discussed in more detail in separate sections below.

2.2.1 Notes and coin series

Norges Bank launched the last denomination in the new coin series, a new 5-krone coin, on 15 September 1998. In an announcement on 9 July 1999, the old 5-krone coin was withdrawn as legal tender. The old 5-krone coin may be redeemed in Norges Bank until 9 July 2010. The withdrawal of

⁴ The EMV (Europay/Mastercard/Visa) standard is an open, international branch standard for payment card migration from magnetic stripe technology to smart card technology.

the old 5-krone coin completes the withdrawal of the old coin series.

A new 500-krone note was put into circulation on 7 July 1999. This is the fourth denomination launched in Series VII of Norwegian bank notes. The obverse has been designed by graphic designer Sverre Morken and contains a portrait of Sigrid Undset as a young woman. The dominant motif on the reverse, designed by graphic designer Arild Yttri, is a wreath of wild roses and ears of wheat, a reference to Sigrid Undset's first book about Kristin Lavransdatter, "The Wreath". In addition to the usual security features on Norwegian banknotes, a wide range of new security features have been introduced. Both size and colour differentiate the new 500-krone note from the other notes in Series VII.

Pursuant to a regulation announced in the Norwegian Legal Gazette of 13 July 1988, the following notes and coins ceased to be legal tender in Norway as from 13 July 1999: All denominations of notes in Series III, produced from 1945 to 1954 and in Series IV produced from 1949 to 1976; 100, 50 and 10-krone notes in Series V, produced between 1962 and 1985; as well as 1 and 2-krone notes from World War II.

2.2.2 The Internet and payment transfers

The Internet is becoming an increasingly important distribution and information channel for banking, financial and payment services. New services and information are being introduced continuously on banks' web sites. Net banking services were further developed in 1999 and a number of banks and brokerage houses began offering stock and securities trading over the Internet. Solutions for electronic bill payment (e-invoice) and banking services for mobile phones are also under development.

At the end of 1999, most banks in Norway, with the exception of a few small savings banks, had established "net banks". The first net bank in Norway was launched in the autumn of 1996 and after a little more than three years, the service has been incorporated into the Norwegian banking industry. There was a dramatic increase in the use of net banking services in 1999. At the beginning of 2000, there were approximately 400,000 net bank customers in Norway, and this figure is rising rapidly. The expansion in net banking services is expected to continue in the future. Via the net banks, customers can enter, control and transfer payments (Internet giro) as well as see account statements. Customers can also transfer funds between their own accounts. In some cases, it is also possible to submit loan applications. New services will gradually be added. Sweden's Skandia established Norway's first pure net bank, ie without branch offices or call centres, at the end of April 2000.

Several banks, bank computer centres and card companies are also working on electronic commerce solutions, with associated payment services. An estimated several hundred Norwegian enterprises were using the Internet as a channel for sales of various goods and services in 1999 (eg flowers, CDs, groceries, air travel, cinema and theatre tickets, news services and software). There are no reliable figures for the overall turnover of these "net shops". Although this type of trade is increasing rapidly, electronic commerce is still limited in relation to more traditional commerce. There are no reliable figures for turnover in electronic commerce in Norway. It is also clear that a large proportion of electronic commerce originates in foreign net sites. Invoicing is increasingly being used as a means of payment for Internet commerce. Other frequently used payment media are CODs and credit cards. There are also a number of "new" online payment methods for Internet commerce.

Secure Electronic Transactions (SET) is an industry standard (defined by leading participants in the industry) for secure data exchange and interfacing between computer systems in connection with both domestic and cross-border electronic commerce. The international card companies and a number of software vendors are important participants in the work with SET. BBS has offered SET throughout 1999, but so far, few have chosen to use it. In order to use SET, both buyer and seller must have a "SET certificate" issued by a card company or bank. BBS has recently taken the initiative to offer a service called BBS ePay, a simplified SET solution for card payments over the Internet. Solutions based on e-money may also be introduced. See section below.

2.2.3 Electronic money

Electronic money may be defined as local, electronically stored purchasing power with a wide range of applications. In 1999, the EU continued to work on the European Commission's draft directive relating to the regulation of institutions that issue e-money. The directive is undergoing final deliberation in the European Parliament and adoption is expected during the summer of 2000. According to the draft directive, e-money institutions (ie non-banks that issue e-money) will be defined as credit institutions and will consequently be subject to the rules in the First and Second Banking Coordination Directives, which give them a "European Passport".⁵ Since e-money institutions have limited activities, some of the rules in the banking directives will not apply or will only apply to a limited extent. The draft allows

⁵ An undertaking with a European passport has satisfied the supervisory authorities in one EU/EEA country and may then establish operations in other EU/EEA countries.

the authorities to grant exemptions to certain rules for small systems, and these systems will not enjoy the benefits of the passport rules. There is no specific statutory regulation of electronic money in Norway. The Act relating to Payment Systems, etc. which entered into force on 14 April 2000 only regulates electronic cash card systems that are backed by customer accounts in banks and financial undertakings.

So far, there are no fully operational e-money systems in Norway. In 1998, Posten SDS purchased rights to the Mondex e-money system and completed two small pilot projects based on this concept in 1999. In September 1999, Christiania Bank, Den norsk Bank/Postbanken, Sparebank 1 and Union Bank of Norway announced that they had initiated a joint project to test smart cards. The banks are planning to launch a cash card based on smart card technology for use with digital pay-TV in October 2000. They intend to develop additional applications for the solution, and in the long run, lay the foundation for a common infrastructure for bank card payments based on smart card technology. BBS is the project coordinator and will be responsible for development and operations. An agreement has been entered into with Proton World to use their technology, which is based on open, international standards. This project is part of a larger project to convert all Norwegian bank cards to smart card technology based on the international EMV standard by the end of 2004.

3 INTERNATIONAL ASPECTS OF THE PAYMENT SYSTEM

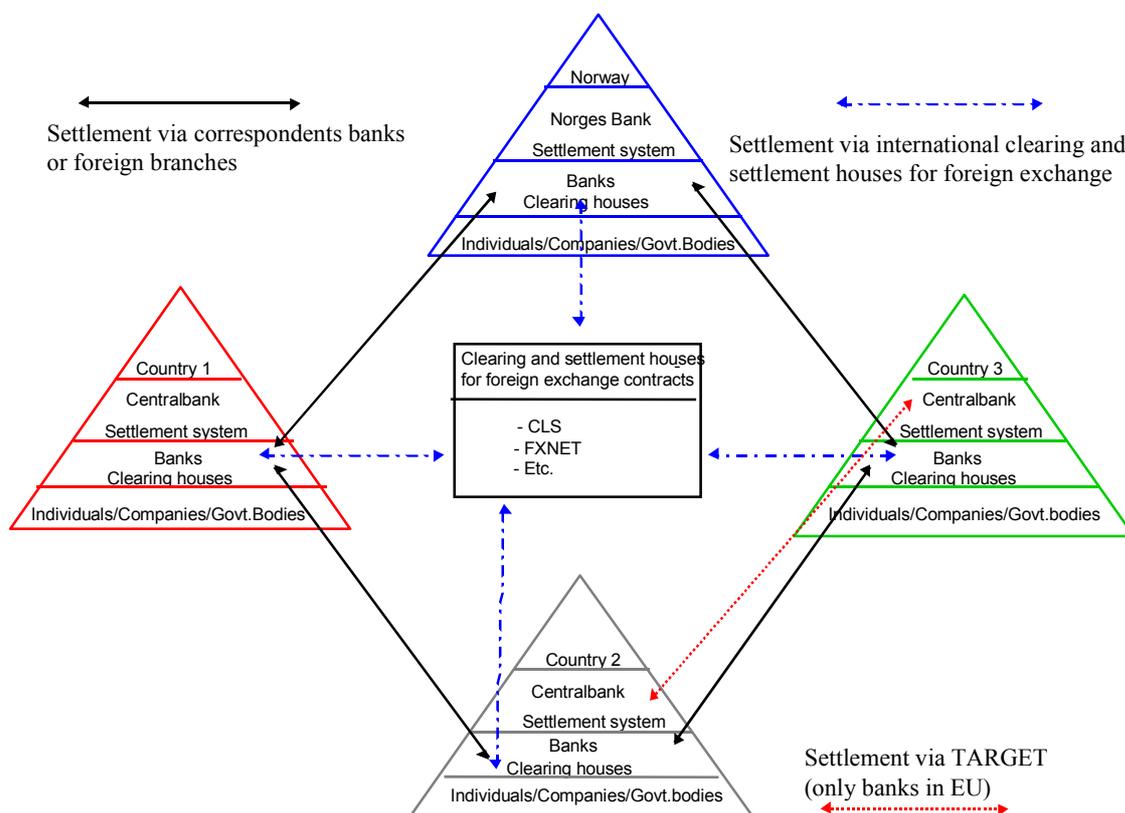
3.1 Cross-border payment transactions

Cross-border payment systems are very different from domestic payment systems, with regard to both payment instruments and the division of responsibility between participants. Cross-border payments are often more complicated because different countries' payment systems are not coordinated.

It is not as easy for a Norwegian bank to directly credit a recipient in a foreign bank as it is to handle domestic payment transactions. Norwegian banks must use accounts in foreign banks (correspondent banks). Payments are transmitted with the help of these correspondent banks, and thus enter the national payment system in the normal way (see Chart 2.1). A range of international clearing and settlement systems have been established or are in the process of being established to reduce liquidity costs and risks associated with cross-border payments. These are discussed in greater detail below.

Chart 3.1 illustrates the process involved in major cross-border payment transactions. The continuous lines show payment transactions that go through correspondent banks, in a structure where the banks have accounts with each other. The payer bank sends a message to the correspondent bank instructing them to credit the recipient's account.

Chart 3.1 Cross-border transactions



The transfer message is usually sent via the SWIFT system, which is an electronic messaging network. If the recipient has an account in the correspondent bank, the transaction is settled in this bank. If the recipient has an account in a different bank, the transaction must go through the domestic payment system before it is settled (see Chart 2.1). If the payer bank has a branch in a foreign country, the transaction is settled in the same way as when a correspondent bank is used.

The broken blue lines illustrate payment settlements that go through international clearing and settlement systems. These systems have been established to make payment settlements more secure and efficient by reducing the number of intermediaries and amounts settled. Systems for settling foreign exchange contracts, eg FXNET, already exist. The red dotted line shows the TARGET system (Trans-European Automated Real-time Gross Settlement Express Transfer). Effective from 4 January 1999, banks in the EU began using TARGET to settle interbank euro payment transactions. This system links all EU central banks' national payment systems in a common real-time gross settlement system. Cross-border payments can thus be completed within seconds or at the most several minutes. This is both faster and more secure than current systems. TARGET will also contribute to a more efficient infrastructure for ordinary payment settlements in euros between banks in the EU area that are outside the euro area. Norges Bank has not been allowed to link up to this system. Norwegian banks with branch offices in the EU have access to TARGET through their branches, whereas other Norwegian banks will in general have to continue using correspondent banks.

Many of the payment instruments that are used for smaller domestic transactions may also be used for transactions abroad. The most frequently used payment instrument is an international payment card, although ordinary bank cards, domestic credit cards and oil companies' cards have access to international networks and may be used in other countries. International payment cards may also be used for cash withdrawals in ATMs abroad.

3.2 Clearing and settlement of foreign exchange transactions

Foreign exchange settlement risk has received increased international attention in recent years. Settlement of foreign exchange contracts involves two different cash settlements in different countries and at different times. Normally, settlement occurs two days after the trade has been agreed. Therefore, two to three business days usually elapse from the time a bank sends foreign currency until it knows with certainty that the purchased currency has been received by the buyer. During this period, the bank

risks losing the entire amount if the counterparty has gone bankrupt. This special type of risk is called foreign exchange settlement risk. The total exposure associated with these types of trades is very high and often exceeds the banks' capital. Studies made by the Bank for International Settlements indicate that foreign exchange contracts worth more than USD 1500bn are settled daily. This exposes the global financial sector to a very high risk.

A subgroup of the G10 countries' Committee on Payment and Settlement Systems (CPSS) is working on issues connected with foreign exchange settlement risk. Norges Bank has been a member of this subgroup since the autumn of 1998. The group's work has included the publication of two market studies about foreign exchange settlement risk in the G10 countries. These studies have contributed to increasing international focus on this type of risk.⁶ More recently, the subgroup has concentrated on following up private initiatives designed to reduce foreign exchange settlement risk. In the spring of 2000, Norges Bank conducted a risk survey of Norwegian banks, using the G10 studies as a model. As expected, the survey shows that there are very large sums involved in foreign exchange settlements, also in Norway, and that banks' total exposure may often exceed total equity. The general impression is that risk management in connection with the largest transactions is fairly good, but that a great deal can still be done to reduce exposure.⁷

Continuous Linked Settlement (CLS), a system which is being developed, will ensure that both currencies in a foreign exchange trade will be settled simultaneously and with full security. The system will operate on the principle of *Payment versus Payment*, which means that a foreign currency is disbursed if and only if a counter payment is received. Participants with net debit positions in various currencies will be able to settle mutual contracts falling due on a particular day through payments made to a special bank. The final settlement will consist of simultaneous account transfers in this bank, thus securing "payment versus payment". As foreign exchange trades are settled, liquidity will be released to the participants and the domestic markets.

CPSS's subgroup has concentrated a great deal of its efforts on CLS recently. The group is

⁶ "Settlement Risk in Foreign Exchange Transactions" (1996) and "Reducing Foreign Exchange Settlement Risk: A Progress Report" (1998), Bank for International Settlement (BIS).

⁷ Settlement risk in foreign exchange transactions and Norges Bank's mapping are discussed in more detail in Bergundhaugen, J. (2000): "Settlement risk in foreign exchange transactions," which is scheduled for publication in *Economic Bulletin* no. 3/2000.

assessing, among other things, the various aspects of risk inherent in the system and the effect on liquidity in different currencies. From the authorities' point of view, it is important that a maximum number of currencies and banks are covered by CLS, so that settlement risk is reduced as much as possible. However, the potential reduction in settlement risk must be weighed against the possibility of increased operational risk.

A private project group is planning to introduce a derivative that can replace isolated foreign exchange trades in cases where participants' sole intent is to take a position against exchange rate fluctuations. The derivative, or method, is called *Contract for Difference* (CFD). With CFD, only the loss/gain in relation to a benchmark index over a period of time goes to settlement. Settlement amounts and settlement risk in foreign exchange transactions are thus reduced. Market data indicate that potentially more than 90 per cent of all ordinary foreign exchange transactions can be replaced by CFD because with CFD it is unnecessary to deliver the entire contract amount. There was little progress in connection with this initiative in 1999, in part because the market's attention is largely focused on CLS.

A more traditional method of reducing settlement amounts is through bilateral netting, where two parties agree to calculate their net positions in each currency according to a number of different currency contracts. There are several kinds of international standard agreements for netting between two parties. In addition, the private US netting house, FXNET, also operates in this market.

In 1999, further efforts were also made to establish a global clearing house called WATCH (World Automated Transaction Clearing House) for small, electronic, cross-border payment transactions. A number of the world's largest financial institutions are responsible for this initiative. So far, the Union Bank of Norway is the only Norwegian participant.

4. TRANSACTIONS AND TURNOVER IN THE PAYMENT SYSTEM

Norges Bank has published statistics on important payment system trends since 1987. The main trends are illustrated by means of text and charts, while tables in the statistical annex contain more detailed information.

The statistics are based on information provided by banks, computer centres, the Bank's Central Clearing House (BBS), the Norwegian Financial Services Association (FNH), the Norwegian Savings Banks Association, Sparebank-Kort, card companies and oil companies. In principle, the figures comprise

all participants in the Norwegian payment system. Some figures are not available, and estimates have been used. In addition, some revisions have been made to data from previous years' reports. It should be noted that figures from 1998 have been adjusted.

Postbanken integrated its payment system with the other banks in 1995 and merged with DnB in 1999. The merged DnB offers Postbanken's former product range alongside its own payment services. Postbanken's products have been pooled with the other banks' products in the statistics and labelled with the other banks' product names. Postbanken's figures for total amounts transferred by giro are highly uncertain for the years through 1995 and are not included in this report. For this reason, there are breaks in the curves in one of the charts in the series and in two of the tables. This has been indicated in the notes to the chart and tables in question. The number of transactions by postal giro in the years through 1995 is also uncertain. These figures have been included since the degree of uncertainty is lower.

Since the banks introduced a new EDIFACT-based interbank standard, NIBE, in the autumn of 1998, there have been some problems identifying electronic giro services in the same way as earlier. Norges Bank has therefore changed its routines for collecting information about electronic giro services. These changes apply from and including 1999.

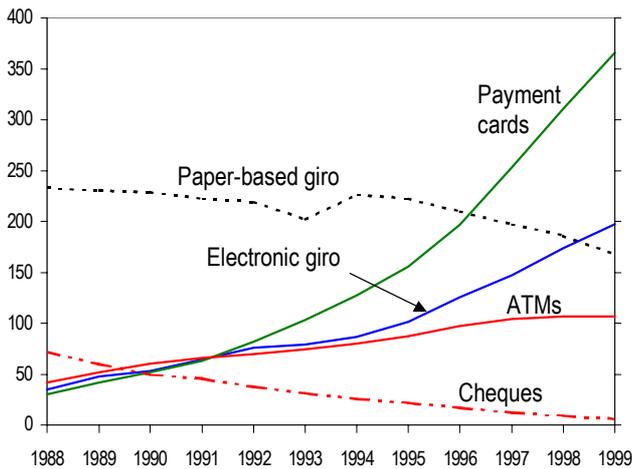
Therefore, the overviews in this year's statistics over developments in electronic giro services from 1998 to 1999 are somewhat uncertain.

4.1 Main trends

Chart 4.1.1 illustrates developments, measured by the number of transactions, in the use of giros, payment cards and cheques, as well as ATM withdrawals in Norway during the period 1988-1999. Disregarding payments involving notes and coins, for which no figures are available, a total of 738 million payment transactions were made in Norway in 1999. The breakdown is as follows: 366 million transactions by giro, 366 million by payment card and 6 million by cheque. The total number of payment transactions increased by 7%, from 681 million in 1998. In addition, the number of ATM withdrawals was approximately the same in 1998 and 1999, ie 107 million.

The use of payment cards has increased sharply during the entire period, while the use of cheques has declined markedly. In 1999, the use of cheques was one-tenth of what it was ten years earlier, whereas payment cards were used nine times more frequently than in 1989. The use of cheques has fallen sharply the last few years, whereas the rise in the use of payment cards has slowed somewhat. The number of cheques dropped by 33% from 1998 to

Chart 4.1.1 Volume of transactions in main groups of payments 1998-99. In millions



Source: Norges Bank

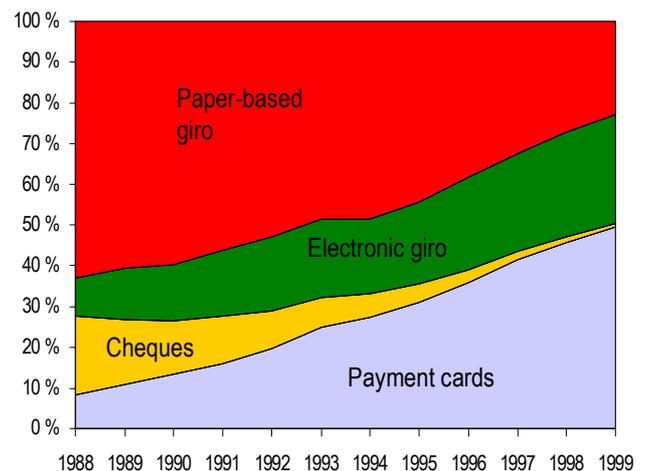
1999, while the number of payment card transactions increased by 17%.

The use of electronic giro services has risen at the expense of paper-based giro services. From 1988 to 1999, the number of paper-based giro transactions fell by 28%, while the number of electronic giro transactions increased by 464%. The increase in the use of electronic giros is partly due to the fact that large-scale payments, such as wages and salaries, tax and social security payments are increasingly being made electronically. Stagnation in the number of payments sent by mail, combined with a surge in the use of new electronic giro services for the retail market, has led to a notable increase in the use of electronic giros compared with paper-based giro services in recent years. The total number of giro transactions rose marginally from 1998 to 1999 (1.6%). The number of electronic giro transactions increased by 13% from 1998 to 1999, while paper-based services declined by 10%, to 169 million transactions in 1999.

The number of ATM withdrawals has risen throughout the 1990s, but this figure remained virtually unchanged at around 107 million from 1998 to 1999. Indications of stagnating ATM use the last few years seem therefore to be reinforced as fees for ATM withdrawals have risen and access to cash through payment terminals, cash-back, has increased.

