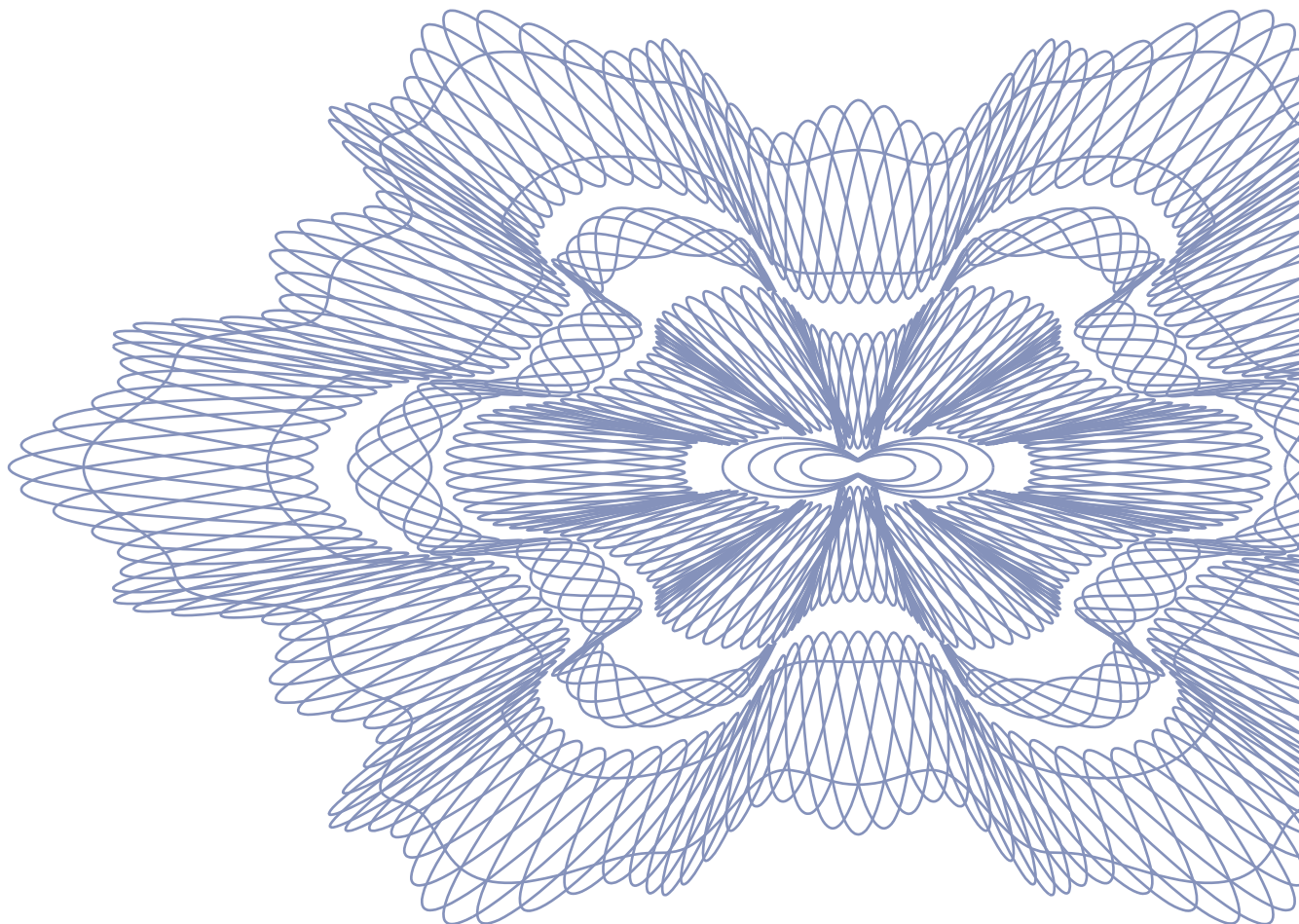




Report on Payment Systems

2000

Sep - 2001



Foreword

Both layout and content are new in this year's Report on Payment Systems. The main features of the report have been retained and we have updated the information about developments in both volume and value transmitted through the payment system and prices for services aimed at end-users. We also present new information about system infrastructure.

The changes in content are a result of our desire first to provide a better overview of the entire Norwegian payment system, both customer-oriented systems and clearing and settlement systems, and second to adapt our report to the statistical categories used in international reports. We also wish to respond to the feedback from our questionnaire and our meetings with key participants in the payment system in autumn 2000.

The first chapter describes what we mean by an efficient payment system and compares the main features in the Norwegian payment system with systems in 12 other countries. Section two presents important events both in Norway and abroad. We also comment on the potential impact of international events and market developments on payment system design as well as the authorities' and financial industry's work on operating parameters for the system. Chapter three is new and provides an overview of payment media, payment instruments and the most important participants and payment systems in Norway. This chapter also contains information about infrastructure which was previously in chapter four. As before, chapter four and five deal with developments (volume and value) in payment transactions and prices.

The statistics and explanations have been split up, in line with international standards. Transactions involving cash withdrawals are presented separately from payment transactions that involve payer, intermediary and payee. Payment cards are classified as debit or credit cards according to means of settlement with the card issuer. Payment cards that can only be used in closed systems, primarily petrol cards, are not considered payment cards and therefore receive less focus than in earlier reports.

The annual report on payment systems stems from the Norges Bank Act requirement that Norges Bank shall promote an efficient payment system in Norway and efficient payment transactions with other countries. The Act relating to Payment Systems, etc. came into force in 2000 and gives Norges Bank responsibility for authorisation and supervision of Norwegian interbank systems. This part of the payment system is especially important for financial stability. The main features of Norges Bank's surveillance of financial stability in 2000 are presented in the Bank's Annual Report, whereas ongoing surveillance of settlement risk in the Norwegian payment system is presented in the Financial Stability Report that is published twice a year.

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1 An efficient payment system

Norges Bank has published the Annual Report on Payment Systems since 1987. The basis for Norges Bank's work with payment systems is its statutory responsibility to promote an efficient payment system in Norway and efficient payment transactions with other countries (see Norges Bank Act, section 1). The 1999 Act relating to Payment Systems has also given Norges Bank authorisation and supervisory authority for banks' clearing and settlement systems, i.e. interbank systems. A key feature of the annual report has always been a presentation of developments in customer-oriented parts of the payment system. This year's report includes an assessment of the Norwegian payment system in an international context. Questions related to the design of the financial system's infrastructure, where the payment system is the core, have received increased international focus in recent years, and this year's report affords considerable attention to the Norwegian payment system as a whole.

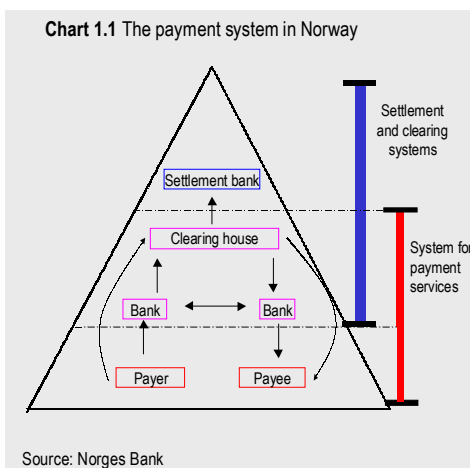
1.1 An efficient payment system

Payments are made as settlements for the purchase of goods and services, various capital transactions such as payment of interest and principal on loans and crediting of return on capital and the purchase of securities and currency. In most cases, there is only one payment settlement. The purchase of securities involves both a security and a funds transaction and currency trading involves two cash flows.

The Norwegian payment system is built around two elements, cash and deposit money. Cash (notes and coins) represents a claim on Norges Bank and is legal tender in Norway (see Norges Bank Act, section 14). Deposit money represents a claim on other banks. Claims are settled by making assets available to the payee. Normally, the creditor accepts settlement in the form of deposit money, since this is viewed as almost as liquid and safe as cash. Payment is complete when payment instruments are (unconditionally and irrevocably) available to the payee.