Chart 4.1.2 shows the percentage distribution of the number of payment transactions broken down by product type. Payment cards were seldom used as a payment instrument prior to 1988. The share of transactions made by payment card has grown sharply, however, and since 1997, payment cards have represented the largest individual group of payment instruments, measured by number of transactions. In 1999, the number of payment transactions made by card was equivalent to the number made by electronic and paper-based giros

Chart 4.1.2 Volume of payment transactions by product type 1988-99

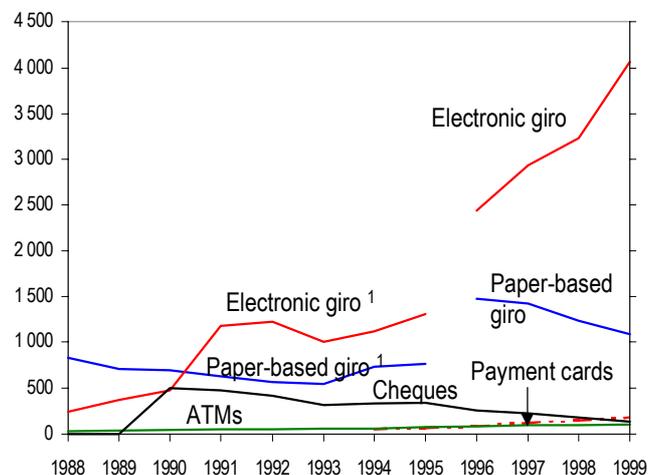


Source: Norges Bank

combined. Nearly half of all payment transactions (excluding cash payments) were made by payment card in 1999. Cheques represented only an insignificant share of all payment transactions, ie less than 1%. In 1999, for the first time, the number of paper-based giro transactions (23%) was lower than the number of electronic giro transactions (27%).

Chart 4.1.3 shows a sharp increase from 1998 to 1999 in the total turnover for electronic giro services. The growth rate was around 26%, ie substantially higher than from 1997 to 1998. In 1999, the total amount transferred by electronic giro was 3.7 times greater than the amount transferred by paper-based giro. Turnover due to ATM withdrawals and card payments has increased every year during the 1990s, although growth rates have slowed somewhat relative to previous years (see Table 4.1.2 for more detailed information).

Chart 4.1.3 Total value in the payment system 1988-99. In billions of NOK



¹ Excluding Postbanken's giro figures

Source: Norges Bank

Despite the large number of payment card transactions, cards' share of the total amount transferred is relatively low, about 3.4% for 1999. Cheques accounted for approximately 2.5% of total turnover in the payment system. This is a considerable share, considering that cheques account for less than 1% of transactions and that payment card transactions outnumber cheque transactions by nearly 60 to one. Giro transactions, and especially electronic giro transactions, account for the largest share of turnover, and rose from 67% in 1998 to more than 74% in 1999. Paper-based giro transactions, on the other hand, declined from 26% of turnover in 1998 to less than 20% in 1999.

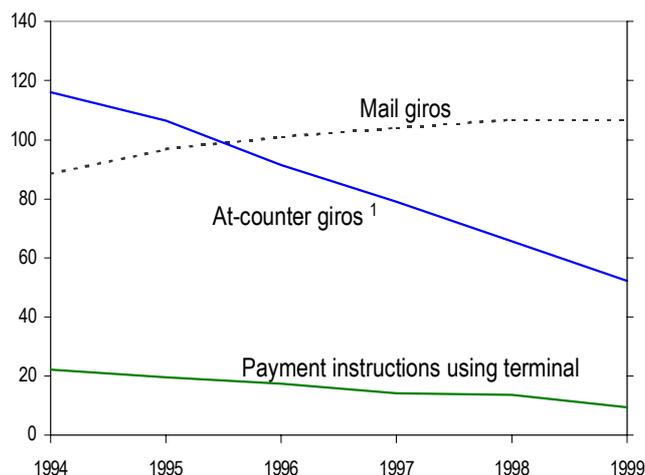
The main trends in the 1990s continued in 1999. Paper-based services, such as giros and cheques, continued to decline in terms of the number of transactions and the amount transferred. The use of electronic services, such as electronic giros and especially payment cards, showed sustained growth, although there are indications of a levelling off in growth trends. This may be related to the fact that these services have gained widespread use during the 1990s and that the market for these services is therefore not growing as rapidly as before.

4.2 Giros

Paper-based giro services

Measured by the number of transactions, the share of mail giros has increased and the number of giros delivered at the counter has declined noticeably the last few years. Since 1996, the majority of giros have been sent by mail. This is primarily due to the mail giro, a service that has seen strong growth since it was introduced by the BBS in 1992. However, growth in the number of mail giros seems to have stagnated. The total number of payments made by mail giro was virtually unchanged from 1998 to 1999, ie 107 million. This is, however, more than twice the number of transactions (52.2 million) made over the counter in 1999. In 1999, all giros delivered at the counter were broken down into giros paid in cash and giros paid by account debits, whereas earlier, some banks were unable to provide such a breakdown. If payments from these banks are excluded, the greatest decline from 1998 to 1999 has been in the number of terminal payments with customer instructions and cash payments, 31% and 24% respectively. Previously, cash payments accounted for a large share of payments at the counter, but in 1999, there were more account debits than cash payments. Account debits came to 56% and cash payments 44% of all giros delivered at the counter in 1999. Terminal payments with customer instructions accounted for less than 6% of paper-based giro transactions in 1999, whereas they amounted to more than 7% in 1998.

Chart 4.2.1 Paper-based giro services 1994-99. In millions of transactions



¹ Giros delivered at counter (both cash payment and account debit giros)

Source: Norges Bank

The use of paper-based giros has declined during the period as a whole, reflecting stagnation in growth for mail giros and a reduction in the number of giros delivered at the counter. The decline from 1998 to 1999, nearly 10%, was steeper than earlier. The negative trend in the use of paper-based services is partly due to an increased use of electronic giro services in the corporate market in connection with wage, tax and social security payments. The decline in recent years is also a result of increased use of electronic services aimed primarily at bill payments by private customers, eg payment by phone (phone giro) and over the Internet (via a net bank).

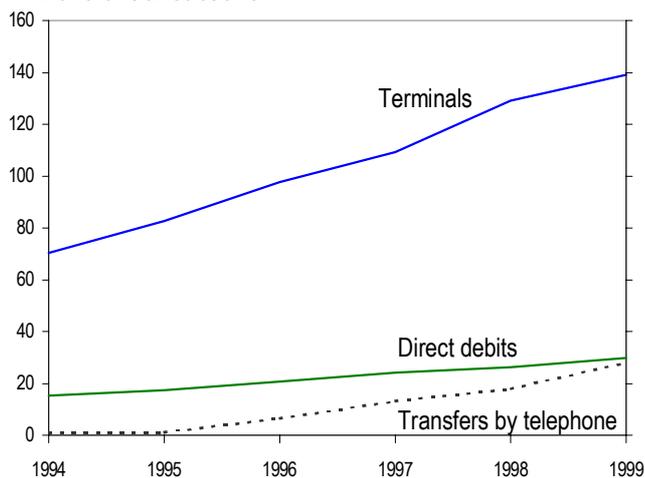
If amounts which some banks were previously unable to break down into cash payments and account debits are excluded, turnover for all types of paper-based services declined from 1998 to 1999. The reduction in turnover was greatest for terminal payments with customer instructions, 41%, and cash payments, 36%. Total turnover for paper-based giros fell by NOK 151.9bn from 1998 to 1999, when turnover was NOK 1089.5bn. Payments made at the counter are generally larger than payments made by mail giro. Therefore, even though there are two mail giro payments for every giro payment made at the counter, mail giro turnover is not appreciably higher. In 1999, mail giros accounted for 55% of total turnover for paper-based giro services, whereas giros delivered at the counter (cash payment or account debit) and terminal payments with customer instructions came to 43% and 2% respectively.

Electronic giro services

Electronic giro services are based on the use of terminals in businesses, institutions and households

Chart 4.2.2 Volume of electronic giro services 1994-99.

Millions of transactions



Source: Norges Bank

(payments over the Internet or by phone), as well as direct debits. The use of electronic giro services also increased in 1999, although growth in total use of services was less pronounced from 1998 to 1999 (14%) than from 1997 to 1998 (19%). More than 197 million transactions employing electronic giro services were recorded in 1999. Chart 4.2.2 shows that the more moderate growth in the use of electronic services is partly due to a modest rise (7.6%) in the number of terminal-based payments from 1998 to 1999 (139.1 million), whereas there was a 19% growth in these transactions from 1997 to 1998. The increase in terminal-based payments is entirely due to vigorous growth in the number of payments made over the Internet. There were only marginal changes in the use of terminals for other types of payments (large-scale payments, etc) from 1998 to 1999. Payments made over the Internet have not been included explicitly in this chart due to a lack of reliable data for 1997. The number of payments over the Internet rose by 359% from 1998 to 14.5 million transactions in 1999. Thus, giro payments over the Internet outnumbered total phone giro payments made in 1997. There were two direct debits and ten paper-based giro payments for every payment made over the Internet in 1999. Turnover increased from more than NOK 7bn in 1998 to nearly NOK 40bn in 1999. The sharp rise in the use of Internet-based giros from 1998 to 1999 suggests that there will be a substantial increase in the future as well.

There was also a sharp rise (more than 55%) from 1998 to 1999 in the number of payments made by phone. A total of 28 million payments was made by phone in 1999. The number of direct debits increased by 13% from 1998 to nearly 30 million in 1999. Direct debit services still represent the greatest share of electronic giro services used for other types of payments than companies' large-scale

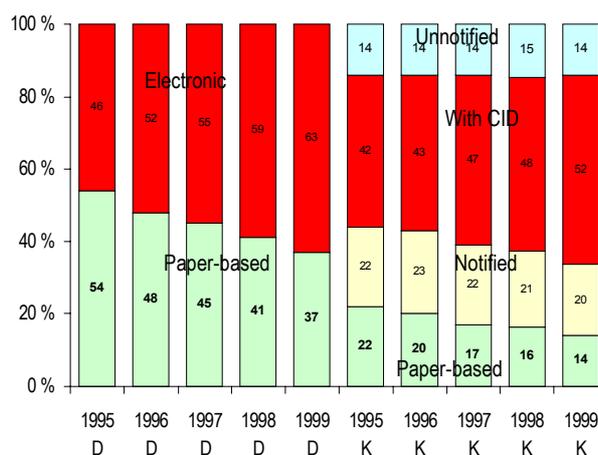
payments. All told, the share of electronic services for purposes other than large-scale payments, etc has been on the rise in the corporate market. In 1997, electronic services were used in 17% of the cases (calculated as the share of Internet-based giros, phone-based giros and direct debits), whereas electronic services were used in 32% of all cases in 1999. This suggests that electronic giro services are in the process of capturing a far greater share of the personal customer market than before.

In terms of total value, the use of terminals clearly tops all electronic giro payments. This is partly because a relatively large amount is transferred per transaction (NOK 27,600 on average). Terminal giros account for 95% of the total amount transferred electronically. At present, turnover for Internet giros is low, ie approximately 1% of turnover for all terminal transactions. As before, direct debits account for about 4% of the amount transferred electronically, while transfers by phone come to around 1%.

Incoming and outgoing payments by giro method

Chart 4.2.3 shows the breakdown of paper-based and electronically initiated incoming payments. The chart also shows how payment is received. Payments received on paper are either received in paper-based form or by notification in the mail. Payments received electronically are received either without notification (unnotified) or with a customer identification number (CID). The share of electronically initiated incoming payments has increased on an annual basis and was 63% in 1999.

Chart 4.2.3 Incoming and outgoing giro transfers 1995-99 ¹



¹ Key to the charts:

Unnotified: Payments sent and received electronically without notification

With CID: Payments sent electronically or in paper-based form, which are received electronically with customer identification

Notified: Payments sent electronically and received with paper-based notification

Paper-based: Payments sent and received in paper-based form (standard bank giros, money orders and payment instructions etc.)

Source: Norges Bank

Payment recipients recorded an increase in the share of electronic payments from 56% in 1995 to 66% in 1999. Electronic payments with a CID number have accounted for the bulk of the growth. The share of payments sent and received in paper-based form is diminishing steadily and was 14% in 1999.

4.3 Payment cards, cheques and ATMs

Payment cards and cheques

Chart 4.3.1 provides an overview of the use of payment cards and cheques. The use of payment cards has risen sharply, whereas cheque use has plummeted. This is due to a strong increase in the number of payment terminals and a gradual coordination of the infrastructure for card payments, as well as higher processing fees for cheques. A total of 366 million transactions were made by payment

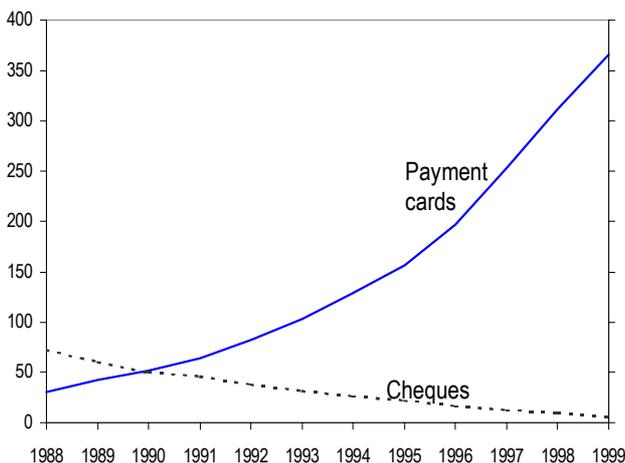
card in 1999, ie nearly 9 times as many as in 1989. The number of cheques written in 1999 has dropped to one-tenth of the figure from 1989, ie from 60.3 million in 1989 to 6.3 million in 1999. For every cheque payment in 1999, 58 payments were made by payment card.

Amounts paid by cheque are larger than individual card payments. Up to and including 1998, the total amount paid by cheque, measured in NOK, exceeded total payment card transactions, but in 1999, payment card turnover surpassed total cheque turnover. In 1999, payment cards were used for the purchase of goods and services worth a total of NOK 185bn (including payment terminal cash withdrawals or cash-back), whereas cheque payments totalled NOK 139bn.

Chart 4.3.3 shows the number of payment cards issued by banks, credit card companies and oil companies. All card types issued have increased sharply in number since 1991. International payment and credit cards have increased most during this period, and this card group also increased most from 1998 to 1999, ie 19%. In 1999, for the first time, there were more international payment and credit cards than bank cards. The number of bank cards and domestic credit cards rose by 5% and 11% respectively, while the number of cards issued by oil companies declined by 8%, due in part to termination of inactive cards.

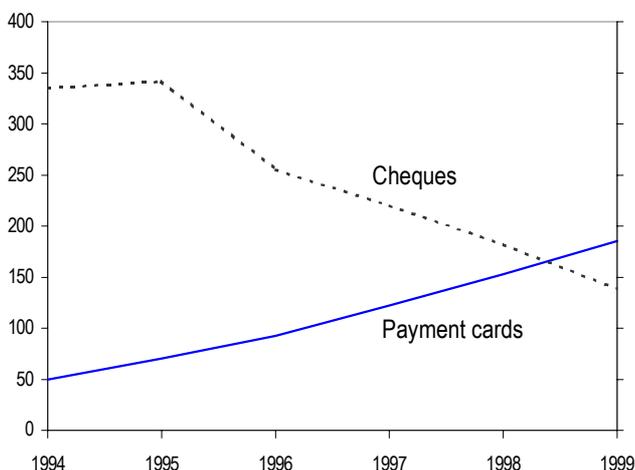
The breakdown shown in Chart 4.3.3 does not take into consideration that many (physical) cards may be combinations of the individual card groups presented in the chart. Combined cards are not included in the chart, although there has been a sharp increase in the number of these cards. At end-1999, a total of nearly 3.2 million combined cards had been issued in Norway, ie three times as many as at end-1994. Combined cards provide access to more than one payment system. The increased

Chart 4.3.1 Use of payment cards and cheques 1988-99. In millions of transactions



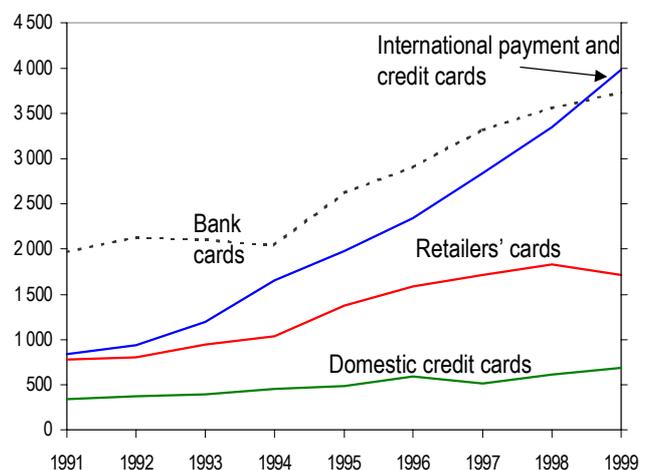
Source: Norges Bank

Chart 4.3.2 Use of payment cards and cheques 1994-99. Total value of transactions in billions of NOK



Source: Norges Bank

Chart 4.3.3 Number of payment cards issued as at year-end 1991-99. In thousands



Source: Norges Bank

number of combined cards has therefore led to improved access to payment systems for Norwegians. The combination of bank card and international payment card is still most common, although other card combinations are now more common than earlier.

There were approximately 6.9 million (physical) payment cards in Norway at end-1999, representing an increase of more than 305,000 cards since 1998 and an increase of nearly 2.8 million since end-1994.

Chart 4.3.4 shows that bank card transactions accounted for the highest share of card transactions in Norway in 1999, ie 77% of all payment card transactions (excluding ATMs). Oil company cards made up 12% of transactions, and international payment and credit card transactions accounted for 11%. Domestic credit card transactions are not included in the chart due to their very low share (0.2%). The share of bank card transactions has grown every year since 1995, whereas oil company card transactions have declined. The share of transactions made by international payment and credit cards has remained virtually unchanged during the period. However, a steadily increasing number of these cards are combined cards that may also be used as bank cards. An average of 103 bank card transactions (including ATM withdrawals) per bank card (including combined cards) were made in 1999 compared with 95 the year before. On average, 27 transactions were made per petrol card in 1999, whereas the average number of transactions per international payment and credit cards was 11. These figures represent transactions both in Norway and abroad using cards issued in Norway.

Use of bank cards (excluding ATM withdrawals) accounted for about 73% of total turnover with payment cards. International payment and credit

cards accounted for 17%, petrol cards for 7% and domestic credit cards for 3% of total turnover.

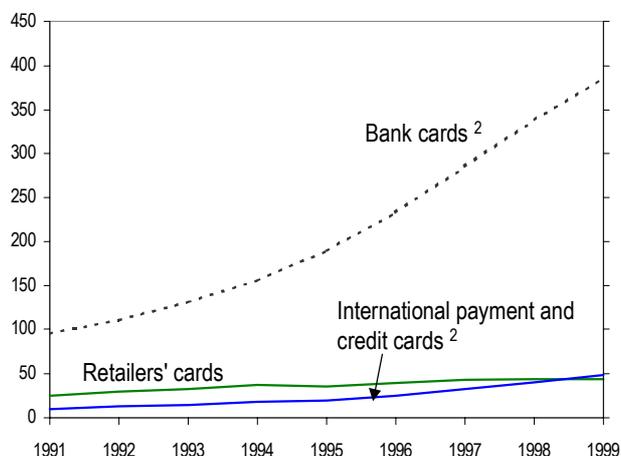
Petrol cards have the lowest turnover share, even though there are more transactions with petrol cards than with international payment and credit cards. This is because petrol cards are used for relatively small purchases, whereas international payment and credit cards are more frequently used for large purchases.

The average transaction by bank card at payment terminals (EFTPOS) was NOK 471 in 1999, whereas average purchases of goods and services with international payment cards and petrol cards were NOK 805 and NOK 299 respectively. ATM withdrawals using bank cards averaged NOK 969, while the average cash withdrawal using international payment or credit cards was NOK 1483.

International card companies

Four card companies share the Norwegian market for international payment and credit cards: Diners Club Norge AS, Europay Norge AS, VISA Norge AS and DnB Kort AS which issues the American Express card. Chart 4.3.5 shows that VISA is the card most used since 1991. Europay is the second most widely used card, followed by Diners Club and American Express. The number of transactions with international payment cards has increased throughout the entire period. The total number of transactions involving international payment and credit cards increased by 20 % from 1998 to 1999. Use of these cards has increased nearly fivefold in the 1990s. Approximately 19% of transactions and 30% of the total amount were cash withdrawals. In 1999, 23% of transactions using international cards were recorded manually, compared with 25% in 1998.

Chart 4.3.4 Volume of transactions for various groups of payment cards 1991-99. In millions ¹

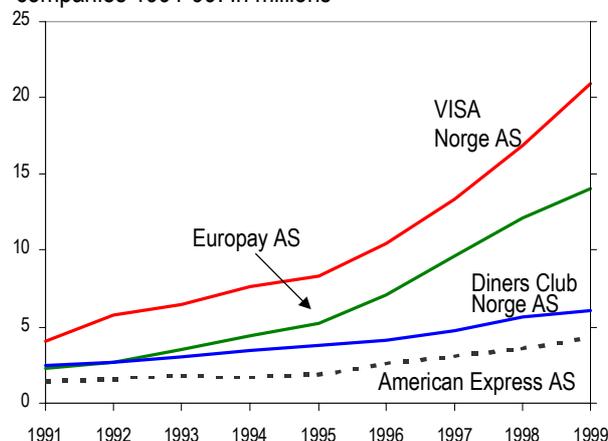


¹ Figures for combined cards are broken down according to use.