The payment system consists primarily of systems for transferring deposit money from payer to payee by means of various payment instruments such as giros, payment cards and cheques. Banks play an important role in the payment system since they have a statutory monopoly on receiving deposits from the public, and bank deposits provide the basis for most payment transactions. Cash payments do not involve any payment transfer services since the final settlement is made without an intermediary.

Payment systems may be divided into two main areas, systems for payment services and the interbank system (see Chart 1.1). The former involves the use and provision of card services, cheques, giros and cash. The latter is the interbank clearing and settlement system. Payment transactions go through the entire system before reaching the payee, unless the payer and payee have accounts in the same bank. The payment system is an important part of the financial infrastructure, as are the securities register at the Norwegian Central Securities Depository (VPS), central counterparties and the marketplace at the Oslo Stock Exchange.



Norges Bank is responsible for promoting an efficient payment system in Norway and efficient payment transactions with other countries. The efficiency of the payment system depends on how rapidly, cost-effectively and safely payment transactions are completed. This in turn will depend on the system's choice of technological solutions, rules for clearing, settlement and crediting of customers and prevailing rules of law. As a rule, speed and cost-effectiveness will be weighed against safety. The transition from cash to deposit money enhances cost-effectiveness but also increases the risk involved in payment settlement. Solutions that both reduce risk and increase cost-effectiveness and speed have gradually been developed for deposit money payments. The changes that have been made to reduce risk and increase efficiency in the Norwegian clearing and settlement system are discussed in section 2.2.

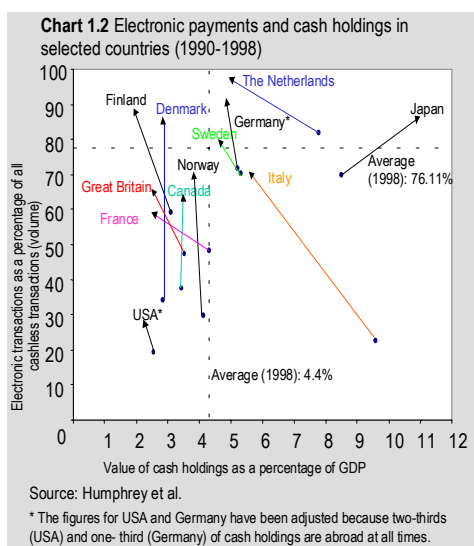
The system should be capable of change and innovation in pace with technological developments to insure efficiency in the long term.

1.2 International comparison

Norway is well on its way towards “the cashless society” in the sense that the use of cash has been on the decline for a long time, and electronic payment instruments have rapidly become more popular. Chart 1.2 shows that Norway had somewhat less cash reserves outstanding in relation to GDP than the average for comparable countries and a somewhat lower share of electronic payments than the average.

International organisations like the BIS and the ECB have placed considerable focus on payment systems by way of requirements and recommendations. The Norwegian payment system largely complies with the Core Principles, which relate primarily to interbank systems (see chapter 2). It may also be useful to know something about the efficiency and safety of the Norwegian payment system compared with systems in other countries. We will therefore present a comparison of Norway and a number of other countries.¹ Our presentation is based on data covering the period 1990-1998. The survey does not differentiate between enterprise and household use of payment instruments. Interbank transactions have been removed from the data so that only customer transactions are presented.

Norway has little cash in circulation and a relatively large balance in transaction accounts compared with other countries. The cash to GDP ratio is less than 4 per cent. A working paper from Norges Bank (Humphrey et al. 2000) shows that the cash share in connection with payments in shops and restaurants (direct settlement over the counter) fell to around 50 per cent in Norway in 1999 (measured by value) and is expected to decline further in the next few years (see Chart 1.3). The use

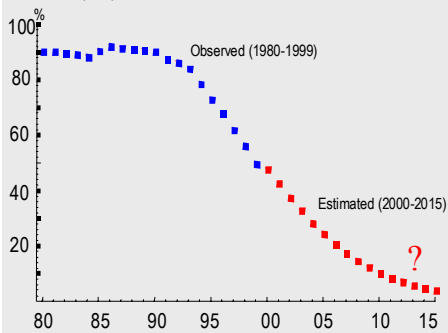


The Core Principles have been formulated by the BIS and comprise ten standards with which national payment systems should comply in order to operate safely and efficiently. (See chapter 2 for further details).

A transaction account is an account with deposits in NOK and currency which may be converted immediately to notes and coins or from which direct payments may be made without incurring any costs other than normal transaction and setting-up fees.

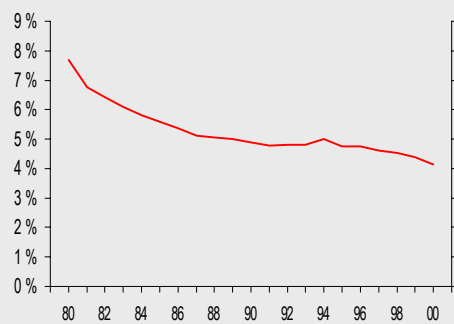
¹ The countries in the survey are the G10 countries in the BIS and include Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Sweden, Switzerland, UK, US, as well as Finland and Denmark, our neighbours in the EU.

Chart 1.3 Actual and forecasted share of cash payments in Norway. By value



Source: Humphrey et. al.

Chart 1.4 Cash in circulation as a percentage of mainland GDP (1980-2000)



Source: Norges Bank, Statistics Norway.

EFTPOS - Electronic Funds Transfer at the Point of Sale - is a card payment in a payment terminal located in a shop, taxi, restaurant etc. In most cases, the account to which the card is connected is debited immediately, i.e. the payment is made online.

of payment cards in particular is on the rise. In 1992, it became possible to withdraw cash in connection with payment card transactions. This considerably increased the popularity and user-friendliness of the card system. The cash share of commercial transactions began to decline the same year. A survey conducted by the Bank of Finland (Snellman et al. 2000) compares nine EU countries and Switzerland with regard to their transition from cash payments to the use of deposit money, i.e. primarily payment cards and cheques. In France, the Netherlands, Belgium and Finland, cash was used to pay for about 60 per cent of purchases at shops in 1996 (measured in value), about the same as in Norway that year. However, projections estimated a more gradual reduction in the use of cash and a higher cash share in these countries than has been observed in Norway since 1996.

The number of banks and branches per inhabitant in Norway is about average for the countries in the survey. The number of branches has declined in Norway in recent years, while the number of banks has been fairly stable. It is worth noting that there are one million e-bank users in Norway in 2001, a large number compared with other countries. Banks are signalling that this will affect the service in branches and that the number of branches may also change as a direct result of the use of e-banking.

Development of the ATM system began fairly early in Norway, and the development pace has slowed in recent years. Development began later in other countries and growth there has been more rapid in recent years. The number of ATMs per inhabitant in Norway is approximately the same as in our neighbouring countries. However, ATMs are used more frequently in Norway than in many of the other countries.

EFTPOS (Electronic Funds Transfer at Point Of Sale) is a very important system in Norway compared with other countries. Norway has a very large number of EFTPOS terminals per inhabitant and the terminals are used frequently in Norway. The nominal value per transaction is quite high compared with other countries. The possibility of cash-back in connection with goods purchases has also increased the use of payment terminals. Norwegians have better access to cash and deposit money than inhabitants of other countries when EFTPOS and cash withdrawals in connection with goods purchases, ATM, bank/post office branches and the number of payment cards are considered as a whole.

Of all the countries in the peer group, Norway had the most card transactions per inhabitant in 1998. The value per transaction in Norway was the same, though slightly falling, as the average in the survey. In addition, there is less than one card per inhabitant in circulation in Norway. This is also the case in the other Nordic countries. In a number of other countries, there are approximately two cards in circulation per inhabitant. In Norway, cards are few but transactions per card are many because combined cards are common and all payment cards may be used in all Norwegian ATMS and EFTPOS terminals. This is a very efficient and user-friendly combination compared

A combined card is a bankcard with integrated ATM/EFTPOS functions and VISA/Master Card or other international (credit) card functions.

with other countries' systems where combined cards are less common.