² Including ATMs

Source: Norges Bank

Chart 4.3.5 Volume of transactions for international card companies 1991-99. In millions



Source: Norges Bank

Domestic credit cards

The market for domestic credit cards is essentially shared by GE Capital Bank (offering Her & Nå, Kjøpekort, and X-tra Kapital), DnB Kort AS (Multikort) and Union Bank of Norway's Credit Card Division (offering Kjøpekort, Reserve Konto, Cresco Card, YS Card, NAF Card and Acceptance Card). Union Bank of Norway (including the card operations of the former Gjensidige Bank) has had the largest share of turnover in the credit card market every year since 1994. In 1999, Union Bank's credit cards accounted for 55% of the total amount transferred using domestic credit cards, while GE Kapital Finans (GE Capital Bank) and DnB Kort accounted for 37% and 8% respectively. Table 4.3.4 in the annex shows developments for the various card companies. A large percentage of domestic credit card transactions are still processed manually. Of all domestic credit card transactions, 32% were processed manually in 1999, compared with 42% the previous year.

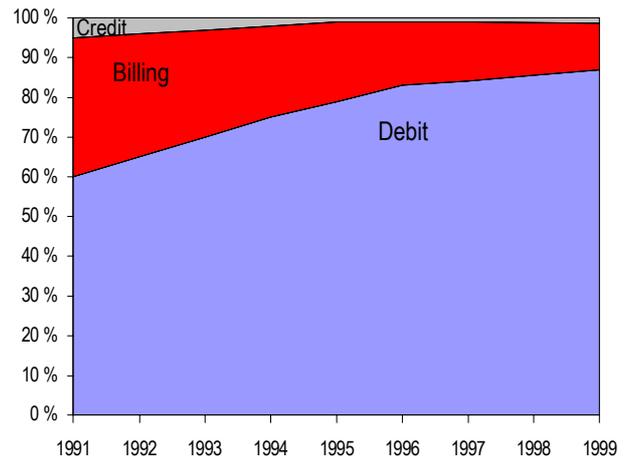
Oil company cards

AS Norske Shell, which purchased Norske FINA AS on 4 March 1999, Conoco JET Norge AS, Esso Norge AS, Hydro Texaco AS and Statoil Norge AS issue petrol cards for use at their own petrol stations' payment terminals. Despite a sharp increase in the use of oil company cards since 1991, growth has stagnated the last few years, and the number of transactions was virtually unchanged from 1998 to 1999. Turnover has risen throughout the entire period, however, even though the increase has been modest the last two years. On average, each card was used for 27 transactions in 1999, a small increase compared with the last two years. The average amount per card transaction also rose somewhat compared with last year and was NOK 299 in 1999. It is also possible to use other cards, such as bank cards, in the oil companies' payment terminals.

Settlement method

Chart 4.3.6 shows the breakdown of card transactions by settlement method. Either the payer's bank account is directly debited, an invoice is received and must be paid after a certain number of weeks, or the card extends a line of credit, and repayment may be made in instalments. Debit cards are used most frequently in connection with payments, and their share of transactions has increased throughout the period, rising from 60% in 1991 to 87% in 1999. This growth has come mainly at the expense of invoicing cards, but has also taken over a share of the credit card market. Credit card transactions accounted for a small share of transactions (1%).

Chart 4.3.6 Breakdown of payment card transactions by card type 1991-99

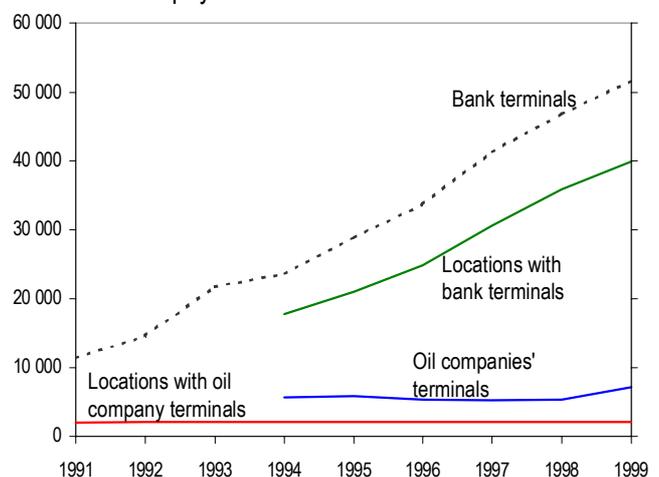


Source: Norges Bank

Payment terminals (EFTPOS – Electronic Funds Transfer at Point of Sale)

Banks' payment terminals have been installed in kiosks, shops, shopping centres and post offices, whereas oil companies have installed their own terminals at petrol stations. Chart 4.3.7 shows changes in the number of terminals owned by banks and oil companies, as well as developments in the number of sites with bank and oil-company terminals. At end-1999, there were 58,734 payment terminals at 42,164 user sites in Norway, ie approximately twice as many terminals and user sites as at end-1994. Banks account for the largest increase in the number of payment terminals in recent years. At end-1999, there were 51,618 bank-owned terminals at 39,978 user sites in Norway. The oil companies introduced payment terminals earlier

Chart 4.3.7 Number of payment terminals and of locations with payment terminals 1991-99

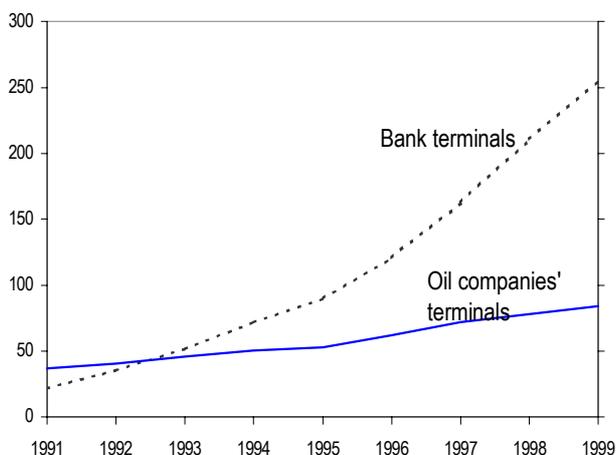


Source: Norges Bank

and saw the largest increase in the number of their terminals during the 1980s. The number of petrol stations with card terminals has remained fairly stable since 1991.

Chart 4.3.8 shows that the use of payment terminals has increased sharply. The number of payment terminal transactions has increased almost sixfold from 1991 to 1999. A total of 338.8 million payment terminal transactions was recorded in 1999. The use of bank terminals has advanced most, with 11 times as many transactions in 1999 as in 1991. Bank terminal transactions accounted for 75% of all card use at payment terminals.

Chart 4.3.8 Use of banks' and oil companies' payment terminals 1991-99. In millions of transactions



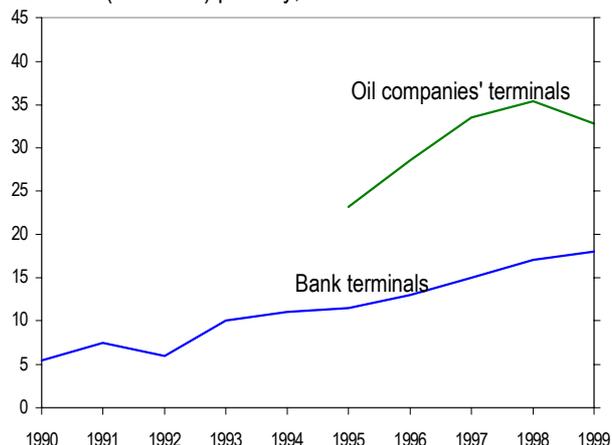
Source: Norges Bank

Banks' terminals accept international payment and credit cards, as well as domestic credit cards in addition to bank cards. Bank cards accounted for more than 96% of card use in banks' terminals in 1999.

There has also been a noticeable increase in the use of oil companies' terminals throughout the 1990s. The number of card payments at petrol stations more than doubled from 1991 to 1999. The number of card transactions in 1999, 43.8 million, was virtually unchanged, however, compared with 1998. Oil companies' terminals accept bank cards and international payment and credit cards in addition to their own cards. Bank cards have been used increasingly as a means of payment at petrol stations in recent years. In 1999, 45% of these transactions used bank cards, compared with 32% in 1995, whereas 52% of payments were made by using oil companies' own cards.

Chart 4.3.9 illustrates the use of banks' and oil companies' payment terminals. Following a steady increase, the use of oil companies' terminals fell somewhat in 1999. On average, oil companies' terminals were used 33 times per day in 1999 compared with 35 times per day in 1998. Use of

Chart 4.3.9 Average volume of transactions per payment terminal (EFTPOS) per day, 1990-99



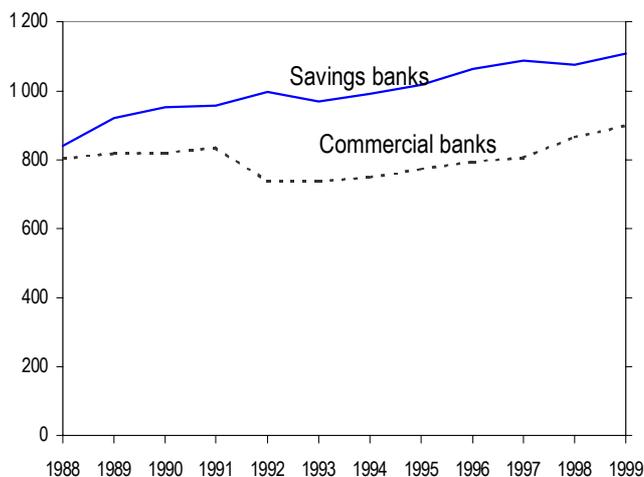
Source: Norges Bank

bank terminals has increased during the entire period, and each bank-owned terminal was used on average 18 times per day in 1999.⁸

ATMs

The most substantial increase in the number of ATMs occurred in the mid-1980s. Growth in the number of ATMs in the 1990s has been modest. At end-1999, there were 2007 ATMs in Norway. Chart 4.3.10 shows developments in the number of ATMs broken down by commercial banks and savings banks. For many years, commercial banks have had a stable number of ATMs. Since 1997, however, the number has increased by 93, so that there were 900 ATMs at end-1999. The number of savings banks' ATMs has increased by 32% since 1998. Developments in the number of ATMs during this period must be viewed against the background of structural

Chart 4.3.10 Number of ATMs 1991-99



Source: Norges Bank

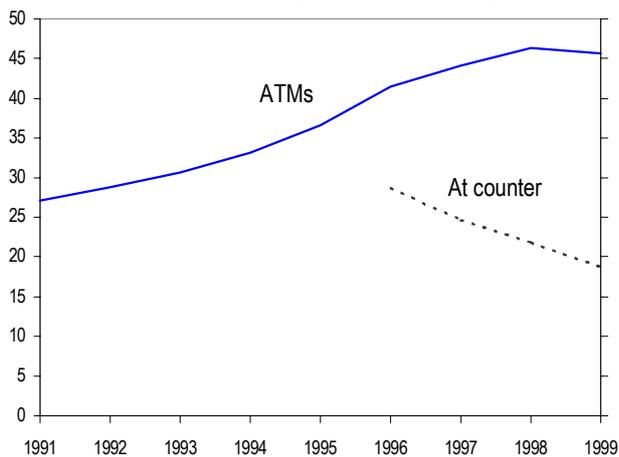
⁸ These figures are based on 270 business days for shops and 360 business days for petrol stations.

changes in the banking sector and the emergence of payment terminals that offer cash-back.

The number of ATM transactions has increased by 62% since 1991, but growth has stagnated the last couple of years and the number of withdrawals in 1999 was virtually unchanged compared with 1998, ie 107m. 57% of withdrawals were made at savings banks, which have the greatest number of ATMs. There was a slight decline in the use of commercial banks' ATMs, whereas there was a small increase in the use of savings banks' ATMs, compared with 1998.

Chart 4.3.11 shows the number of ATM and at-the-counter withdrawals for commercial banks. The number of cash withdrawals at the counter has declined by 35% since 1996 and numbered about 19 million in 1999. During the same period, the number of cash withdrawals from commercial banks' ATMs rose by 10% to around 46 million. On the whole, the number of cash withdrawals from commercial banks has declined by 8% since 1996.

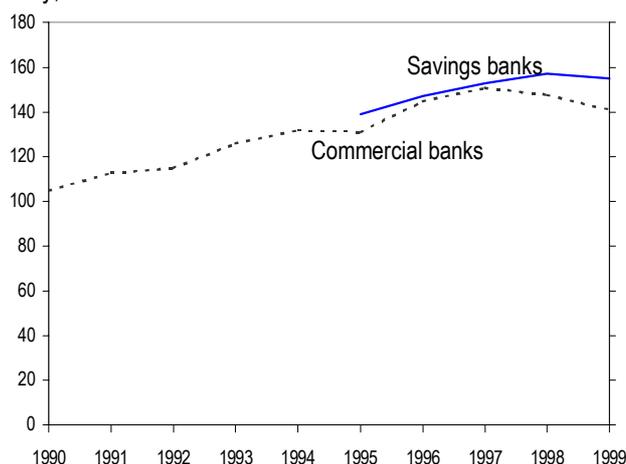
Chart 4.3.11 Number of cash withdrawals from ATMs and at counter in commercial banks 1991-99. In millions



Source: Norges Bank

A total of more than NOK 105bn was withdrawn from ATMs in 1999, representing an increase of only 3% from 1998, but a 100% increase compared with 1991. The increases have generally been somewhat larger in commercial banks than in savings banks. Despite the decline in the number of transactions at commercial banks' ATMs, turnover increased somewhat both in commercial and savings banks' ATMs from 1998 to 1999. On average, each ATM withdrawal was NOK 983 in 1999, compared with NOK 954 in 1998. In 1991, the average withdrawal was NOK 781. Chart 4.3.12 shows developments in the use of ATMs throughout the 1990s. In general, savings banks' ATMs have been used somewhat more frequently than commercial banks' ATMs during the entire period. In 1999, the average number of withdrawals per day per ATM

Chart 4.3.12 Average number of withdrawals per ATM per day, 1990-99



Source: Norges Bank

was 155 for savings banks and 141 for commercial banks.

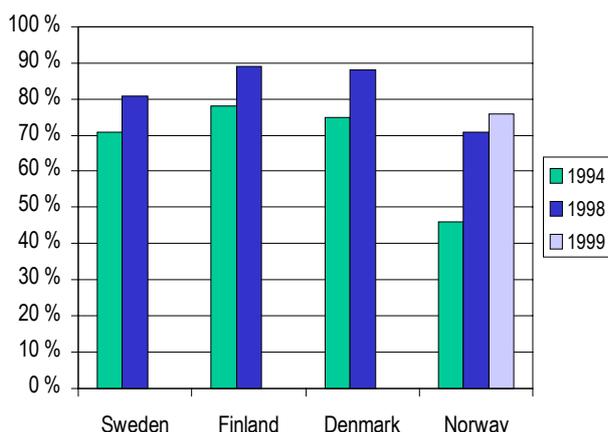
Banks' ATMs accept bank cards, international payment and credit cards and domestic credit cards. Although there has been a sharp rise in the use of cards other than bank cards, the share of non-bank card use is still small. Of total withdrawals in 1999, 95% were made using bank cards, whereas international payment and credit cards and domestic credit cards were used for 4% and 1% respectively.

Bank cards may also be used for cash-back transactions at payment terminals. It has proven difficult to obtain figures for the number and amount of cash withdrawals from payment terminals because of different registration routines. However, there is reason to assume that the number of cash withdrawals from payment terminals has increased appreciably in recent years and that this may have influenced developments in cash withdrawals from ATMs and at the counter.

The efficiency of the payment systems in the Nordic countries

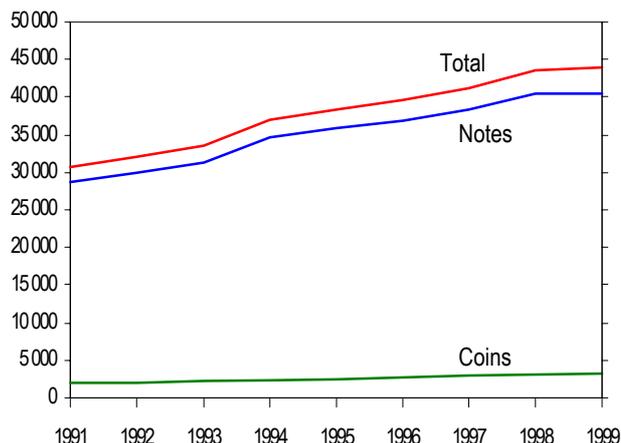
Electronic payments' share of the total number of non-cash payments may be used as one of several measures of the efficiency of retail payment systems. Chart 4.3.13 shows developments in the share of electronic payments in the Nordic countries. The chart indicates that Norway lagged behind the other Nordic countries in 1994. It also shows that the increase in electronic payments has been steeper in Norway than in the other Nordic countries the last few years. Although Norway has narrowed the gap considerably since 1994, the share of electronic payments is still lower in Norway than in Sweden, Finland and Denmark.

Chart 4.3.13 Electronic payments as a share of the total number of non-cash payments in Scandinavia



Source: Norges Bank, BIS, ECB

Chart 4.4.1 Cash in circulation 1991-99. Yearly average value in millions of NOK



Source: Norges Bank

4.4 Notes and coins

Cash in circulation

Norges Bank issues notes and coins to the extent required to cover demand and to replace notes and coins that have been withdrawn from circulation and destroyed due to wear and tear. Notes and coins are in demand for the purpose of making payment transactions and storing wealth. Households are the main users of cash as a payment instrument. It is reasonable to assume that the growth in both transaction and wealth-related demand for cash is positively correlated with production and demand trends in the Norwegian economy. The availability and cost of cash in relation to alternative means of payment as well as changes in people's attitudes and payment habits are other important factors that may explain developments in the use of cash and cash in circulation.

In 1999, there was an average of NOK 43.8bn in notes and coins in circulation. Notes accounted for nearly 93% and coins accounted for more than 7% of the value of cash in circulation. The value of cash in circulation has risen in the 1990s, but seems to be levelling off now. As a percentage of private consumption, cash in circulation has diminished

moderately between 1991 and 1999 (see Table 4.1). Since 1998, banks' deposit rates have been higher than in the period 1995–1997, and the opportunity cost of holding cash has thus increased after having been low for a number of years. This trend, in combination with the increase in giro and card payments, may indicate that electronic payment methods are increasingly replacing cash.

Notes

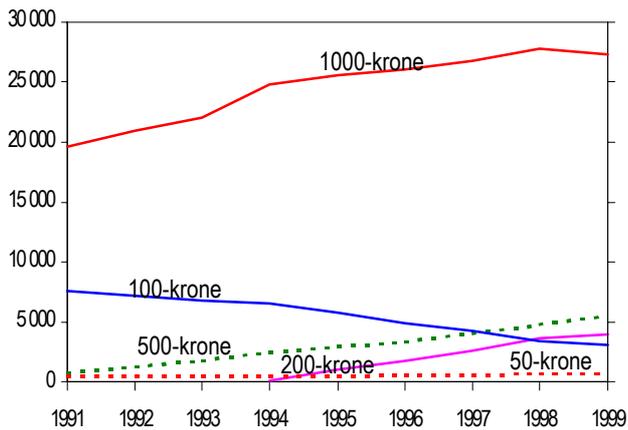
The average value of notes in circulation was NOK 40.6bn, only 0.2% higher than the average in 1998. The figures for inflows to Norges Bank give a different picture than the other figures. Banks and post offices delivered 6.2% more notes to Norges Bank in 1999 than the year before and the value of these notes was 8.9% higher than in 1998. A total of 525 million notes was delivered. This may suggest a change in circulation patterns, but the sources do not provide a complete picture of the public's use of cash.

The different denominations' share of the value of notes in circulation has changed considerably. The decline in the 100-krone note and the increase in the 500-krone and 200-krone notes are most obvious. The 200-krone note was introduced in

Table 4.1 Cash in circulation compared with other variables 1991-99

	1991	1993	1995	1997	1998	1999	91-99 % change
Cash in circulation (in NOK bn)	30.7	33.4	38.4	41.2	43.6	43.8	43 %
Private consumption (in NOK bn)	350	380	435	495	524	535	53 %
Cash in circulation % of private consumption	8.8 %	8.8 %	8.8 %	8.3 %	8.3 %	8.1 %	
Nominal deposit rate, banks	8.0 %	5.1 %	3.5 %	2.2 %	4.2 %	4.5 %	
Consumer price index, percentage change	3.4 %	2.3 %	2.4 %	1.3 %	2.6 %	2.3 %	

Chart 4.4.2 Denominations of notes in circulation 1991-99. Yearly average value in millions of NOK



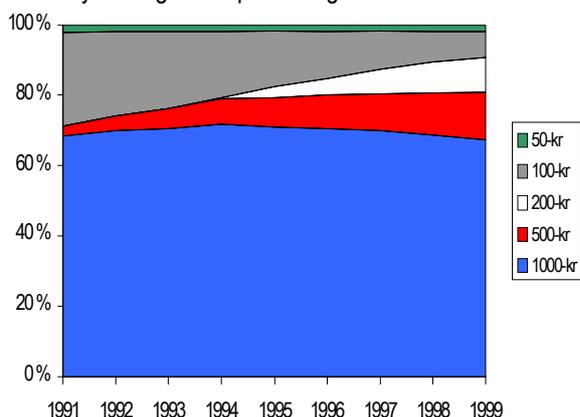
Source: Norges Bank

1994, and in 1999, the average value of 200-krone notes in circulation was NOK 3,949m. The value of 500-krone notes in circulation has risen from NOK 828m in 1991 to NOK 5,588m in 1999. Norges Bank has encouraged the use of 200-krone and 500-krone notes in ATMs to reduce the number of notes necessary to meet demand.