The giro is the most important payment instrument in Norway and is used frequently in Norway compared with other countries. Only in the Netherlands, Finland and Germany was the giro used more frequently than in Norway in 1998 (measured as the number of giros per inhabitant). In most countries in the survey, the giro is the most frequently used payment instrument. In Norway, however, the number of direct debits per inhabitant is low. The use of electronic giros (payment via an e-bank) is increasing very rapidly in Norway and is expected to increase even more quickly with the introduction of e-billing in 2001. The share of paper-based giros is especially high in Norway (roughly 51 per cent) due to the mail giro scheme. The share of paper-based giros is also high in Sweden, although it is not more than about 25 per cent. The mail giro is an efficient form of paper-based giro but is less efficient than the electronic giro.

Some countries use cheques instead of giros. This is the case in the US, France, Canada and the UK, where a large number of cheques are written for relatively small amounts. Cheques are seldom used in Switzerland, Sweden and Norway and each cheque written has a high value.

The survey shows that Norway's payment system, like systems in the Nordic countries and some other European countries, is built up around payment cards and giros.

An efficient payment system

Banks discontinued the practice of advance crediting of customer accounts in the Norwegian Interbank Clearing System (NICS) for retail settlement in June 2000, thus reducing settlement risk. An additional daily settlement for retail transactions was introduced at the same time in order to maintain settlement efficiency. Most payments in Norway are completed in one working day, which is faster than in most other countries. The transition to several settlements daily and delayed crediting increases dependence on a continuously operating system and thus also increases operational risk. On the whole, however, the changes made in 2000 have both reduced risk and increased efficiency in connection with customer payments.

Early crediting (T-copying) means that the payer's bank notifies the clearing house and the payee's bank simultaneously that payment is on the way. The payee's bank can thus credit the amount to the payee before the bank has received the remittance. This is a source of credit risk for the payee's bank. With **delayed crediting** (Y-copying), the payer's bank does not notify the payee's bank. Notification comes from the clearing house when funds are transferred to the payee's bank, thus eliminating credit risk.

Table 1.1 Key figures regarding payment transactions in the countries included in the international comparison (peer group) 1998

	Belgium	Canada	Denmark	Finland	France	Italy	Japan	Netherlands	Norway	Switzerland	Sweden	UK	Germany	US
Notes and coins as % of GDP	4.8	3.5	2.9	2.2	3.1	5.6	11.0	4.9	3.8	7.9	4.6	2.8	6.4	5.4
Balance in transaction accounts as % of GDP	15.5	20.0	27.0	31.3	20.8	28.7	32.3	27.9	21.4	25.0	40.4	59.6	21.2	7.3
No. of inhab. per branch	1 191	2 420	1 423	1 661	1 259	1 429	1 851	2 287	1 602	1 054	2 403	1 706	1 364	3 511
ATMs														
No. per 1 mill. inhabitants	562	774	310	1 047	499	482	1 127	419	440	722	281	416	556	692
No. of withdrawals per yr. per inhab.	15.6	53	..	44.7	20.5	8.4	5.8	27.2	24.2	11.3	37.6	31.3	17.1	41.4
Average withdrawal, US\$	124.0	62.2	..	75.6	70.7	178.9	235.0	95.7	125.6	180.4	108.4	87.8	169.5	68.0
EFTPOS terminals														
No. per 1 mill. inhabitants	9 124	12 960	12 936	11 044	9 949	5 977	127	8 569	11 824	7 167	8 405	10 304	2 816	6 289
No. of transactions per year per inhabitant	32.7	44.6	64.2	52.4	36.8	5.6	0.004	37.9	63.1	14.9	19.0	..	4.4	21.2
Average amount, US\$	66.2	29.1	53.8	50.9	54.2	101.9	62.4	48.2	56.7	63.6	68.0	..	88.5	41.6
Instruments' % share of no. of non-cash payments														
Cheques	7.0	34.6	13.1	0.2	40.7	27.2	..	1.9	1.4	1.0	0.3	28.1	4.8	70.0
Giro (credit transfers)	54.0	9.5	..	58.5	16.4	39.0	..	45.0	49.0	72.1	69.3	19.3	50.6	3.7
Direct debits	9.4	7.4	20.8	3.9	13.3	9.2	..	28.5	3.9	3.5	8.1	19.4	39.5	2.0
Payment cards	27.4	48.4	64.7	37.3	18.2	14.2	..	24.5	45.7	23.4	22.3	33.1	5.1	24.3
Instruments' % share of value of non-cash payments														
Cheques	3.2	96.5	5.3	7.4	2.6	2.8	..	0.0	3.8	..	0.0	3.7	1.4	10.2
Giro (credit transfers)	96.3	2.1	..	90.7	96.0	95.7	..	99.2	90.0	99.8	96.5	95.1	95.8	88.5
Direct debits	0.3	0.7	1.2	1.1	0.6	0.3	..	0.7	3.0	0.1	2.7	1.0	2.7	1.1
Card transactions	0.2	0.8	0.5	0.8	0.1	0.07	..	0.1	3.2	0.1	1.7	0.3	0.04	0.2

2 International and domestic payment systems

The euro has been in use as an electronic currency since 1 January 1999 and euro notes and coins will be introduced in a couple of months. This has increased the need for a cross-border payment system that functions smoothly. Efforts are being made world-wide to make settlement systems safer and more efficient. Norway too is working towards this end. The authorisation requirement for Norwegian interbank systems is a milestone in this context. New products and payment solutions have entered the Norwegian arena due to a desire to increasingly utilise IT.

2.1 International regulations and infrastructure

Developments in the EU/EEA and the ECB

On 1 January 2001, Greece became the twelfth country in the euro area. On 1 January 2002, euro notes and coins will be put into circulation in the 12 euro area countries. Notes and coins in national currency will continue to be legal tender for one to two months. After this, euro notes and coins will be the only legal tender in the euro area. Withdrawal of the old notes and coins will begin immediately after 1 January 2002. The participating countries and the European Central Bank (ECB) hope that the withdrawal period will in practice be very short.

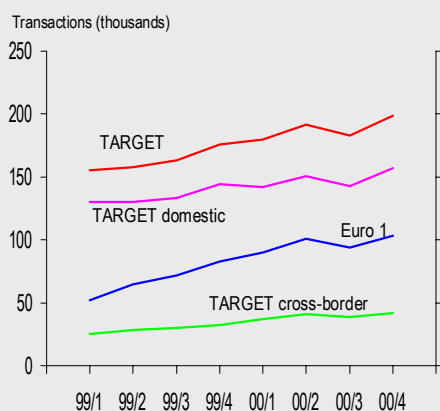
When the euro was introduced as a common electronic currency on 1 January 1999, the ECB and the EU countries' central banks introduced a joint settlement system for euro transactions between banks in EU countries, TARGET (Trans-European Automated Real-time Gross Settlement Express Transfer). TARGET paves the way for efficient implementation of the single monetary policy in the euro area and facilitates fast and safe settlement of interbank euro transactions. At present, four euro payment systems in addition to TARGET are in operation and have been approved by the ECB. The largest of these, Euro 1, has about 70 participating banks from 20 countries, including Norway. The participating banks are either part of the EU or have branches in EU countries. The other three payments systems are based on the former domestic payment systems in France (PNS), Germany (EAF) and Spain (SEPI). In all of these payment systems, final settlement of euro transactions goes through TARGET. In both TARGET and Euro 1, interbank transactions account for the bulk of the value of cross-border transactions. Customer payments account for about one-third of cross-border transactions in TARGET and for more than half of Euro 1 transactions. The number of transactions and total amounts rose for both TARGET and Euro 1 in 2000, while average transaction amounts declined. This reflects an increasing number of transactions on behalf of customers, primarily business customers.

The European Parliament and Council Directive 97/5/EC of 27 January 1997 on cross-border credit transfers was put into

Different denominations of the euro:

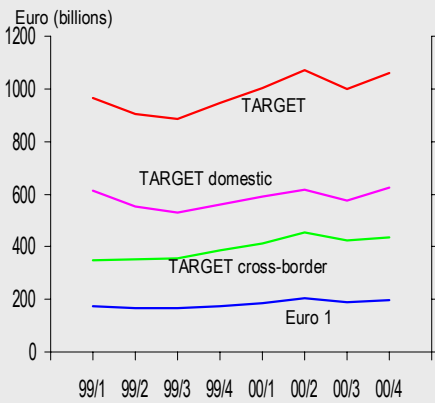
1 euro consists of 100 cents. Banknote denominations are 500, 200, 100, 50, 20, 10 and 5 euros. The coins have nominal values of 1 euro, 2 euros as well as 1, 2, 5, 10, 20 and 50 cents. 56 billion euro coins are being produced and 14.5 billion euro banknotes are being printed.