The 1000-krone note still accounts for the highest share of notes in circulation measured in value (about 67%), although there has been some decline the last few years. It is generally perceived that the high share is largely due to the note's use as a store of wealth. Chart 4.4.3 also shows that the 100-krone note's share of notes in circulation is shrinking and was 7.5% in 1999 (on average). The 100-krone note's share has largely been taken over by the 200-krone and 500-krone notes. The 50-krone note represents a small, yet stable share of notes in circulation. In 1999, the 50-krone note represented 1.8% of notes in circulation.

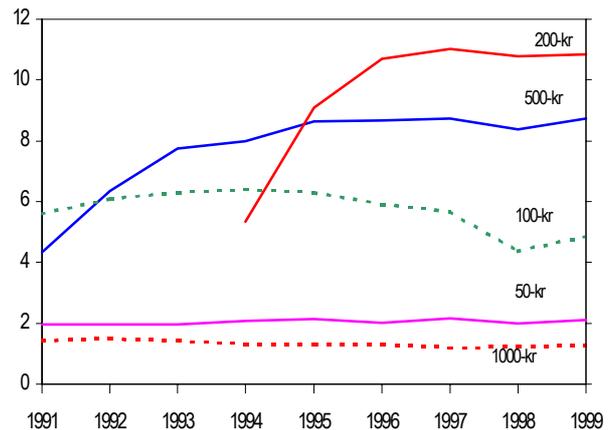
The circulation rate for notes (defined as the number of times notes pass through Norges Bank

Chart 4.4.3 Denominations of notes in circulation 1991-98. Yearly average as a percentage of value



Source: Norges Bank

Chart 4.4.4 Rate of note circulation 1991-99¹



¹ Average number of times per year that notes pass through Norges Bank

Source: Norges Bank

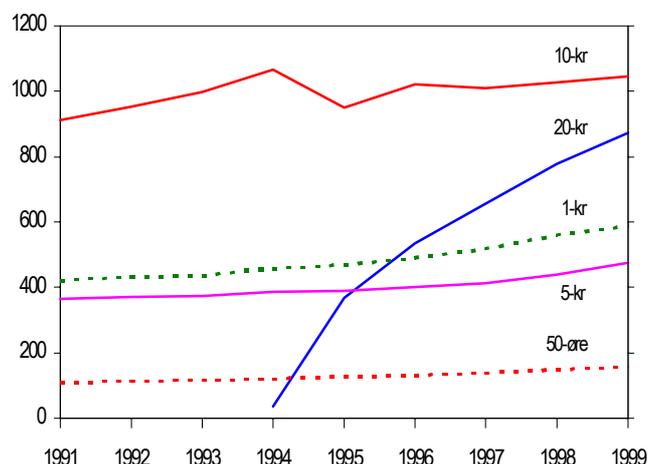
each year) has remained fairly stable in recent years, but rose somewhat in 1999 (Chart 4.4.4). The circulation rate was 5.28 in 1999, compared with 4.71 in 1998. The relatively high circulation rate for 200-krone and 500-krone notes mainly reflects that these denominations have largely replaced 100-krone notes in ATMs.

Fully automated note sorting systems at Norges Bank's regional branches count, authenticate and sort by quality the used notes that are delivered by banks and post offices. In the same process, notes that are no longer of circulation quality are destroyed. The number of notes destroyed in 1999 was low due to Norges Bank's decision to build up an extra reserve at the end of the millennium.

Coins

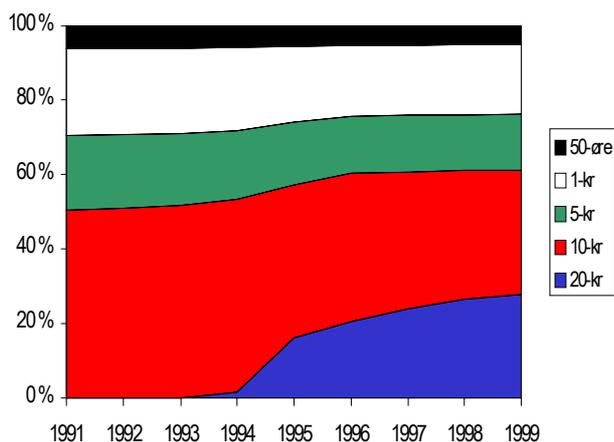
The yearly average value of coins in circulation was NOK 3,271m, an increase of 5.9% compared with 1998. The 20-krone coin showed 12% growth in

Chart 4.4.5 Denominations of coins in circulation 1991-99. Yearly average value in millions of NOK



Source: Norges Bank

Chart 4.4.6 Denominations of coins in circulation 1991-99. Yearly average as a percentage of value



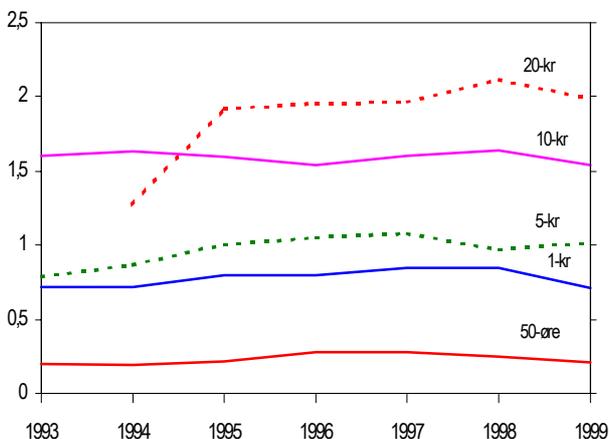
Source: Norges Bank

1999, compared with its value in circulation in 1998, and at end-1999 accounted for 26.7% of coins in circulation. The growth in coins in circulation may be related to the increasing number of toll roads, game and coin-operated machines. In addition, the 20-kroner coin, introduced in 1994, has contributed to an increase in the value of coins in circulation.

Despite the increase in coins in circulation, the inflow of coins to Norges Bank in 1999 dropped to 832 million coins, a 6.2% decline compared with 1998. Measured by value, the inflow was unchanged from the year before. It is difficult to draw any conclusions about the public's use of coins from the input data.

Chart 4.4.7 shows that the circulation rate for the different coin denominations has been fairly stable the last few years. The circulation rate is highest for the largest denominations.

Chart 4.4.7 Rate of coin circulation 1993-99¹



¹ Average number of times per year that coins pass through Norges Bank

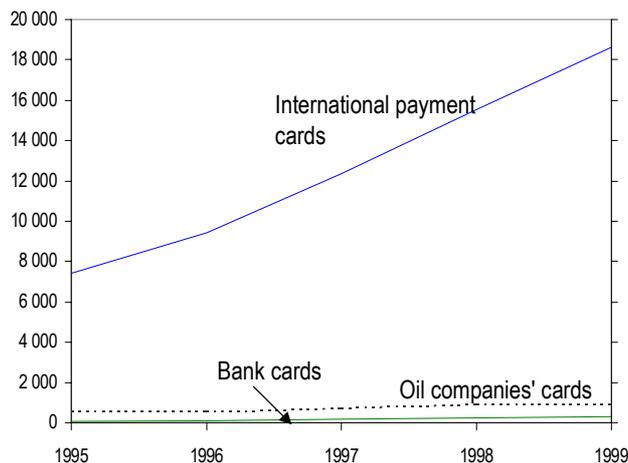
Source: Norges Bank

4.5 International payment transactions

International card use

Cards are used increasingly in connection with cross-border payments. Chart 4.5.1 shows Norwegians' use of cards abroad measured by number of transactions. In 1999, nearly 20 million payments were made abroad with Norwegian cards, 2½ times as many payments as in 1995. The use of international payment and credit cards increased by 20% and 27% respectively from 1998 to 1999, whereas use of petrol cards declined somewhat. International payment cards have accounted for the dominant share of card payments abroad. Norwegians' use of international payment and credit cards has increased each year since 1991, measured both by number of transactions and total amounts. In 1999, these cards were used in more than 95% of transactions, while petrol cards were used in less than 5%.

Chart 4.5.1 Norwegians' use of cards abroad 1995-99. In thousands of transactions

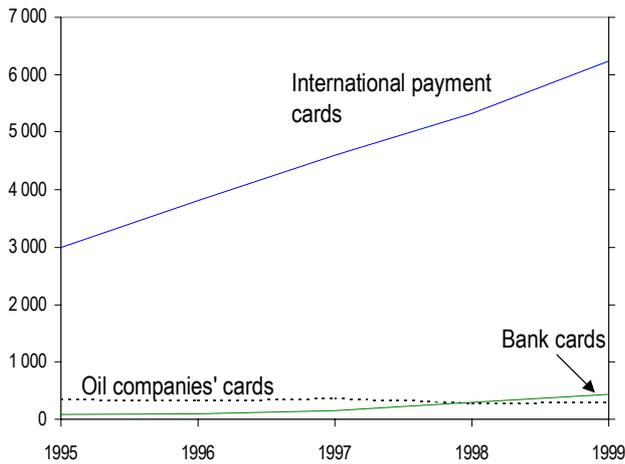


Source: Norges Bank

Chart 4.5.2 shows that international payment and credit cards accounted for the dominant share (nearly 96%) of foreigners' use of payment cards in Norway in 1999, whereas more than 4% of the transactions related to petrol card use. The use of foreign credit cards in Norway is lower than the use of Norwegian credit cards abroad, and growth in card use has also been somewhat lower. The number of transactions made with Norwegian cards abroad outnumber those made with foreign cards in Norway by nearly three to one. In addition, turnover relating to Norwegian card use abroad was nearly four times as high as turnover relating to foreign card use in Norway.

Eufiserv is an international ATM network established by European savings banks and may be used by all savings banks in Norway. The network has been in operation since 1991. In 1999, 328,000

Chart 4.5.2 Non-residents' use of cards in Norway 1995-99. In thousands of transactions



Source: Norges Bank

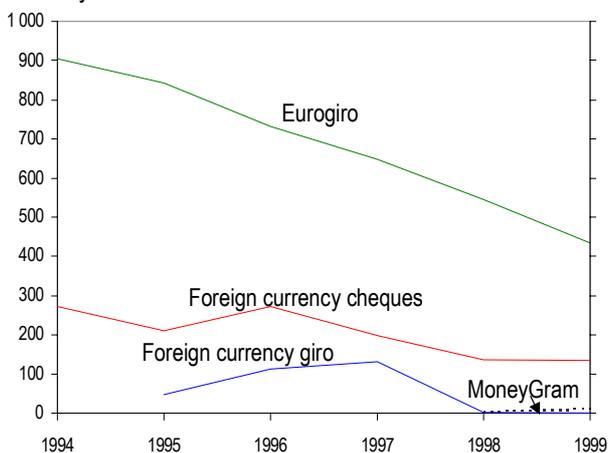
transactions were made with Norwegian payment cards in foreign ATMs linked to Eufiserv, while 429,000 transactions made with foreign cards were entered in Norwegian ATMs.

Petrol cards have been used abroad since the beginning of the 1980s. The main rule is that oil companies' cards are only accepted by foreign sister companies, but some oil companies also accept foreign payment cards. In 1999, 917,000 transactions with Norwegian petrol cards were recorded abroad, whereas 293,000 transactions with foreign payment cards were made at Norwegian petrol stations.

Transfers from Norway to other countries

Chart 4.5.3 shows the number of transfers from Norway to other countries using foreign currency cheques, foreign currency giros and the services Eurogiro and MoneyGram. The use of foreign currency cheques and giros has declined appreciably since 1994. The number of foreign currency giro

Chart 4.5.3 Foreign currency cheques and giro transfers from Norway to abroad 1994-99. In thousands of transactions



Source: Norges Bank

transactions increased somewhat after the service "Valutagiros" was introduced by BBS in 1995, but the service's share of transfers abroad was relatively low. The service was discontinued in 1998.

MoneyGram, a system for express payments, is owned by MoneyGram Payment System in the US. Transfers, using codes, are made through banks and exchange offices that are linked to the system. At end-1999, MoneyGram Payment System had offices in the US, South America, Europe, Israel, India, Singapore, Hong Kong, Thailand and Africa. In Norway, the service is offered by DnB/Postbanken, which linked up to the system in 1997. In 1998 and 1999, 4,000 and 9,000 MoneyGram transfers respectively were made from Norway to a foreign country.

SWIFT (Society for Worldwide Interbank Financial Telecommunications)

The SWIFT system is an electronic network system for transferring messages. The system plays a key role in the international payment system and is used for most of the transfers made both between Norwegian institutions and abroad. At end-1999, the system had more than 3,000 members and about 7,000 users worldwide. SWIFT has 21 Norwegian members (including Norges Bank). Other members include BBS, which is a registered user, and foreign banks with offices in Norway, that have independent links to SWIFT.

The number of messages handled by this system is increasing steadily. In 1999, more than 1 billion messages were sent worldwide, a 13% increase compared with 1998. The total number of Norwegian messages came to about 8.1 million in 1999, more or less unchanged in relation to 1998. One important reason for the lower growth rate in Norwegian SWIFT messages compared with international rates is that Norwegian banks have increased the volume of SWIFT traffic via London. The number of SWIFT messages may not be used as a direct measure of the number of transactions that are sent over the network. It is not uncommon that two to three messages are sent for each individual transaction. A number of other types of messages related to securities transactions, trading, system messages etc. come in addition. Messages related to payments represent about 80% of the total number of SWIFT messages in Norway, as compared with 60% internationally.

5. PRICES IN THE PAYMENT SYSTEM

Prices for payment services affect the public's choice of such services. Therefore, it is important to monitor price trends in the payment system. Norges Bank has compiled statistics on price trends in the

payment system since 1989. Since 1995, the statistics have been published annually, and since 1999, Norges Bank has published a separate statistical booklet on price trends that provides the basis for the analysis in this chapter. The price statistics cover eight commercial banks and 18 savings banks. These banks account for 91% and 71% respectively of the two bank groups' market shares measured by sight deposits. Prices in this report were obtained at year-end. Prices for 2000 were gathered on 1 January 2000.

The two bank groups' average prices are calculated by weighting the price per transaction in each bank according to the bank's share of sight deposits. In the private customer market, prices at DnB and Postbanken are weighted together, whereas only DnB's prices are used in the corporate market. Average prices for all banks in the survey are calculated by weighting the two bank groups' prices according to the groups' actual market shares, measured by the number of transactions in 1999.

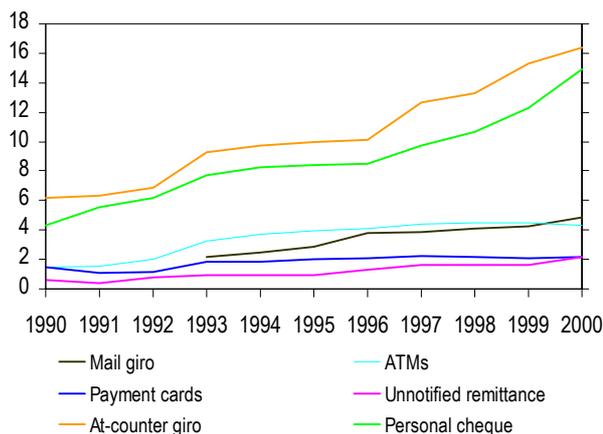
All banks in the survey have reduced prices or price exemptions on services that are normally subject to charges for special account or customer groups. Pensioners are the most common customer group with reduced prices or price exemptions. Such discounts for special customers/accounts have not been taken into account when calculating average prices. The real average prices for these services are therefore somewhat lower than those shown in the charts and tables.

5.1 Domestic payment systems

Prices for most types of payment services have increased in 2000, compared with 1999. This increase is a continuation of a long-term trend in the 1990s towards more cost-based pricing for payment services. Thus, to a greater extent than earlier, current prices reflect banks' real costs for payment services. The trend towards more expensive and more cost-based pricing is partly related to increased competition in the banking industry, which in turn has led to a gradual reduction in the difference between banks' lending rates and deposit rates (interest rate margin). Thus, there is a connection between the reduction in the interest rate margin and the degree to which banks are subsidising their payment services by cutting prices.

Chart 5.1.1 shows average prices for some of the most common payment services. Prices in the period as a whole have risen most for paper-based services, such as giros delivered at the counter and personal cheques. However, during the 1990s, prices have also increased for electronic services (represented in the chart by remittance without notification - unnotified remittance - and card services). Average prices for ATM withdrawals have also risen during the period as a whole. Generally, prices for

Chart 5.1.1 Prices in NOK for payment transactions and ATM withdrawals 1990-2000¹. Averages for all banks



¹ Other banks' ATMs outside business hours

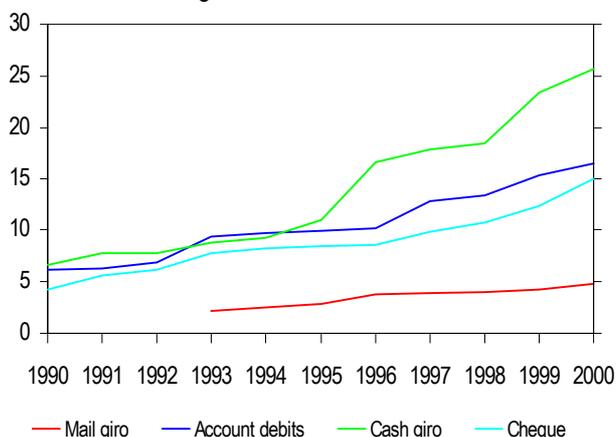
Source: Norges Bank

electronic services are considerably lower than prices for paper-based services. This reflects the fact that paper-based services are generally more cost-intensive to execute and that banks have tried through pricing to change demand trends in favour of more cost-effective electronic services. It should be emphasised, however, that a number of electronic payment services also entail a fixed charge for users. These charges have not been included in the survey.

Paper-based giro services

Chart 5.1.2 shows price trends for paper-based giro services during the period 1990-2000. Compared with 1999, the statistics reflect a moderate price increase in 2000 on giros paid in cash at the counter and giros paid by account debits at the counter. Both of these services require considerable manual handling, however, and are therefore costly. As in earlier years, the price for processing cheques has risen substantially again in 2000 (about 20%). The

Chart 5.1.2 Prices in NOK for paper-based giro services 1990-2000. Averages for all banks



Source: Norges Bank

price for mail giros has risen more in 2000 (about 14%) than in the last few years. Mail giros are the most cost-effective of all paper-based services, but are nonetheless assumed to be more expensive to execute than electronic giro services.

Electronic giro services

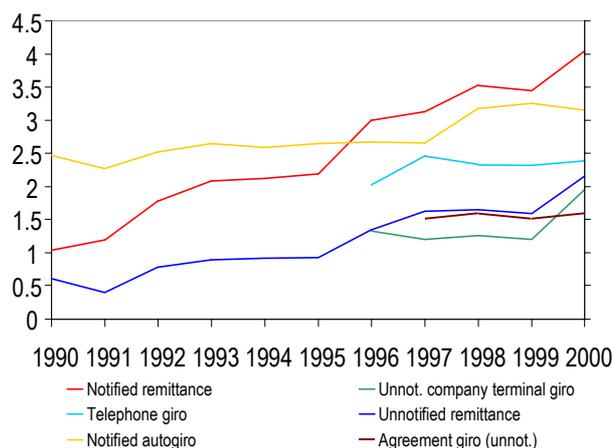
Chart 5.1.3 shows average prices for some of the most frequently used electronic giro services. Prices for electronic giro services are generally lower than prices for paper-based services. For example, at the beginning of 2000, the price for a telephone giro was NOK 2.38 and the price for a giro paid over the Internet was NOK 2.31. This is considerably less than the price for their “competitor”, the mail giro, which cost NOK 4.84 (see Chart 5.1.2). However, the general picture at the beginning of 2000 is that prices for nearly all electronic services have increased this year. Prices for some of the electronic giro services rose insignificantly, whereas other services became considerably more expensive. Autogiros (direct debits) with notification and company terminal giros with CID numbers are the only electronic giro services that are less expensive now than in 1999. Prices for payment services such as unnotified remittance, notified remittance and unnotified company terminal giros have risen substantially. The price for unnotified company terminal giros in particular has risen substantially. The average price surged from NOK 1.20 per transaction in 1999 to NOK 1.95 per transaction in 2000, an increase of more than 60%. The price of an unnotified remittance has gone up 35%, while the price of a notified remittance has climbed 17% since last year. These price increases are greater than what has been normal for electronic services the last few years.

ATMs and payment terminals

In most of the banks in the survey, the price for ATM withdrawals depends on whether the withdrawal is made from the customer’s own bank’s ATMs or ATMs owned by other banks. The term withdrawals in other banks’ ATMs means withdrawals from ATMs that are not owned by the bank where the customer has an account.