Chart 2.1 Clearing and settlement systems in Euro. Number of transactions. Daily average (quarterly)



Source: ECB

Chart 2.2 Clearing and settlement systems in Euro. Total amount. Daily average (quarterly)



Source: ECB

force on 14 August 1999 to increase the efficiency of cross-border credit transfers. The directive regulates cross-border credit transfers in the EEA area up to a value of 50 000 euros, i.e. about NOK 400 000 (see Box 2.1). The directive does not apply to transfers that originate in financial institutions. In Norway, the directive has been implemented through regulation 1999.07.02 no. 719 on payment orders to and from a foreign country pursuant to the Act relating to Financial Agreements. To improve the efficiency of cross-border payments, the ECB encourages increased standardisation across borders. The European banking industry is developing new standards and routines, including standardised account numbers and reporting formats to enhance the efficiency of credit transfers in the EU. The banking industry is also working on developing a standard for a multilateral interbank transaction fee (MIF). Introduction of an MIF will mean that part of the fee charged by the payer's bank will follow the payment to the payee's bank. The purpose of this is to prevent a separate fee charge for the payee.

In November 2000, the EBA (Euro Banking Association) introduced Step 1 (Straight-through euro processing), a new system for small cross-border euro payments. Clearing and settlement of this kind of transaction go through Euro 1, which is operated by the EBA. Banks participating in Euro 1 may participate in the system directly, whereas other banks may participate through affiliation with a bank participating in Euro 1. The purpose of Step 1 is: 1) to shorten payment execution

Box 2.1 Cross-border payments in the EU

The EU Commission and the ECB have defined seven objectives for cross-border payments which they encouraged the banking industry to fulfil before the introduction of euro banknotes and coins on 1 January 2002:

- 1) Enhanced system(s)/services should be ready by 1 January 2002.
- 2) Priority should be given to cross-border credit transfers.
- 3) The price of cross-border credit transfers should decrease substantially.
- 4) Settlement time should be comparable for domestic and cross-border payments.
- 5) For cross-border credit transfers, as a default rule, fees are to be borne by the originator of the payment only.
- 6) Access to cross-border retail payment systems should be open.
- 7) Existing standards should be implemented as soon as possible.

These objectives have been drawn from the European Parliament and Council's Cross-Border Credit

Transfers Directive. The directive lays down minimum requirements for financial institutions to ensure an adequate level of information to customers about settlement time, fees and exchange rates. The directive also establishes a 5-day limit for credit transfers, a general rule stating that fees should be borne by the originator of the payment only and more detailed rules concerning crediting of the payee's account.

In autumn 1999, the European Commission conducted a survey concerning prices and settlement time for cross-border payments. The survey studied 352 payment transactions of euro 100 each between different pairs of countries. The survey showed that the average fee for the payer was euro 15.51, with a spread from euro 8.15 to euro 25.61. In addition, for 25 per cent of the transactions, the payee was charged a fee varying from euro 3 to euro 10.8. On average, the combined fees totalled euro 17.1 or 17.1 per cent of the amount transferred. Settlement time varied somewhat for these payments. A transaction took 3.41 working days on average. A good 5 per cent of the transactions took more than 7 days.

The VPS has entered into an agreement with DnB regarding the establishment of a **securities settlement system for securities listed in euros on the Oslo Stock Exchange**. Payment settlement for these types of securities will go through DnB's London branch, which is linked to the TARGET system. At present, there are no securities listed in euro on the Oslo Stock Exchange.

E-money is defined in the e-money directive as an electronic substitute for banknotes and coins stored in an electronic medium (such as a card with an electronic chip or on the hard disk of a computer) which is designed for executing small-value electronic payments. E-money is a prepaid instrument that is not connected to a bank account at the time of payment.

time 2) foster the use of industry standards to enhance straight-through processing in the banks 3) develop European business practices in relation to cross-border retail payments. In the medium-term, the EBA aims to develop a satisfactory clearing system for small-value cross-border euro payments.