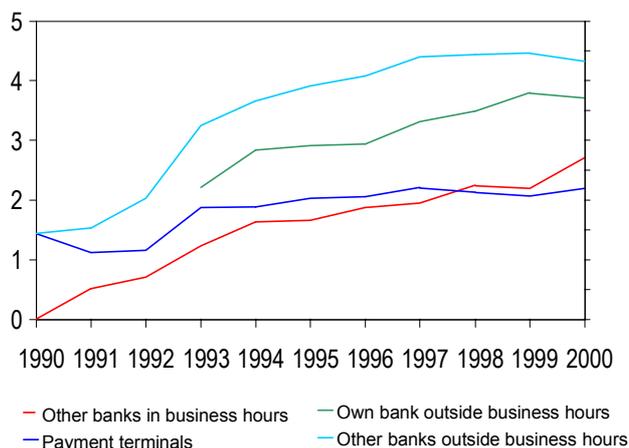
Chart 5.1.4 shows the average prices for ATM withdrawals in the period 1990-2000. Prices for different types of ATM withdrawals rose substantially during the first half of the 1990s, whereas prices have been fairly stable since 1996. In general, it was most expensive to make cash withdrawals from other bank’s ATMs outside business hours. At the beginning of 2000, this cost on average NOK 4.32. Withdrawals from own bank’s ATMs outside business hours cost NOK 3.71 on average. Withdrawals from other banks’ ATMs during business hours cost on average NOK 2.71 at

Chart 5.1.3 Prices in NOK for selected electronic giro services 1990-2000. Averages for all banks



Source: Norges Bank

Chart 5.1.4 Prices in NOK for use of ATMs and payment terminals (EFTPOS) 1990-2000. Averages for all banks



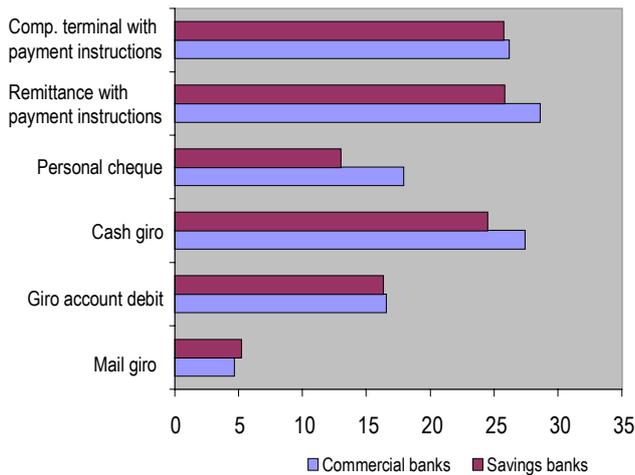
Source: Norges Bank

the beginning of 2000. This represented an increase of 24% compared with the previous year. Withdrawals from own bank’s ATMs during business hours are still free of charge in most banks and are therefore not included in the chart. The average price of using a card in a payment terminal has generally been stable since 1993. At the beginning of 2000, this service cost NOK 2.19 on average. So far, cash withdrawals from payment terminals (cash back) have not usually been subject to special charges.

Commercial banks and savings banks

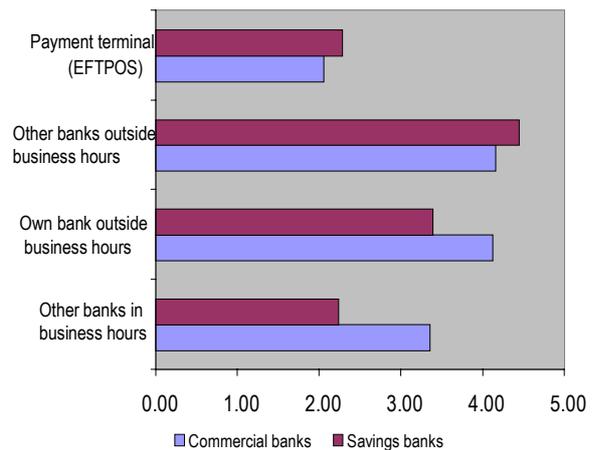
Charts 5.1.5, 5.1.6 and 5.1.7 (see also Table 5.1.2 and 5.1.3 in the annex) compare commercial and savings banks’ average prices for payment services. The main trend is that both bank groups set a higher price on cost-intensive services that involve a great deal of manual work. The charts show, however,

Chart 5.1.5 Commercial and savings banks' prices in NOK for paper-based services in 2000



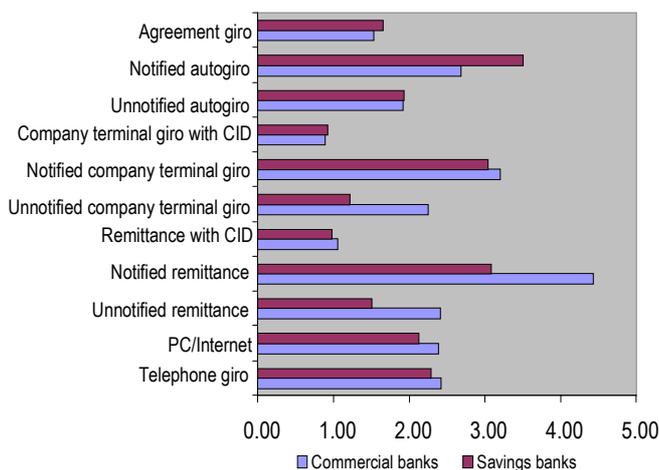
Source: Norges Bank

Chart 5.1.7 Commercial and savings banks' prices in NOK for ATM withdrawals and use of card payment terminals (EFTPOS) in 2000



Source: Norges Bank

Chart 5.1.6 Commercial and savings banks' prices in NOK for electronic services in 2000



Source: Norges Bank

that there are considerable differences in the two bank groups' prices on individual payment services. With regard to paper-based services, banks' prices differed most on the use of cheques, giros paid in cash at the counter and remittances with payment instructions. Commercial banks were more expensive on average than savings banks for all of these services. On the other hand, savings banks' average price for mail giros (NOK 5.19) was higher than commercial banks' average price (NOK 4.62).

Commercial bank's prices for the majority of electronic services were also higher. The greatest price difference was in connection with the use of company terminal giros without notification, and remittance both with and without notification. The average price for giros paid over the Internet was also somewhat higher in commercial banks than in savings banks. Savings banks' prices were higher, however, for autogiros with notification and

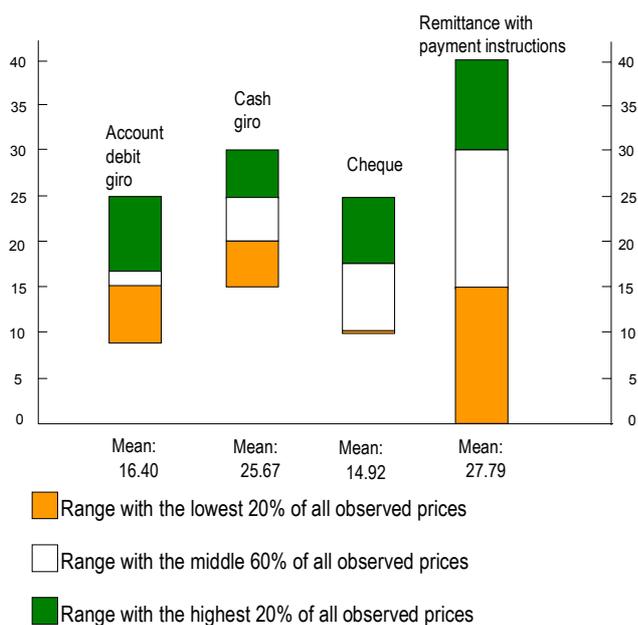
somewhat higher for the use of cards in payment terminals (EFTPOS). Commercial banks' prices were higher for cash withdrawals from other banks' ATMs during business hours and from own ATMs outside business hours, whereas savings banks' prices were higher for cash withdrawals from other banks' ATMs outside business hours.

A comparison of the two bank groups' prices for the period 1990-2000 as a whole does not give a clear picture. Price statistics show that commercial banks were more expensive for the majority of payment services. Some important exceptions exist, however: use of cards in payment terminals (EFTPOS), mail giros and autogiros have been more expensive in savings banks than in commercial banks, especially since 1996.

Price spread

Charts 5.1.8-5.1.10 show the spread in the 27 banks' prices on various payment services. The vertical axis shows prices in NOK, whereas the three-coloured bars indicate price intervals, from the lowest to the highest observed price for a specific payment service. For each of the twelve payment services shown in the charts, price observations are grouped in three intervals: a price interval with the lowest 20% of price observations, an interval with the middle 60% of price observations, and an interval with the highest 20% of observations. A large spread in prices for a service is indicated in the charts by long price intervals. Short intervals indicate a small price spread, either in the lowest, middle or highest part of price observations. For some of the payment services, the lowest or highest price observation is the same as the price observation that forms the limit for the 20% lower or upper price interval. This means that there are at least four banks with the same lowest or highest price on the service in question.

Chart 5.1.8 Price spread in 2000 for selected paper-based services, for three price ranges, in NOK

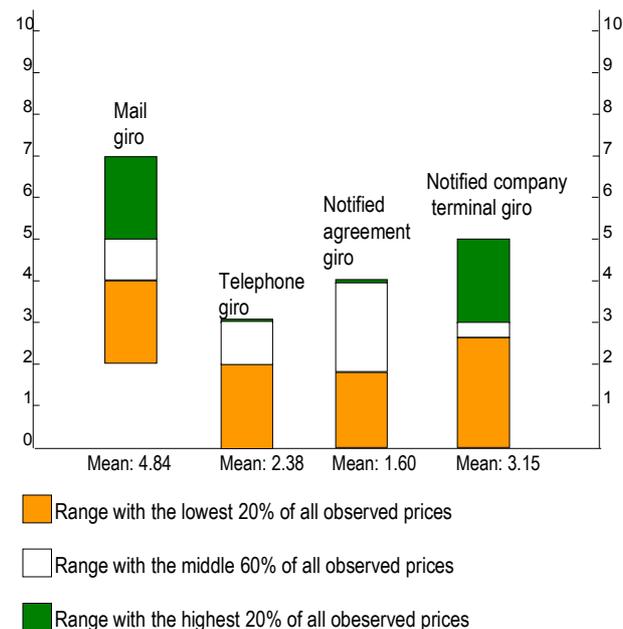


Source: Norges Bank

In general, the price spread is still relatively large on many payment services. The variation in paper-based services (measured as a percentage of deviation from the average) is substantially less than the variation in the electronic payment services. All banks have high prices for giros paid by account debits at the counter, giros paid in cash at the counter, cheques and remittances with payment instructions (see Chart 5.1.8). Remittance with payment instructions is the paper-based service with the largest price spread. The price on this service varies from NOK 0-40, although there is only one bank that offers this service free of charge, while two banks charge NOK 40. The other banks charge customers between NOK 10 and NOK 30 for this service. Among paper-based services, prices vary least for giros paid in cash at the counter. With the exception of one bank, which charges NOK 15, all other banks charge between NOK 20 and NOK 30 for this service. The price spread for mail giros is small, especially in relation to the majority of electronic services (see Chart 5.1.9). One bank takes NOK 7; another takes NOK 2, while the rest take either NOK 4 or NOK 5 for this service.

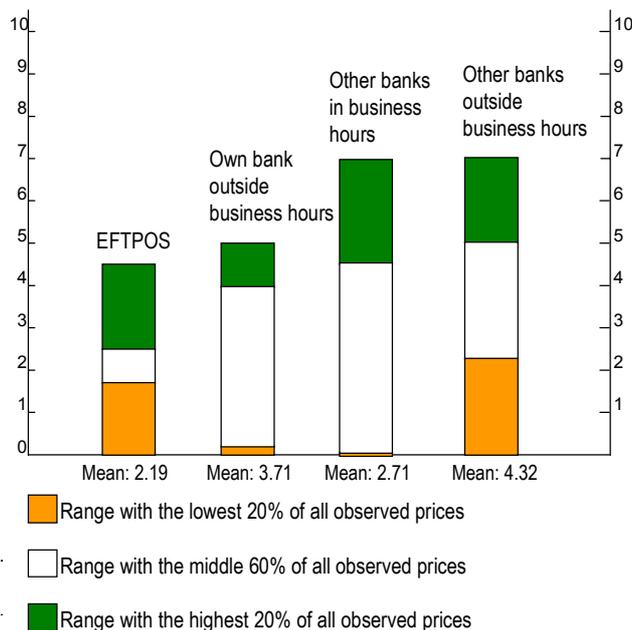
Measured in NOK, price differences for electronic giro services are small, but this is because electronic services cost little to begin with. However, the percentage deviation from the average (which is not shown in the charts) shows that price differences between banks are fairly large. Of the electronic giro services, notified company terminal giros, unnotified autogiros, both notified and unnotified agreement-based giros and telephone giros show the smallest percentage spread in prices.

Chart 5.1.9 Price spread in 2000 for selected low-priced giro services, for three price ranges, in NOK



Source: Norges Bank

Chart 5.1.10 Price spread in 2000 for ATM withdrawals and use of cards in payment terminals (EFTPOS), broken down into three price ranges, in NOK



Source: Norges Bank

The service notified remittances has the greatest price spread. One bank charges NOK 10 for this service, another offers the service free of charge, while the rest charge between NOK 2 and NOK 4. Prices for the use of cards in payment terminals (EFTPOS) also vary substantially. One bank offers EFTPOS services free of charge; another bank charges its customers NOK 4, while the rest charge between NOK 1 and NOK 3.

Cash withdrawal from other banks' ATM's outside business hours is the ATM service with the greatest price spread (both in absolute figures and as a percentage). While ten banks offer this service free of charge, the other 17 banks charge between NOK 2 and NOK 7 for this service. Prices for ATM withdrawals from a customer's own bank's ATMs outside business hours vary considerably. Seven banks offer this service free of charge, while the rest take between NOK 2 and NOK 5 for this service.

The general impression is that banks' price profiles vary quite substantially for electronic payment services, whereas price variations are less pronounced for paper-based services. It is difficult to observe any difference in the price spread for savings banks and commercial banks.

5.2 Cross-border transfers

Table 5.2.1 in the annex shows banks' average prices for cross-border transfers at the beginning of 1999.¹² Paper-based orders for cross-border payments generally cost somewhat more than electronic services. The price difference is lowest for SWIFT urgent transfers.

Prices for cross-border transfers depend on the amount to be transferred. Most banks in the survey also have an additional charge for sending confirmation to the payee. A number of banks also charge customers for incoming cash payments and conversions in third-country currencies. Customers' real transfer costs may therefore be higher than the prices shown in Table 5.2.1.

6 NORGES BANK'S RESPONSIBILITIES IN CONNECTION WITH PAYMENT SYSTEMS

6.1 Responsibilities and tasks in connection with payment systems

Norges Bank is responsible for:

- Promoting stable and efficient payment systems
- Clearing and settlement between banks
- Production and distribution of banknotes and coins

Norges Bank is divided into wings according to their functions. Wing II is responsible for policy-oriented tasks associated with promoting the efficiency of payment and settlement systems, and

¹² Data with prices at 1.1.2000 are lacking and therefore not presented here. Norges Bank will, if possible, present the figures in the next Annual Report on Payment Systems.

for the operational aspects of the settlement function. With effect from 2000, Wing II is also responsible for general tasks associated with the supply of cash. Wing III is responsible for the operational aspects of the production, distribution and destruction of notes and coins. Payment system statistics are collected and processed by the Statistics Department in Wing I.

The central government's consolidated account

The role played by Norges Bank in the central government's consolidated account system is defined in an agreement with the Ministry of Finance. In 1999, four registrars, Postbanken, Den norske Bank (DnB), Christiania Bank and Union Bank of Norway effected payment transfers under the consolidated account scheme. There are now about 1500 central government settlement accounts for incoming and outgoing payments in Norges Bank. Most government agencies currently participate in the consolidated account scheme, but there will continue to be some agencies that have been allowed to postpone participation in the scheme.

Norges Bank's services related to the central government's consolidated account scheme cover two main areas:

- 1) account maintenance, transfers to and from accounts held by registrars (banks)

Norges Bank's account structure consists of four levels. The lowest level comprises settlement accounts for transactions from registrars. All government receipts and payments go through working accounts at the registrars. Norges Bank maintains an overview of which working accounts are attached to which settlement accounts for the individual activities. The registrars are expected to empty the working accounts into the settlement accounts in Norges Bank daily.

- 2) supervision of the registrars

On behalf of the central government, Norges Bank shall supervise registrars' services to ensure that they comply with agreements concluded with the Ministry of Finance.

Banks' settlements in Norges Bank

In 1992, Norges Bank initiated a project to develop a new and better system for final settlement of payment transactions. The new system became operational in November 1997, and became a fully functional real-time gross settlement system in March 1999. The main objective of Norges Bank's settlement system – NBO – is to reduce the risk associated with payment settlement. The

development of NBO is discussed in previous year's reports and in Chapter 2.1 of this year's report.

Production and distribution of notes and coins

Norges Bank is responsible for issuing notes and coins, and for promoting an efficient payment system in Norway and efficient payment transactions with other countries. As part of this work, the Bank offers various services and products in the area of cash payment instruments.

Norges Bank is also responsible for the production, issuing, handling, processing and recycling of Norwegian notes and coins. Notes are produced in Norges Bank's Printing Works at the Oslo Head Office, while the Royal Norwegian Mint in Kongsberg is responsible for the production of coins. Both production units are part of Norges Bank. Norges Bank's 13 regional branches and the Cashier's Department perform other services.

The regional branches perform services for post offices and banks on the principle of full cost coverage. These services include night safe counts and settlement, packaging notes and coins for direct distribution to bank branches and post offices, settlement and replenishing ATM cassettes, coin sorting and settlement for coin-operated machines for Telenor, public transport, toll plazas and parking, among others.

Norges Bank's role in money handling provides the basis for developing systems that ensure cost-effective production, distribution and handling of notes and coins. Norges Bank has also contributed

to increasing the efficiency and security of banks' cash handling. Norges Bank's activities in the area of cash are characterised by strict requirements with respect to security, procedures, rules, instructions and routines. The demand for expertise and productivity in this field is increasing in step with the growing use of available technology in planning and in daily operations.

Chapter 2.2.4 discusses changes in the note and coin series in 1999, while Chapter 4.4 provides an overview of developments in notes and coins in circulation in recent years.

6.2 Liaison bodies

Payment System Liaison Committee

The committee was established in January 1986 after Norges Bank was given responsibility for promoting an efficient payment system under the new Norges Bank Act. There were no meetings in 1999.

Cash Card Forum

The objective of the Cash Card Forum is to help coordinate measures related to a future cash card system in Norway in order to promote efficiency, standardisation and security. The Forum was established in 1995 with members from the transport and communications sector and the two banking associations. The Forum is chaired by Norges Bank. There were no meetings in 1999.

ANNEX :

Act no. 0095 of 17 December 1999 relating to Payment Systems, etc. – authorisation requirement for interbank systems (Circular no. 5 of 17 April 2000)

1. Introduction

Act no. 95 of 17 December 1999 relating to Payment Systems, etc., entered into force on 14 April 2000. The Act introduces general authorisation requirements and supervision of interbank systems. The systems in operation at the time of the entry into force of the Act shall submit an application for authorisation by the end of 2000. The operations may continue until a decision is taken with regard to the application. The Act shall supplement and not replace the current self-regulation. Responsibility for the systems will continue to rest with the authorised operators, and approval shall not be interpreted to mean that the authorities are responsible for features relating to the systems' operation or the like. Chapter 4 of the Act relating to legal protection and collateral security provided in clearing and settlement contracts transposes Council Directive 98/26/EC of 19 May 1998 on settlement finality in payment and settlement systems into Norwegian law.

2. Authorisation requirement for interbank systems, etc.

The Act provides Norges Bank with authorisation and supervisory authority vis-à-vis the interbank systems in Norway. Interbank systems are defined as systems based on common rules for clearing, settlement or transfer of funds between credit institutions, c.f. §§ 1-1 and 1-3 of the Act. Norges Bank may make exemptions to the authorisation requirement for systems whose operations are limited to the extent that they are assumed to have no significant effect on financial stability, c.f. § 2-3 of the Act. Systems that are exempt from the authorisation requirement will not be subject to supervision according to the Act. Interbank systems must apply for exemption. In assessing the application for exemption, emphasis will be placed on the normal and potential risk level in the system, the number of participants, the turnover in the system, the system's link to other systems, and the system's effect on efficiency and public confidence in the Norwegian payment system.

According to § 2-7 of the Act, credit institutions have the right, as a main rule, to participate in interbank systems in accordance with the terms adopted. The systems shall provide information

indicating the actual participants in the system. An interbank system may comprise a clearing house, a settlement bank and participant banks. Systems that only engage in clearing or settlement are also considered interbank systems in the meaning of the Act, c.f. § 1-1. In assessing an application for authorisation of a system that only affects clearing operations, for instance, emphasis will be placed on the system having satisfactory agreements, procedures, etc., for the link to the settlement system. The Norges Bank's Settlement System (NBO) does not require authorisation but is covered by Chapter 4 of the Act, which sets out the provisions relating to legal protection and security afforded by clearing and settlement contracts, c.f. §§ 2-2 and 4-1 of the Act.

Chapter 4 applies to interbank systems with authorisation from Norges Bank, provided that it is agreed that Norwegian law shall apply to the system, and that the system comprises a minimum of three participants, c.f. §§ 4-1 and 4-3 of the Act. If the clearing and settlement contracts governing a system afford legal protection of netting, the system may undertake clearing and settlement operations even if public administration proceedings have been opened against one of the participants. This only applies to orders that have been entered into the system before the opening of insolvency or public administration proceedings. Clearing and settlement contracts must also stipulate the moment when an order is entered into the system and when the right to revoke a payment order no longer applies, c.f. § 4-2 of the Act.

Legal protection is also afforded under § 4-4 of the Act against invalidation claims with respect to collateral security furnished to the settlement bank, and §§ 4-3 and 4-4 provide for choice of national legislation to clarify which country's law shall apply to the system. These provisions are of particular importance for systems with participants that are branches of foreign credit institutions, and if collateral security has been furnished to the settlement bank. Interbank systems that are to benefit from legal protection for clearing and settlement contracts must be notified to the EFTA Surveillance Authority, c.f. § 4-5 of the Act. Norges Bank will communicate this information to the Authority when authorisation is granted.

3. Operator

Interbank systems shall have an operator that is responsible for ensuring that the establishment and operation of the system complies with the Act relating to Payment Systems. The operator may be the owner of the system, participant, association, non-stock institution or another company. The contract between the participants shall indicate the operator of the system, and the contract shall be

enclosed with the application for authorisation, c.f. §§ 2-4 and 2-5 of the Act.

Only the operator is party to the application for authorisation, and shall receive the rights afforded to parties under the Public Administration Act. The operator shall apply for authorisation on behalf of the system, and is responsible for ensuring compliance with the terms and obligations of the authorisation, c.f. §§ 2-4 and 2-9 of the Act. The operator shall also suspend participants from the system if continued participation is contrary to the purpose of the Act, c.f. § 2-8. The manager of the operator's activity, including board members, shall satisfy the necessary requirements for good conduct and experience, c.f. § 2-4 of the Act. If the operator commits gross or repeated violations of its obligations as stipulated in or pursuant to legislation, if there are other irregularities on the part of the operator or if other circumstances providing cause for concern that the system is not functioning according to the purpose of the Act, Norges Bank may revoke the authorisation, c.f. § 2-10 of the Act.

4. Content of the application for authorisation

The application shall indicate the conditions described in §§ 2-4, 2-5 and § 4-1 of the Act. Among other things, the contracts that regulate participants' rights and obligations shall be enclosed with the application. This applies in particular to clearing and settlement agreements. Norges Bank may request further information where necessary.

The object of the statutory regulation of interbank systems is to ensure that they are organised with a view to safeguarding financial stability. Particular emphasis is placed on minimising risks arising in connection with liquidity or solvency difficulties among participants in the system, c.f. § 2-1 of the Act.

The application for authorisation shall thus comprise information that provides a basis for assessing the risk associated with the system and the system's effect on financial stability. Furthermore, the procedure to ensure that participants are aware of the risk to which they are exposed shall be described. The application shall also indicate the risk-reducing measures implemented, including measures to minimise disruption caused by liquidity and insolvency difficulties. In this connection, the application shall indicate whether the system has rules for controlling participants' exposure and the procedures agreed to ensure that payment settlement can be effected if a participant is illiquid or insolvent. Furthermore, the application shall indicate whether the system has established a guarantee arrangement between participants and whether there are procedures for changing clearing results or for revoking transactions. Furthermore, the application shall indicate the owners and participants in the system, c.f. §§ 2-5 and 4-5 of the Act. The operator shall give prior notice to Norges Bank before making any significant changes to ownership, organisation and operations, etc., c.f. § 2-6 of the Act. Changes may be implemented if Norges Bank has not decided otherwise within 2 months after notification is received.

5. Guidance and appeals

Further guidance concerning the Act relating to Payment Systems and the formulation and content of applications for authorisation may be obtained from Norges Bank, Wing II, Financial Infrastructure and Payment Systems Department. Decisions adopted pursuant to the Act may be appealed to the Ministry of Finance according to ordinary administrative procedures and appeals rules laid down in the Public Administration Act.

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2.1.1 Average daily turnover in NBO Dec. 1997 - 1999. In billions of NOK ¹⁾

	1997	1998	1999a	1999b	1999c
Gross settlement	30.4	19.0	19.1	135.6	113.1
Net settlement - large value payments	18.6	18.3	24.9	5.7	9.4
Central Bank/goverment	6.9	11.7	9.7	11.5	11.1
Securities settlement	5.3	5.3	5.6	4.9	5.0
Net settlement - retail payments	5.1	4.8	5.0	5.8	5.7
Notes and coin	1.4	0.9	0.9	0.9	0.9
Total	67.6	59.9	65.2	164.4	145.2

Source: Norges Bank

1) For more information on NBO, see Chapter 2.1.2 of this year's report and the article "Norges Bank's new settlement system - NBO" in Norges Bank's Economic Bulletin no. 3/1997

1999a: 01 Jan 99 - 11 March 99

1999b: 12 March 99 - 31 Dec 99

1999c: 01 Jan 99 - 31 Dec 99

4.1.1 Number of transactions in main groups of payments 1988-99. In millions ¹⁾

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	413.7	433.4	444.2	462.8	485.8	491.3	548.0	590.2	646.8	714.0	787.8	845.2
Total excluding ATMs	371.3	381.5	384.0	396.7	415.7	416.7	467.7	502.8	549.2	610.1	680.8	737.9
Total giros ²⁾	268.7	279.0	282.4	287.0	295.7	282.2	313.5	324.5	335.2	343.9	360.0	365.8
Paper-based giro ³⁾	233.7	231.2	229.2	223.0	219.6	202.5	226.7	222.9	210.1	197.4	186.2	168.5
Electronic giro ⁴⁾	35.0	47.8	53.2	64.0	76.1	79.7	86.7	101.7	125.1	146.5	173.9	197.3
Total payment cards	72.8	94.1	111.8	129.6	152.0	177.5	208.2	243.3	294.5	357.2	418.4	473.0
Payment cards excluding ATMs	30.4	42.2	51.6	63.5	81.9	102.9	127.9	155.9	196.9	253.3	311.4	365.7
Payment cards - electronic use ⁵⁾	68.8	87.6	107.3	125.1	146.7	172.0	203.4	237.0	289.2	350.1	409.3	462.6
Of which ATMs	42.4	51.9	60.2	66.1	70.1	74.6	80.3	87.4	97.6	103.9	107.1	107.3
Payment cards - manual use ⁶⁾	4.0	6.5	4.5	4.5	5.3	5.5	4.8	6.3	5.4	7.1	9.2	10.4
Cheque	72.2	60.3	50.0	46.2	38.1	31.6	26.3	22.4	17.1	12.9	9.4	6.3

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) Figures up to and including 1994 contain double-counting of transfers between BBS and Postbanken and exclude giros recorded by others than BBS and Postbanken. From 1995 onwards double-counting has been eliminated, while giros registered elsewhere are included.

3) Payment services where the payer and/or payee sends/receives a form.

4) Notified or unnotified paperless (electronic) payment to the payee.

5) Use of electronic cards up to and including 1994 includes use of ATMs and the banks' and gas companies' payment terminals. Figures from 1995 onwards also include electronic use of cards in terminals other than those owned by the banks and oil companies.

6) Figures for manual use of cards up to 1993 are partly estimates by Norges Bank and uncertain.

4.1.2 Total amount in the payment system 1988-99. In billions of NOK ¹⁾

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	:	:	:	:	:	:	2,312.6	2,562.2	4,354.7	4,796.2	4,902.4	5,576.2
Total excluding ATMs	:	:	:	:	:	:	2,245.4	2,487.2	4,270.1	4,701.7	4,800.3	5,470.8
Total giros ²⁾	<i>1,074.2</i>	<i>1,074.4</i>	<i>1,176.2</i>	<i>1,808.9</i>	<i>1,789.5</i>	<i>1,543.3</i>	<i>1,859.4</i>	<i>2,074.8</i>	<i>3,921.5</i>	<i>4,358.8</i>	<i>4,464.6</i>	<i>5,147.0</i>
Paper-based giro ³⁾	<i>830.0</i>	<i>709.9</i>	<i>696.7</i>	<i>626.1</i>	<i>564.0</i>	<i>543.6</i>	<i>737.5</i>	<i>765.5</i>	<i>1,480.9</i>	<i>1,423.2</i>	<i>1,241.4</i>	<i>1,089.5</i>
Electronic giro ⁴⁾	<i>244.2</i>	<i>364.5</i>	<i>479.5</i>	<i>1,182.8</i>	<i>1,225.5</i>	<i>999.7</i>	<i>1,121.9</i>	<i>1,309.3</i>	<i>2,440.6</i>	<i>2,935.6</i>	<i>3,223.2</i>	<i>4,057.4</i>
Total payment cards	:	:	:	:	:	:	117.3	145.4	177.6	216.9	255.1	290.3
Payment cards excluding ATMs	:	:	:	:	:	:	50.1	70.4	93.1	122.4	153.0	184.9
Payment cards - electronic use ⁵⁾	33.0	44.0	57.0	67.8	78.6	91.8	110.2	137.4	169.1	207.4	243.5	277.5
Of which ATMs	27.7	36.2	45.9	51.6	56.2	60.2	67.2	74.9	84.6	94.5	102.1	105.5
Payment cards - manual use ⁶⁾	:	:	:	:	:	:	7.1	8.0	8.5	9.5	11.6	12.9
Cheques	:	:	501.5	474.2	415.8	317.2	335.8	342.0	255.5	220.5	182.7	138.9

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) There is great uncertainty attached to Postbanken's figures up to and including 1995, and figures for these years are therefore not included. Figures in italics do not include Postbanken's figures. Figures up to and including 1994 concern only giros recorded by BBS, while figures from 1995 onwards concern giros recorded by BBS, Postbanken (from 1996 onwards) and elsewhere.

3) Payment services where the payer and/or payee sends/receives a form.

4) Notified or unnotified paperless (electronic) payment to the payee.

5) Use of electronic cards up to and including 1994 includes use of ATMs and the banks' and oil companies' payment terminals. Figures from 1995 onwards also include electronic use of cards in terminals other than those owned by the banks and oil companies.

6) Figures for manual use of cards up to 1993 are partly estimates by Norges Bank and uncertain.

4.2.1 Giro services 1994-99. In millions of transactions ¹⁾

	1994	1995	1996	1997	1998	1999
Total giros	313.5	324.5	335.2	343.9	360.0	365.8
Total paper-based giros ²⁾	226.7	222.9	210.1	197.4	186.2	168.5
Mail giros ³⁾	88.6	96.9	101.1	104.3	106.9	107.0
Giros delivered at counter	116.0	106.5	91.5	78.8	65.6	52.2
Of which						
Cash payments ⁴⁾	72.0	62.5	46.3	37.1	28.1	22.9
Account debits ⁴⁾	25.0	25.0	27.1	27.4	24.5	29.2
Various giros registered in banks ⁵⁾	19.1	19.1	18.1	14.2	13.0	-
Payments with instructions using terminals ⁶⁾	22.1	19.5	17.5	14.3	13.7	9.4
Total electronic giros ⁷⁾	86.7	101.7	125.1	146.5	173.9	197.3
Total payments by telephone ⁸⁾	0.9	1.3	6.7	13.4	18.2	28.3
Total payments using terminals ⁶⁾	70.6	83.0	97.8	109.1	129.3	139.1
Of which:						
PC/Internet ⁹⁾	-	-	:	:	3.2	14.5
Direct debits ¹⁰⁾	15.3	17.4	20.6	24.0	26.3	29.9

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) Payment services where the payer and/or payee sends/receives a form.

3) Services offered by all banks except Postbanken (Brevgiro) and Postbanken (Konvoluttgiro) respectively.

4) Up to and including 1998: Paper-based giros delivered in banks and registered in the BBS or DnB (Postbanken). Figures for 1999 also cover other data centres.

5) Cash payments and account debits registered in data centres other than DnB (Postbanken) and BBS.

6) Use of DnB's (Postbanken's) remittance service DataGiro, BBS's remittance service Direkte Remittering, and various company terminal giros offered by banks. The figures from 1996 onwards also cover use of home banking services via the Internet (PC/Internet). The number of PC/Internet transactions is estimated to have been 0.3-0.5m in 1997.

7) Notified and unnotified paperless (electronic) payment to the payee. Because of new routines for compiling information on electronic giros, there is some uncertainty attached to developments from 1998-99.

8) Miscellaneous payments over the telephone. So far mobile telephones have only been used to an insignificant extent.

9) Home banking services via PC/Internet, including use of Nettbank etc.

10) Autogiro, agreement-based giro and direct withdrawals (DataGiro).

4.2.2 Giro services 1994-99. Total amount. In billions of NOK ¹⁾

	1994	1995	1996	1997	1998	1999
Total giros	1859.4	2074.8	3921.5	4358.8	4464.6	5147.0
Total paper-based giros ²⁾	737.5	765.5	1480.9	1423.2	1241.4	1089.5
Mail giros ³⁾	181.0	214.9	858.0	830.2	649.8	597.6
Giros delivered at counter	549.0	544.5	569.7	557.2	561.0	473.9
Of which						
Cash payments ⁴⁾	183.4	175.4	188.4	179.1	126.5	143.8
Account debits ⁴⁾	175.3	175.2	206.5	247.8	308.5	330.1
Various giros registered in banks ⁵⁾	190.3	194.0	174.8	130.3	126.0	-
Payments with instructions using terminals ⁶⁾	7.5	6.1	53.2	35.8	30.6	18.1
Total electronic giros ⁷⁾	1121.9	1309.3	2440.6	2935.6	3223.2	4057.4
Total payments by telephone ⁸⁾	1.5	2.1	11.3	22.8	31.0	55.6
Total payments using terminals ⁶⁾	1051.7	1233.6	2310.6	2779.2	3048.4	3838.4
Of which:						
PC/Internet ⁹⁾	-	-	:	:	7.3	39.7
Direct debits ¹⁰⁾	68.7	73.6	118.7	133.6	143.8	163.5

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) Payment services where the payer and/or payee sends/receives a form.

3) Services offered by all banks except Postbanken (Brevgiro) and Postbanken (Konvoluttgiro) respectively.

4) Up to and including 1998: Paper-based giros delivered in banks and registered in the BBS or DnB (Postbanken). Figures for 1999 also cover other data centres.

5) Cash payments and account debits registered in data centres other than DnB (Postbanken) and BBS.

6) Use of DnB's (Postbanken's) remittance service Data Giro, BBS's remittance service Direkte Remittering, and various company terminal giros offered by banks. The figures from 1996 onwards also cover use of home banking services via the Internet (PC/Internet). The number of PC/Internet transactions is estimated to have been 0.3-0.5m in 1997.

7) Notified and unnotified paperless (electronic) payment to the payee. Because of new routines for compiling information on electronic giro, there is some uncertainty attached to developments from 1998-99.

8) Miscellaneous payments over the telephone. So far mobile telephones have only been used to an insignificant extent.

9) Home banking services via PC/Internet, including use of Nettbank etc.

10) Autogiro, agreement-based giro and direct withdrawals (DataGiro).

4.3.1 Cheques 1984-99. In millions of transactions ¹⁾

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total use of cheques	101.0	86.0	70.0	76.0	72.2	60.3	50.0	46.2	38.1	31.6	26.3	22.4	17.1	12.9	9.4	6.3
Savings banks	:	:	:	:	34.7	29.6	27.2	24.9	20.0	16.3	13.7	12.8	9.8	7.4	5.6	3.9
Commercial banks ²⁾	:	:	:	:	37.5	30.7	22.8	21.3	18.1	15.3	12.6	9.6	7.3	5.5	3.8	2.4

Source: Norges Bank

1) Figures up to and including 1994 are uncertain.

2) Cheques drawn on customers in Postbanken are not included in the figures up to and including 1989. Postbanken has offered a cheque service since 1987. The share of cheques drawn on customers in Postbanken before 1990 was relatively low (less than 4% of the total number).

4.3.2 Cheques 1988-99. Total amount. In billions of NOK ¹⁾

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total use of cheques	:	:	501.5	474.2	415.8	317.2	335.8	342.0	255.5	220.5	182.7	138.9
Savings banks	140.0	114.0	109.0	103.9	81.5	90.3	110.5	159.4	103.9	87.8	72.6	65.9
Commercial banks ²⁾	:	:	392.5	370.3	334.3	226.9	225.3	182.6	151.6	132.7	110.1	73.1

Source: Norges Bank

1) Figures up to and including 1994 are uncertain.

2) Cheques drawn on customers in Postbanken are not included in the figures up to and including 1989. Postbanken has offered a cheque service since 1987. The share of cheques drawn on customers in Postbanken before 1990 was relatively low (less than 4 percent of the total number).

4.3.3 Payment and credit cards 1991-99. In millions of transactions ¹⁾

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total use of cards ²⁾	129.6	152.0	177.5	208.2	243.3	294.5	357.2	418.4	473.0
Total bank cards ³⁾	95.7	111.5	132.1	156.2	189.7	232.8	285.1	337.9	385.0
Cash withdrawals (ATMs)	:	:	:	:	85.9	95.2	100.9	103.1	102.3
Payment terminals (EFTPOS)	:	:	:	:	103.8	137.6	184.2	234.8	282.7
Total domestic credit cards ^{3) 4)}	0.6	0.6	0.7	0.8	1.1	1.2	1.4	1.7	1.9
Cash withdrawals ⁵⁾	:	:	:	:	0.6	0.8	0.9	1.0	1.1
Payment terminals	:	:	:	:	0.4	0.5	0.4	0.7	0.8
GE Kapital Finans AS	:	:	:	:	:	:	:	:	:
DnB Kort AS	:	:	:	:	:	:	:	:	:
Sparebanken NOR	:	:	:	:	:	:	:	:	:
Total international payment and credit cards ³⁾	10.1	12.6	14.7	17.7	19.9	25.2	32.5	40.4	48.5
Cash withdrawals ⁵⁾	:	:	:	2.4	2.9	3.9	5.4	6.9	9.2
Payment terminals	:	:	:	15.3	17.1	21.3	27.1	33.5	39.3
American Express ⁶⁾	1.1	1.2	1.3	1.6	1.4	1.6	2.0	2.2	2.4
Diners Club Norge AS	1.9	2.3	2.6	2.9	3.2	3.7	4.3	5.1	5.4
Europay Norge AS	2.2	2.8	3.6	4.5	5.4	7.1	9.3	11.4	13.3
VISA Norge AS	4.9	6.3	7.1	8.8	9.9	12.8	17.0	21.7	27.4
Use of international cards in Norway by non-residents	1.6	2.0	2.4	3.0	3.0	3.8	4.6	5.3	6.2
Use of international cards issued in Norway	8.5	10.6	12.3	14.7	16.9	21.4	27.9	35.0	42.3
Oil company cards ^{3) 7)}	24.8	29.3	32.5	36.6	35.6	39.2	42.8	43.8	43.8

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) Exclusive non-residents' use of international payment cards in Norway.

3) Figures include use of combined cards (eg combined bank/int. payment and credit cards). Use of combined cards is distributed among the various card groups (as use of bank card, int. payment card etc.) depending on which function of the card is used.

4) "Kjøpekort", "Reserve Konto", "Multikort", "X-tra Kapital", "Her & Nå", "Cresco Card", "Plusskort", "YS Card", "NAF Card", "Acceptcard" and "Smart Club" in Norway and abroad. Transaction volumes for the various companies are not reported as the card companies do not want them published with sales figures. The use of these cards abroad has so far been insignificant (less than 1% of total use).

5) Breakdown into cash withdrawals (ATMs) and purchase of goods for American Express is based on estimates from Norges Bank.

6) Cards previously wholly owned and issued by American Express A/S. Now issued by DnB Kort A/S, which acquired the card operation in 1999.

7) Use in Norway and abroad of cards (not cash cards) issued by Statoil, Hydro Texaco, Shell (acquired FINA on 4 March 1999), Esso and Conoco Jet. No. of transactions equals number of times the card is used. The share of transactions abroad was approximately 2% cent in 1999.

4.3.4 Payment and credit cards 1991-99. Total amount. In billions of NOK ¹⁾

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total use of cards ²⁾	-	-	-	117.3	145.4	177.6	216.9	255.1	290.3
Total bank cards ³⁾	:	:	:	92.1	116.0	141.5	173.3	204.4	232.3
Cash withdrawals	:	:	:	:	73.1	81.5	90.5	97.2	99.2
Payment terminals (EFTPOS)	:	:	:	:	42.9	60.0	82.8	107.2	133.1
Total domestic credit cards ^{3) 4)}	1.4	2.1	2.3	2.5	3.2	3.8	4.2	4.5	5.1
Cash withdrawals ⁵⁾	:	:	:	1.1	1.4	1.7	2.3	1.5	1.6
Payment terminals	:	:	:	1.4	1.8	2.1	1.9	3.1	3.5
GE Kapital Finans AS	:	:	:	0.8	1.1	1.4	1.5	1.7	1.9
DnB Kort AS	:	:	:	0.2	0.3	0.3	0.4	0.4	0.4
Sparebanken NOR	:	:	:	1.5	1.9	2.1	2.2	2.4	2.8
Total international payment and credit cards ³⁾	10.2	12.8	14.8	17.1	19.1	24.3	30.9	38.1	45.3
Cash withdrawals ⁵⁾	:	:	:	3.4	4.1	5.9	8.3	10.7	13.6
Payment terminals	:	:	:	13.7	15.1	18.3	22.6	27.4	31.7
American Express ⁶⁾	1.5	1.6	1.8	1.7	1.9	2.6	3.1	3.5	4.3
Diners Club Norge AS	2.5	2.7	3.0	3.4	3.7	4.1	4.8	5.6	6.0
Europay Norge AS	2.2	2.7	3.5	4.4	5.2	7.1	9.6	12.1	14.0
VISA Norge AS	4.0	5.8	6.5	7.6	8.3	10.5	13.4	16.9	21.0
Use of international cards in Norway by non-residents	1.4	1.8	2.1	2.5	2.5	3.2	3.8	4.4	5.5
Use of international cards issued in Norway	8.8	11.0	12.8	14.6	16.6	21.1	27.1	33.7	39.8
Oil company cards ^{3) 7)}	5.1	5.8	6.7	8.2	9.6	11.3	12.3	12.6	13.1

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) Exclusive non-residents' use of international payment cards in Norway.

3) Figures include use of combined cards (eg combined bank/int. payment and credit cards). Use of combined cards is distributed among the various card groups (as use of bank card, int. payment card etc.) depending on which card function is used.

4) "Kjøpekort", "Reserve Konto", "Multikort", "X-tra Kapital", "Her & Nå", "Cresco Card", "Plusskort", "YS Card", "NAF Card", "Acceptcard" and "Smart Club" in Norway and abroad. Volume figures for the different companies is not reported because the credit card companies do not want to publish these together with the value figures. Use of these cards abroad has so far been insignificant (less than 1% of total turnover).

5) Breakdown into cash withdrawals (ATMs) and purchase of goods for American Express is based on estimates from Norges Bank.

6) Cards previously fully owned and issued by American Express A/S. Is currently being issued by DnB Kort A/S, which bought it in 1999.

7) Use in Norway and abroad of cards (not cash cards) issued by Statoil, Hydro Texaco, Shell (acquired FINA on 4 March 1999), Esso and Conoco Jet. No. of transactions equals number of times the card is used. The share of transactions abroad was approximately 4% in the period 1997-1999.

4.3.5 Number of payment cards issued by banks, card companies and oil companies 1991-99. In thousands ¹⁾

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	3924	4239	4615	5133	6397	7358	8296	9299	10039
Bank cards	1970	2121	2082	1999	2561	2835	3227	3561	3734
International payment and credit cards ²⁾	836	938	1196	1649	1984	2343	2842	3346	3985
Domestic credit cards ³⁾	342	375	389	452	480	589	514	620	687
Oil company cards ⁴⁾	777	806	948	1033	1372	1592	1713	1772	1633
Combined cards	:	:	:	1092	1614	1900	2309	2782	3217
Number of cards less double counting of combined	:	:	:	4041	4783	5459	5987	6517	6822

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports. A review of cards has resulted in reclassification of some cards. Information on domestic bank cards up to and including 1997 is lacking for 8% of commercial banks, measured by these banks' shares of sight deposits. The share of domestic bank cards not included in the figures up to and including 1997 is probably lower. In 1998 and 1999 the share of banks without information was negligible (less than 1%).

2) Cards issued by or in cooperation with VISA Norge A/S, Europay Norge A/S, Diners Club Norge A/S and DnB Kort A/S (American Express).

3) Cards which provide credit up to a certain limit and which are issued by or in cooperation with GE Capital Bank, DnB Kort A/S and Sparebanken NOR. These cards are: "Kjøpekort", "Reserve Konto", "Multikort", "X-tra Kapital", "Her & Nå", "Cresco Card", "Plusskort", "YS Card", "NAF Card", "Acceptcard" and "Smart Club".

4) Cards issued by Statoil, Hydro Texaco, Shell (acquired FINA on 4 March 1999), Esso and Conoco Jet.

4.3.6 Number of payment terminals and number of locations with payment terminals 1991-99

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total payment terminals	:	:	:	29,321	34,706	39,033	46,592	52,235	58,734
Owned by banks	11,528	14,595	21,727	23,668	28,897	33,679	41,299	46,849	51,618
Owned by oil companies ¹⁾	:	:	:	5,653	5,809	5,354	5,293	5,386	7,116
Locations with payment terminals ²⁾	:	:	:	19,996	23,239	27,048	32,761	38,029	42,164
Locations with bank payment terminals	:	:	:	17,827	21,081	24,841	30,607	35,861	39,978
Locations with oil company terminals	2,028	2,137	2,136	2,169	2,158	2,207	2,154	2,168	2,186

Source: Norges Bank

1) Figures up to and including 1998 do not include terminals owned by FINA (acquired by Shell on 4 March 1999) while figures for 1999 include these terminals.

2) Shops, post offices, petrol stations, etc.

4.3.7 Bank and oil company payment terminals (EFTPOS) 1991-99. In millions of transactions ¹⁾

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total ²⁾	58.9	76.6	97.4	123.1	143.4	182.5	234.7	288.6	338.8
Bank cards	:	:	:	:	103.8	137.6	184.2	234.8	282.7
International payment and credit cards ³⁾	:	:	:	:	3.7	5.3	7.0	9.0	11.0
Domestic credit cards ⁴⁾	:	:	:	:	0.2	0.4	0.7	1.0	1.3
Oil company cards ⁵⁾	24.8	29.3	32.5	36.6	35.6	39.3	42.8	43.8	43.8
Total bank payment terminals	22.1	36.0	51.8	72.3	90.2	120.6	162.7	210.7	254.7
Bank cards	:	:	:	:	86.6	116.5	156.8	202.9	244.9
International payment and credit cards ³⁾	:	:	:	:	3.4	3.8	5.2	6.8	8.5
Domestic credit cards ⁴⁾	:	:	:	:	0.2	0.4	0.7	1.0	1.3
Total oil company terminals	36.8	40.6	45.6	50.8	53.2	61.9	72.0	77.9	84.1
Bank cards	12.0	11.3	13.1	14.2	17.2	21.1	27.4	31.9	37.8
International payment and credit cards ³⁾	:	:	:	:	0.4	1.5	1.8	2.2	2.5
Domestic credit cards ⁴⁾	-	-	-	-	-	-	-	-	-
Oil company cards ⁵⁾	24.8	29.3	32.5	36.6	35.6	39.3	42.8	43.8	43.8

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) Figures include use of combined cards (eg combined bank/int. payment and credit cards). Use of combined cards is distributed among the various card groups (as use of bank card, int. payment card etc.) depending on which card function is used.

3) Cards issued by or in cooperation with DnB Kort A/S (American Express), Diners Club A/S, Europay Norge A/S and Visa Norge A/S, and other cards owned by foreigners.

4) Cards issued by or in cooperation with GE Capital Bank, DnB Kort A/S and Sparebanken NOR which provide credit up to a certain amount. These cards are: Kjøpekort", "Reserve Konto", "Multikort", "X-tra Kapital", "Her & Nå", "Cresco Card", "Plusskort", "YS Card", "NAF Card", "Acceptcard" and "Smart Club".

5) Cards issued by Statoil, Hydro Texaco, Shell (acquired FINA on 4 March 1999), Esso and Conoco Jet. Transaction volume equals number of times the card is used.

4.3.8 Bank and oil company payment terminals (EFTPOS) 1991-99. Total amount in billions of NOK ¹⁾

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total ²⁾	16.1	22.4	31.7	43.0	55.9	75.4	100.8	127.1	155.0
Bank cards	:	:	:	:	42.9	60.0	82.8	107.2	133.1
International payment and credit cards ³⁾	:	:	:	:	3.0	3.7	5.0	6.5	7.9
Domestic credit cards ⁴⁾	:	:	:	:	0.4	0.5	0.8	0.8	0.9
Oil company cards ⁵⁾	5.1	5.8	6.7	8.2	9.6	11.3	12.3	12.6	13.1
Total bank payment terminals	8.4	14.1	21.8	33.2	41.8	58.6	81.0	105.5	129.9
Bank cards	:	:	:	:	38.5	54.6	75.4	98.6	121.5
International payment and credit cards ³⁾	:	:	:	:	2.9	3.4	4.7	6.1	7.5
Domestic credit cards ⁴⁾	:	:	:	:	0.4	0.5	0.8	0.8	0.9
Total oil company terminals	7.7	8.2	9.8	9.8	14.0	16.9	19.9	21.5	25.2
Bank cards	2.6	2.5	3.1	1.6	4.3	5.4	7.3	8.6	11.7
International payment and credit cards ³⁾	:	:	:	:	0.1	0.2	0.3	0.3	0.4
Domestic credit cards ⁴⁾	-	-	-	-					
Oil company cards ⁵⁾	5.1	5.8	6.7	8.2	9.6	11.3	12.3	12.6	13.1

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) Figures include use of combined cards (eg combined bank/int. payment and credit cards). Use of combined cards is distributed among the various card groups (as use of bank card, int. payment card etc.) depending on which card function is used.

3) Cards issued by or in cooperation with DnB Kort A/S (American Express), Diners Club A/S, Europay Norge A/S and Visa Norge A/S, and other cards owned by foreigners.

4) Cards issued by or in cooperation with GE Capital Bank, DnB Kort A/S and Sparebanken NOR which provide credit up to a certain amount. These cards are: Kjøpekort", "Reserve Konto", "Multikort", "X-tra Kapital", "Her & Nå", "Cresco Card", "Plusskort", "YS Card", "NAF Card", "Acceptcard" and "Smart Club".

5) Cards issued by Statoil, Hydro Texaco, Shell (acquired FINA on 4 March 1999), Esso and Conoco Jet.

4.3.9 Cash withdrawals from ATMs 1991-99. In millions of transactions ¹⁾

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total ²⁾	66.1	70.1	74.6	80.3	87.4	97.6	103.9	107.1	107.3
Bank cards	:	:	:	:	85.9	95.2	100.9	103.1	102.3
International payment and credit cards ³⁾	:	:	:	:	1.2	1.9	2.4	3.2	4.2
Domestic credit cards ⁴⁾	:	:	:	:	0.3	0.5	0.6	0.7	0.8
Withdrawals from own banks' ATMs ⁵⁾	:	:	:	:	:	:	50.4	51.0	51.0
Withdrawals from other banks' ATMs ⁵⁾	:	:	:	:	:	:	50.5	52.1	51.3
Total commercial banks	27.1	28.8	30.7	33.1	36.6	41.5	44.1	46.3	45.7
Bank cards	:	:	:	:	35.4	39.7	41.9	43.6	42.5
International payment and credit cards ³⁾	:	:	:	:	0.9	1.3	1.6	2.0	2.4
Domestic credit cards ⁴⁾	:	:	:	:	0.3	0.5	0.6	0.7	0.8
Total savings banks	39.0	41.3	43.9	47.2	50.8	56.1	59.8	60.8	61.6
Bank cards	:	:	:	:	50.6	55.5	59.0	59.6	59.8
International payment and credit cards ³⁾	:	:	:	:	0.3	0.6	0.8	1.2	1.8
Domestic credit cards ⁴⁾	-	-	-	-	-	-	-	-	-

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) Figures include use of combined cards (eg combined bank/int. payment and credit cards). Use of combined cards is distributed among the various card groups (as use of bank card, int. payment card etc.) depending on which part of the card is used.

3) Cards issued by or in cooperation with DnB Kort A/S (American Express), Diners Club A/S, Europay Norge A/S and Visa Norge A/S, and other cards owned by foreigners.

4) Cards issued by or in cooperation with GE Capital Bank, DnB Kort A/S and Sparebanken NOR which provide credit up to a certain amount. These cards are: Kjøpekort", "Reserve Konto", "Multikort", "X-tra Kapital", "Her & Nå", "Cresco Card", "Plusskort", "YS Card", "NAF Card", "Acceptcard" and "Smart Club".

5) The distribution of own and other savings banks' ATMs is based on estimates from Norges Bank and is uncertain.

4.3.10 Cash withdrawals from ATMs 1991-99. Total amount in billions of NOK ¹⁾

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total ²⁾	51.6	56.2	60.2	67.2	74.9	84.6	94.5	102.1	105.5
Bank cards	:	:	:	:	73.1	81.5	90.5	97.2	99.2
International payment and credit cards ³⁾	:	:	:	:	1.5	2.4	3.2	:	:
Domestic credit cards ⁴⁾	:	:	:	:	0.4	0.6	0.7	:	:
Withdrawals from own banks' ATMs ⁵⁾	:	:	:	:	:	:	44.5	49.9	51.1
Withdrawals from other banks' ATMs ⁵⁾	:	:	:	:	:	:	46.0	47.6	48.1
Total commercial banks	21.7	24.9	25.8	28.7	31.8	37.1	41.4	45.7	47.0
Bank cards	:	:	:	:	30.3	34.9	38.5	42.2	42.9
International payment and credit cards ³⁾	:	:	:	:	1.1	1.7	2.2	2.6	3.1
Domestic credit cards ⁴⁾	:	:	:	:	0.4	0.6	0.7	0.9	1.0
Total savings banks	29.9	31.3	34.4	38.5	43.1	47.4	53.1	56.4	58.5
Bank cards	:	:	:	:	42.8	46.7	52.0	54.9	56.3
International payment and credit cards ³⁾	:	:	:	:	0.3	0.8	1.0	1.5	2.2
Domestic credit cards ⁴⁾	-	-	-	-	-	-	-	-	-

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) Figures include use of combined cards (eg combined bank/int. payment and credit cards). Use of combined cards is distributed among the various card groups (as use of bank card, int. payment card etc.) depending on which card function is used.

3) Cards issued by or in cooperation with DnB Kort A/S (American Express), Diners Club A/S, Europay Norge A/S and Visa Norge A/S, and other cards owned by foreigners.

4) Cards issued by or in cooperation with GE Capital Bank, DnB Kort A/S and Sparebanken NOR which provide credit up to a certain amount. These cards are: Kjøpekort", "Reserve Konto", "Multikort", "X-tra Kapital", "Her & Nå", "Cresco Card", "Plusskort", "YS Card", "NAF Card", "Acceptcard" and "Smart Club".

5) The distribution on own and other savings banks' ATMs is based on estimates from Norges Bank and is uncertain.

4.3.11 Number of ATMs 1984-99

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total ¹⁾	385	469	802	1280	1645	1742	1775	1794	1735	1707	1741	1792	1861	1896	1944	2007
Commercial banks ¹⁾	:	:	:	:	805	820	822	836	737	738	750	775	796	808	867	900
Savings banks	:	:	:	:	840	922	953	958	998	969	991	1017	1065	1088	1077	1107

Source: Norges Bank

1) Figures up to and including 1989 do not include Postbankens ATMs. The share of ATMs owned by Postbanken before 1990 was small (less than 2% of the total number in 1990).

4.3.12 Cash withdrawals at counter in commercial banks 1996-99. In millions of transactions ¹⁾

	1996	1997	1998	1999
Total	28.7	24.7	21.9	18.8

Source: Norges Bank

1) The banks represent just under 90% of the commercial bank sector, measured by the banks' share of sight deposits.

4.3.13 Cash withdrawals at counter in commercial banks 1996-99. Total amount in billions of NOK ¹⁾

	1996	1997	1998	1999
Total	212.0	174.0	148.0	133.6

Source: Norges Bank

1) The banks represent just under 90% of the commercial bank sector, measured by the banks' share of sight deposits. A good 45% of the withdrawals in 1999 are estimates from Norges Bank, and uncertain.

4.4.1 Cash in circulation 1991-99. Annual average value in millions of NOK

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	30,649.6	32,028.8	33,407.2	36,952.5	38,359.1	39,588.4	41,220.8	43,577.5	43,837.2
Notes	28,608.5	29,918.6	31,263.5	34,675.9	35,851.1	36,812.2	38,283.4	40,487.3	40,566.2
Coins	2,041.1	2,110.2	2,143.7	2,276.6	2,508.0	2,776.2	2,937.4	3,090.2	3,271.0

Source: Norges Bank

4.4.2 Denominations of notes in circulation 1991-99. Annual average value in millions of NOK

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	28,608.5	29,918.6	31,263.5	34,675.9	35,851.1	36,812.2	38,283.4	40,487.3	40,566.2
1000-kr	19,571.1	20,864.3	22,009.8	24,832.6	25,522.1	25,985.4	26,711.4	27,772.9	27,290.5
500-kr	828.1	1,282.4	1,889.5	2,548.3	2,991.7	3,465.2	4,068.0	4,875.1	5,588.1
200-kr				105.5	1,025.1	1,771.2	2,629.7	3,649.5	3,949.2
100-kr	7,641.5	7,193.0	6,777.5	6,585.8	5,727.5	4,961.6	4,245.8	3,473.3	3,026.7
50-kr	567.8	578.9	586.7	603.7	584.7	628.8	628.6	716.6	711.9

Source: Norges Bank

4.4.3 Denominations of notes in circulation 1991-99. Annual average as a percentage of value

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	100.0								
1000-kr	68.4	69.7	70.4	71.6	71.2	70.6	69.8	68.6	67.3
500-kr	2.9	4.3	6.0	7.3	8.3	9.4	10.6	12.0	13.8
200-kr	0.0	0.0	0.0	0.3	2.9	4.8	6.9	9.0	9.7
100-kr	26.7	24.0	21.7	19.0	16.0	13.5	11.1	8.6	7.5
50-kr	2.0	1.9	1.9	1.7	1.6	1.7	1.6	1.8	1.8

Source: Norges Bank

4.4.4 Rate of note circulation 1991-99 ¹⁾

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	4.47	4.77	4.87	4.84	4.93	4.90	5.17	4.71	5.28
1000-kr	1.44	1.50	1.43	1.32	1.35	1.33	1.24	1.25	1.30
500-kr	4.36	6.35	7.74	8.01	8.63	8.66	8.74	8.38	8.73
200-kr				5.35	9.09	10.71	11.02	10.78	10.85
100-kr	5.62	6.11	6.32	6.43	6.33	5.93	5.68	4.37	4.88
50-kr	1.96	1.97	1.98	2.06	2.13	2.04	2.19	1.99	2.09

Source: Norges Bank

1) Average number of times per year that notes pass through Norges Bank.

4.4.5 Inflow of notes 1991-99. In millions of notes¹⁾

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	487.2	509.5	512.2	524.2	519.8	509.2	517.5	494.3	524.9
1000-kr	28.2	31.3	31.5	32.7	34.2	34.7	33.0	34.7	35.6
500-kr	7.4	16.3	29.2	40.8	51.6	60.0	71.1	82.1	97.6
200-kr				2.8	46.5	94.8	144.8	197.3	214.3
100-kr	429.3	439.1	428.3	423.0	362.6	294.1	241.0	151.8	147.6
50-kr	22.1	22.8	23.2	24.9	24.9	25.6	27.6	28.5	29.8

Source: Norges Bank

1) No. of notes delivered to Norges Bank for sorting and verification.

4.4.6 Cancelled notes 1991-99. Value in millions of NOK

	1991	1992	1993	1994	1995	1996	1997	1998 ¹⁾	1999 ¹⁾
Total	16,720.8	7,456.7	6,668.8	8,386.8	8,919.7	9,219.2	13,886.0	7,631.2	3,754.4
1000-kr	9,181.1	1,967.7	2,079.4	2,374.5	2,407.6	2,439.4	2,500.0	985.3	693.5
500-kr	1,259.3	318.1	627.0	1,160.0	1,761.8	1,616.2	2,200.0	1,902.1	1,003.2
200-kr				1.5	186.9	573.3	1,160.0	1,437.3	828.4
100-kr	5,332.3	4,515.4	3,411.0	4,230.6	3,923.0	3,238.5	6,770.0	2,682.2	666.3
50-kr	945.3	653.1	549.9	619.1	639.2	1,350.9	1,255.0	623.4	559.9
10-kr	2.8	2.4	1.5	1.1	1.2	0.9	1.0	0.9	3.1

Source: Norges Bank

1) The figures for 1998 and 1999 reflect the decision to reduce shredding, in order to increase stocks of notes at the turn of the century.

4.4.7 Average life of notes 1991-99. Number of years

	1991	1992	1993	1994	1995	1996	1997	1998	1999
1000-kr	2.1	10.6	10.6	10.5	10.6	10.6	10.7	28.2	39.4
500-kr	0.7	4.0	3.0	2.2	1.7	2.1	1.8	2.6	5.6
200-kr					5.5	3.1	2.3	2.5	4.8
100-kr	1.4	1.6	2.0	1.6	1.5	1.5	0.6	1.3	4.5
50-kr	0.6	0.9	1.1	1.0	0.9	0.5	0.5	1.1	1.3

Source: Norges Bank

4.4.8 Denominations of coins in circulation 1991-99. Annual average value in millions of NOK

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	2,041.1	2,110.2	2,143.7	2,276.6	2,508.0	2,776.2	2,937.4	3,090.3	3,271.0
20-kr				34.2	368.6	531.8	655.1	778.7	873.4
10-kr	912.1	956.1	995.0	1,067.2	951.6	1,019.5	1,009.5	1,029.5	1,046.3
5-kr	365.2	370.5	374.9	387.5	387.8	400.8	415.2	440.3	473.9
1-kr	421.7	434.0	440.2	460.2	471.9	492.0	518.4	561.0	590.2
50-øre	113.8	116.5	119.0	124.3	128.1	133.8	142.1	150.3	157.2
25-øre ¹⁾	41.4	41.1	40.9	40.6	40.4	40.3	40.3	:	:
10-øre	161.1	166.3	148.0	136.9	134.0	132.4	131.2	130.5	130.0
Copper ¹⁾	25.8	25.7	25.7	25.7	25.6	25.6	25.6	:	:

Source: Norges Bank

1) 25-øre and copper coins ceased to be redeemable in 1998.

4.4.9 Denominations of coins in circulation 1991-99. Annual average as a percentage of value

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	100.0								
20-kr				1.5	14.7	19.2	22.3	25.2	26.7
10-kr	44.7	45.3	46.4	46.9	37.9	36.7	34.4	33.3	32.0
5-kr	17.9	17.6	17.5	17.0	15.5	14.4	14.1	14.2	14.5
1-kr	20.7	20.6	20.5	20.2	18.8	17.7	17.6	18.2	18.0
50-øre	5.6	5.5	5.6	5.5	5.1	4.8	4.8	4.9	4.8
25-øre 1)	2.0	1.9	1.9	1.8	1.6	1.5	1.4	:	:
10-øre	7.9	7.9	6.9	6.0	5.3	4.8	4.5	4.2	4.0
Copper 1)	1.3	1.2	1.2	1.1	1.0	0.9	0.9	:	:

Source: Norges Bank

1) 25-øre and copper coins ceased to be redeemable in 1998.

4.4.10 Rate of coin circulation 1993-99 1)

	1993	1994	1995	1996	1997	1998	1999
Total	0.68	0.69	0.76	0.78	0.82	0.81	0.72
20-kr		1.27	1.92	1.96	1.97	2.12	1.99
10-kr		1.60	1.63	1.59	1.54	1.60	1.54
5-kr		0.79	0.87	1.01	1.05	1.08	1.02
1-kr		0.72	0.72	0.80	0.80	0.85	0.71
50-øre		0.20	0.19	0.22	0.28	0.28	0.21

Source: Norges Bank

1) Average number of times per year that coins pass through Norges Bank.

4.4.11 Inflow of coins 1993-99. In millions of coins 1)

	1993	1994	1995	1996	1997	1998	1999
Total	580.5	616.9	698.7	759.9	838.1	886.8	831.6
20-kr		2.2	35.3	52.1	64.7	82.7	86.9
10-kr	158.8	173.2	151.2	156.7	162.0	169.2	161.6
5-kr	58.9	66.8	77.9	84.1	89.7	85.4	96.4
1-kr	316.5	327.3	377.9	391.2	443.1	474.7	422.0
50-øre	46.3	47.4	56.4	75.8	78.6	74.8	64.7

Source: Norges Bank

1) Number of coins delivered to Norges Bank for sorting.

4.5.1 Norwegians' use of cards abroad 1988-99. In thousands of transactions ¹⁾

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	:	:	:	:	:	:	:	8,106	10,121	13,263	16,725	19,902
Petrol cards ²⁾	:	:	:	:	:	:	:	572	548	733	924	917
Domestic credit cards ³⁾	-	-	-	-	-	-	-	0	0	1	1	2
International credit cards ⁴⁾	3,053	3,304	3,993	3,527	4,809	5,283	6,560	7,436	9,439	12,355	15,569	18,656
Visa Norge AS	1,800	2,006	2,423	1,956	3,024	3,340	4,105	4,782	6,168	8,042	10326	12805
Europay Norge AS	448	443	640	679	825	959	1,176	1,465	1,936	2,747	3500	3983
Diners Club Norge AS	305	355	430	467	560	584	629	669	725	816	899	900
American Express ⁵⁾	500	500	500	425	400	400	650	520	610	750	844	968
Payments via Eufiserv ⁶⁾	-	-	-	:	:	:	:	98	134	174	230	328

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) Use of Norwegian petrol cards in the oil companies' own systems.

3) Multi-use cards, which could be used in ATMs abroad via the Cirrus network at the end of 1995.

4) Use of international payment cards recorded by card issuers.

5) Cards previously wholly owned and issued by American Express A/S. The cards are now issued by DnB Kort A/S, which acquired the card operation in 1999.

6) Use of cards, including international payment cards, recorded via Eufiserv.

4.5.2 Norwegians' use of cards abroad 1988-99. Total amount. In millions of NOK ¹⁾

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	:	:	:	:	:	:	:	7624	9589	12837	16372	20040
Petrol cards ²⁾	:	:	:	:	:	:	:	370	320	501	526	556
Domestic credit cards ³⁾	0	0	1	1	2
International payment cards ⁴⁾	3401	3635	4245	3412	4959	5474	6366	7254	9269	12335	15845	19482
Visa Norge AS	2010	2177	2545	1583	3000	3306	3931	4473	5824	7788	10182	12653
Europay Norge AS	480	498	620	664	809	957	1174	1436	1958	2794	3725	4301
Diners Club Norge AS	311	360	480	565	600	611	661	708	769	892	1033	1038
American Express ⁵⁾	600	600	600	600	550	600	600	637	718	861	905	1490
Payments via Eufiserv ⁶⁾	-	-	-	:	:	:	:	:	:	:	:	:

Source: Norges Bank

1) Totals do not include payments via Eufiserv.

2) Use of norwegian petrol cards in the oil companies' own system.

3) Multi-use cards, which could be used in ATMs abroad via the Cirrus-network at the end of 1995.

4) Use of international payment cards recorded by card issuers.

5) Cards previously wholly owned and issued by American Express A/S. The cards are now issued by DnB Kort A/S, which acquired the card operation in 1999.

6) Use of cards, including international payment cards, recorded via Eufiserv.

4.5.3 Non-residents' use of cards in Norway 1988-99. In thousands of transactions ¹⁾

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	:	:	:	:	:	:	:	3421	4234	5109	5891	6955
Petrol cards ²⁾	:	:	:	:	:	:	:	348	324	359	273	293
International payment cards ³⁾	1028	1226	1536	1571	2019	2398	3043	2996	3812	4599	5326	6232
Visa Norge AS	359	475	670	678	938	1120	1440	1501	1872	2359	2798	3262
Europay Norge AS	325	361	459	501	636	837	1050	1130	1508	1730	1983	2096
Diners Club Norge AS	144	90	107	92	130	141	153	156	186	231	256	269
American Express ⁴⁾	200	300	300	300	315	300	400	209	246	279	289	605
Payments via Eufiserv ⁵⁾	-	-	-	:	:	:	:	77	98	151	293	429

Source: Norges Bank

1) Some figures have been revised in relation to those in previous reports.

2) Use of foreign petrol cards in the oil companies' own system.

3) Use of international payment cards recorded by card issuers.

4) Cards previously wholly owned and issued by American Express A/S. The cards are now issued by DnB Kort A/S, which acquired the card operation in 1999.

5) Use of cards, including international payment cards, recorded via Eufiserv.

4.5.4 Non-residents' use of cards in Norway 1988-99. Total amount. In millions of NOK ¹⁾

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total	:	:	:	:	:	:	:	2,655	3,288	3,916	4,654	5,782
Petrol cards ²⁾	:	:	:	:	:	:	:	112	94	143	206	286
International payment cards ³⁾	1153	1236	1401	1435	1792	2059	2496	2543	3194	3773	4448	5496
Visa Norge AS	300	398	501	469	750	896	1122	1141	1390	1703	2086	2442
Europay Norge AS	298	344	400	456	522	646	803	860	1196	1387	1615	1694
Diners Club Norge AS	155	94	100	110	120	117	121	122	141	170	187	201
American Express	400	400	400	400	400	400	450	420	467	513	560	1159
Payments via Eufiserv ⁴⁾	-	-	-	:	:	:	:	:	:	:	:	:

Source: Norges Bank

1) Totals do not include payments via Eufiserv.

2) Use of foreign petrol cards in the oil companies' own system.

3) Use of international payment cards recorded by card issuers.

4) Use of cards, including international payment cards, recorded via Eufiserv.

4.5.5 Foreign currency cheque, foreign currency giro and MoneyGram transfers from Norway to abroad 1994-99. In thousands of transactions

	1994	1995	1996	1997	1998	1999
Foreign currency cheques ¹⁾	272	210	271	198	136	135
Total giros	905	891	845	778	547	435
Foreign currency giro ²⁾	-	48	113	130	1	0
Eurogiro ³⁾	905	843	732	648	546	435
Of which						
Giro (account-to-account transfers)	541	488	419	341	287	194
Incoming and outgoing payments	364	355	313	307	259	242
MoneyGram ³⁾					4	9

Source: Norges Bank

1) Postal and foreign currency cheques in 12 banks, corresponding to 73 per cent of the banking sector measured by banks' share of sight deposits as at 31.12.1999. The share of foreign currency cheques is probably larger than the banks' share of sight deposits.

2) Introduced by the BBS in 1995. Cross-border payments were effected by means of SWIFT. The service was discontinued in 1998.

3) Offered by DnB (Postbanken). MoneyGram was introduced by Postbanken in autumn 1997. The number of cross-border transfers from or to Norway in 1997 was insignificant.

4.5.6 Eurogiro and MoneyGram transfers from abroad to Norway 1994-99. In thousands of transactions

	1994	1995	1996	1997	1998	1999
Eurogiro	303	283	233	206	191	179
Giro (account-to-account transfers)	178	174	180	136	115	102
Incoming and outgoing payments	125	109	53	70	76	77
MoneyGram					0	1

Source: Norges Bank

1) Offered by DnB (Postbanken). MoneyGram was introduced by Postbanken in autumn 1997. The number of cross-border transfers from or to Norway in 1997 was insignificant.

5.1.1 Prices in NOK for payment transactions 1990-99. Averages for all banks ¹⁾

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Paper-based services											
Mail giro ²⁾	:	:	:	2.14	2.48	2.88	3.76	3.88	4.04	4.25	4.84
Giro, collection box	2.37	2.69	2.81	5.43	5.99	5.69	6.31	10.47	10.37	11.12	8.84
Giro, account debits	6.15	6.31	6.82	9.30	9.74	9.98	10.14	12.73	13.30	15.28	16.40
Giro, cash payment	6.63	7.70	7.79	8.82	9.20	11.00	16.51	17.95	18.46	23.40	25.67
Personal cheques	4.27	5.57	6.17	7.73	8.24	8.40	8.50	9.79	10.72	12.30	14.92
Business cheques	4.34	5.15	6.66	8.37	8.19	9.23	9.28	9.82	10.46	12.44	15.01
Remittance with payment instructions	4.45	6.29	6.96	8.91	9.55	10.77	13.57	22.52	23.12	25.72	27.79
Company terminal giro with instructions	:	:	:	:	:	:	13.57	22.35	23.41	25.01	26.05
Optical character recognition (OCR) - File ³⁾	:	:	:	:	:	:	0.80	0.82	0.80	0.79	0.92
Optical character recognition (OCR) - Return ⁴⁾	:	:	:	:	:	:	2.15	2.38	2.40	2.12	3.38
Electronic services											
Telegiro	:	:	:	:	:	:	2.02	2.45	2.33	2.31	2.38
PC/Internet ⁵⁾	:	:	:	:	:	:	:	:	1.98	2.03	2.31
Unnotified remittance	0.61	0.40	0.77	0.89	0.92	0.93	1.34	1.62	1.64	1.59	2.15
Notified remittance	1.03	1.19	1.77	2.08	2.12	2.18	3.00	3.12	3.53	3.44	4.04
Remittance with customer identification	:	:	:	:	:	:	:	1.09	1.02	0.99	1.03
Notified company terminal giro							1.33	1.20	1.26	1.20	1.95
Unnotified company terminal giro	:	:	:	:	:	:	2.83	2.78	3.08	3.03	3.15
Company terminal giro with customer ident.	:	:	:	:	:	:	:	0.93	0.91	0.92	0.89
Own ATM outside business hours	:	:	:	2.20	2.83	2.91	2.93	3.31	3.49	3.79	3.71
Other banks' ATMs during business hours	0.00	0.51	0.70	1.23	1.63	1.65	1.87	1.95	2.25	2.19	2.71
Other banks' ATMs outside business hours	1.44	1.52	2.02	3.25	3.66	3.91	4.08	4.40	4.44	4.46	4.32
Payment terminal (EFTPOS)	1.44	1.11	1.16	1.87	1.88	2.02	2.05	2.20	2.13	2.07	2.19
Unnotified autogiro ⁶⁾	1.08	0.46	0.79	0.85	0.89	0.90	0.79	1.06	1.30	1.50	1.92
Notified autogiro ⁶⁾	2.47	2.27	2.52	2.64	2.59	2.64	2.67	2.65	3.17	3.25	3.15
Agreement-based giro ⁷⁾	:	:	:	:	:	:	:	1.52	1.60	1.51	1.60

Source: Norges Bank

Footnotes: After Table 5.1.3

5.1.2 Prices in NOK for payment transactions 1990-99. Averages for commercial banks ¹⁾

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Paper-based services											
Mail giro ²⁾	:	:	:	2.10	2.37	2.70	3.84	3.88	3.88	4.13	4.62
Giro, collection box	2.40	2.77	2.81	5.57	6.69	5.96	6.87	12.86	12.36	13.06	10.00
Giro, account debits	6.78	6.77	7.29	9.76	10.17	10.22	10.30	11.78	12.07	16.05	16.52
Giro, cash payment	5.9	7.29	7.41	8.22	8.6	9.87	17.11	18.27	18.38	25.52	27.36
Personal cheques	4.79	5.41	5.87	6.37	7.38	7.72	8.34	10.31	11.92	15.12	17.89
Business cheques	4.93	5.78	6.96	7.81	7.62	9.72	9.63	10.35	11.25	15.45	18.68
Remittance with payment instructions	4.06	5.90	6.43	8.66	9.20	10.65	14.22	23.46	23.56	26.32	28.59
Company terminal giro with instructions	:	:	:	:	:	:	14.31	23.24	23.77	25.28	26.18
Optical character recognition (OCR) - File ³⁾	:	:	:	:	:	:	0.80	0.84	0.85	0.67	0.76
Optical character recognition (OCR) - Return ⁴⁾	:	:	:	:	:	:	2.44	2.82	2.83	2.91	4.64
Electronic services											
Telegiro	:	:	:	:	:	:	1.96	2.50	2.33	2.30	2.42
PC/Internet ⁵⁾	:	:	:	:	:	:	:	:	1.67	2.34	2.38
Unnotified remittance	0.69	0.49	0.82	0.93	0.97	0.96	1.49	1.73	1.77	1.67	2.41
Notified remittance	1.13	1.18	1.76	2.07	2.09	2.15	3.26	3.49	3.76	3.70	4.43
Remittance with customer identification	:	:	:	:	:	:	:	0.90	1.01	1.01	1.05
Notified company terminal giro	:	:	:	:	:	:	1.59	1.30	1.32	1.22	3.20
Unnotified company terminal giro	:	:	:	:	:	:	3.17	3.01	3.14	3.13	2.25
Company terminal giro with customer ident.	:	:	:	:	:	:	:	0.91	0.93	0.95	0.88
Own ATM outside business hours	:	:	0.00	2.54	3.83	3.76	3.63	4.01	4.04	4.67	3.35
Other banks' ATMs during business hours	0.00	0.11	0.13	1.11	1.88	1.93	2.06	1.79	2.33	2.20	4.12
Other banks' ATMs outside business hours	2.00	1.97	2.51	3.82	4.74	4.72	4.87	4.72	4.76	4.77	4.16
Payment terminal (EFTPOS)	1.89	1.90	1.91	2.20	2.18	1.98	2.21	2.20	2.07	1.96	2.05
Unnotified autogiro ⁶⁾	1.22	0.98	0.99	0.96	0.99	0.99	0.61	0.75	1.13	1.53	1.91
Notified autogiro ⁶⁾	2.09	2.00	2.48	2.37	2.32	2.41	2.30	2.01	3.07	3.26	2.68
Agreement-based giro ⁷⁾	:	:	:	:	:	:	:	1.35	1.56	1.45	1.52

Source: Norges Bank

Footnotes: After Table 5.1.3

5.1.3 Prices in NOK for payment transactions 1990-99. Averages for savings banks ¹⁾

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Paper-based services											
Mail giro ²⁾	:	:	:	2.99	3.16	3.45	3.58	3.88	4.39	4.48	5.19
Giro, collection box	2.28	2.50	2.80	5.08	3.92	4.86	5.85	8.52	8.74	9.53	8.00
Giro, account debits	4.61	5.18	5.62	8.12	8.47	9.26	10.01	13.50	14.30	14.86	16.31
Giro, cash payment	8.42	8.70	8.77	10.39	11.00	14.44	14.98	17.30	18.66	21.82	24.45
Personal cheques	3.80	5.72	6.42	8.96	9.04	9.02	8.60	9.43	9.88	10.39	12.94
Business cheques	3.80	4.58	6.41	8.88	8.73	8.78	8.63	9.45	9.90	10.41	12.57
Remittance with payment instructions	5.64	7.46	8.26	9.58	10.50	11.09	11.72	20.38	22.14	24.41	25.84
Company terminal giro with instructions	:	:	:	:	:	:	11.45	20.33	22.63	24.40	25.74
Optical character recognition (OCR) - File ³⁾	:	:	:	:	:	:	0.82	0.77	0.71	0.89	1.04
Optical character recognition (OCR) - Return ⁴⁾	:	:	:	:	:	:	1.43	1.50	1.54	1.53	2.47
Electronic services											
Telegiro	:	:	:	:	:	:	2.12	2.32	2.31	2.35	2.28
PC/Internet ⁵⁾	:	:	:	:	:	:	:	:	2.28	1.36	2.12
Unnotified remittance	0.34	0.12	0.65	0.76	0.80	0.83	0.93	1.39	1.34	1.44	1.50
Notified remittance	0.74	1.22	1.80	2.11	2.22	2.25	2.28	2.27	3.00	2.90	3.08
Remittance with customer identification	:	:	:	:	:	:	0.84	0.97	1.13	1.15	0.98
Notified company terminal giro	:	:	:	:	:	:	1.59	1.30	1.32	1.22	3.04
Unnotified company terminal giro	:	:	:	:	:	:	2.21	2.26	2.94	2.80	1.21
Company terminal giro with customer ident.	:	:	:	:	:	:	:	0.98	0.85	0.86	0.92
Own ATM outside business hours	:	:	:	1.96	2.14	2.32	2.49	2.82	3.11	3.15	2.23
Other banks' ATMs during business hours	0.00	0.79	1.10	1.32	1.46	1.46	1.75	2.08	2.21	2.17	3.39
Other banks' ATMs outside business hours	1.05	1.21	1.67	2.85	2.90	3.34	3.60	4.18	4.22	4.23	4.44
Payment terminal (EFTPOS)	1.21	0.69	0.68	1.50	1.59	2.06	1.89	2.19	2.20	2.22	2.28
Unnotified autogiro ⁶⁾	1.01	0.20	0.64	0.78	0.82	0.83	0.95	1.30	1.44	1.47	1.93
Notified autogiro ⁶⁾	2.65	2.40	2.54	2.82	2.78	2.82	3.00	3.12	3.25	3.24	3.50
Agreement-based giro ⁷⁾	:	:	:	:	:	:	:	1.66	1.63	1.57	1.65

Source: Norges Bank

Footnotes: After Table 5.1.3

Footnotes to Tables 5.1.1, 5.1.2 and 5.1.3

1. Prices on 31.12.89, 31.12.90, 1.1.92, 1.1.93, 1.1.94, 31.12.94, 1.1.96, 1.1.97, 1.1.98, 1.1.99 and 1.1.2000. The average prices of all banks in the survey are calculated by weighting the two bank groups' prices with their actual market shares, measured by the number of transactions as at 1.1.98. The two bank groups' average prices are calculated by weighting the price per transaction according to each bank's share of sight deposits, except for Postbanken, where the bank's actual market share, measured by number of transactions, is used. Commercial and savings banks represented in the survey accounted for 90 and 72 per cent, respectively, of the bank groups' market shares, measured by sight deposits as at 1.1.99.
2. Average prices apply to each giro form sent in. Postage per despatch must be added in 95 per cent of the cases.
3. Prices apply to the payee. OCR-File means that the information is retained by the bank.
4. Prices apply to the payee. OCR-Return means that the information is returned to the payer.
5. Prices apply to home-banking via Internet. Users of Internet and telephone banking usually pay an arrangement fee and/or an annual fee for using the services. The banks in the survey charged private customers fees of up to NOK 250 for Internet banking.
6. Prices apply to the payee. The payer is also charged.
7. Prices apply to the payee. The payer is also charged.

5.2.1 Prices in NOK for transfers abroad 1.1.98-1.1.99. Averages for all banks ¹⁾

	Paper-based		Electronic		Lowest price	Highest price
	01/01/1999	01/01/2000	01/01/1999	01/01/2000	01/01/2000	01/01/2000
Cheques to other countries						
NOK 100	103.28	135.86	60.86	60.89	10.00	175.00
NOK 2500	136.90	154.66	70.96	69.98	30.00	185.00
SWIFT						
Regular transfer						
NOK 100	72.36	94.61	45.99	49.98	10.00	250.00
NOK 2500	94.70	106.82	46.41	50.40	35.00	250.00
Express transfer						
NOK 1 000	244.14	261.48	234.28	279.19	40.00	400.00
NOK 100 000	353.45	376.55	299.41	316.19	40.00	1300.00
NOK < 1 000 000	521.53	485.86	417.21	370.46	40.00	1340.00

Source: Norges Bank

1) The table shows average prices for 9 commercial banks (including Postbanken) and 18 savings banks. Prices are based on the transfer of a fixed amount. In addition to the prices quoted in the table, additional costs like telephone/faxing costs, confirmation cost and cost of using a third country currency may apply to these transfers.