The ECB does not want central banks outside the euro area to establish settlement systems and loan schemes in euro. Special agreements between the ECB and central banks in EU countries outside the euro area relating to connections with TARGET are the only exceptions to this. To reduce potential competitive disadvantages for Norwegian business and industry and Norwegian banks that are not directly linked to euro settlement systems, the Norwegian banking industry in cooperation with Norges Bank has evaluated alternative solutions for executing settlement of euro transactions in Norway. On the basis of these evaluations, a possible settlement procedure has been developed that entails conversion to NOK of participants' net positions in euros and settlement in Norges Bank in the usual manner. The banks involved will then exchange NOK for euros via accounts in Norges Bank. So far, demand for euro payments in Norway has not been sufficient to justify implementation of this solution.

On 18 September 2000, the EU adopted the E-Money Directives (2000/46/EC and 2000/28/EC). The main points in the directives on e-money and e-money institutions are as follows:

- Issuers of e-money may be credit institutions or electronic money institutions (ELMIs). ELMIs are not credit institutions, but are subject to special operational requirements designed to reduce users' risk of losing e-money. Capital requirements for ELMIs are lower than for banks.
- ELMIs are subject to strict rules regarding investment of total assets and are also subject to regulatory oversight. Requirements that apply to the management and to administrative and accounting routines are stricter than those that apply to ordinary commercial operations.
- E-money shall be redeemable at face value, ie the conversion rate to cash shall be 1:1
- It shall not be possible to store more than 150 euros in an e-money medium (card, etc.)

The deadline for implementation of the e-money directives in the EU countries is 27 April 2002. The directives were incorporated in the EEA agreement on 30 March 2001 and must therefore be introduced into Norwegian law no later than the deadline date. The Banking Law Commission's recommendations for an act concerning financial undertakings (NOU 1999:14) deals with the issuing of e-money, among other things. This proposal has not been presented as a bill to the Storting.

In recent years, international organisations have paid special attention to drawing up and implementing **standards for the financial system**. The following standards are important:

- Core Principles for effective banking supervision (BIS)
- Core Principles for systemically important payment systems (BIS)
- Objectives and principles for:
 - Securities regulation (IOSCO)
 - Insurance Core Principles (IAIS)
 - Code for Transparency in Monetary and Financial Policies (IMF)

Core Principles for Systemically Important Payment Systems

1. The system should have a well-founded legal basis under all relevant jurisdictions.
2. The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through participation in it.
3. The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.
4. The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.¹
5. A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.
6. Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.
7. The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.
8. The system should provide a means of making payments which is practical for its users and efficient for the economy.
9. The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.
10. The system's governance arrangements should be effective, accountable and transparent.

¹Systems should seek to exceed the minima included in these two Core Principles

Work in the Bank for International Settlements (BIS)
The Committee on Payment and Settlement Systems (CPSS) of the central banks of the Group of Ten countries has been working to encourage the establishment of international standards and principles for payment and settlement systems.

The final version of the Core Principles for Systemically Important Payment Systems was published in January 2001. The Core Principles build largely on the six recommendations in the 1990 Lamfalussy Report. This work has been underway since 1998 and the group has comprised 11 countries in addition to the G10 countries, the ECB, the IMF and the World Bank. The main purpose of the report is to establish standards that will reduce systemic risk in payment systems as well as maintain or increase efficiency. The report concentrates on systems that are important for financial stability. Closed and/or small systems will not be affected by the principles to the same degree.²

In September 2000, the CPSS presented its report "Clearing and Settlement Arrangements for Retail Payments in Selected Countries" which was a follow-up to "Retail Payments in Selected Countries: A Comparative Study" from 1999. The primary focus in the 2000 report was clearing and settlement systems for retail payments in the G-10 countries and Australia. The main conclusion was that despite considerable variations in the use of payment instruments, most countries use systems for multilateral clearing and net settlement of retail payments. Agreements with central banks and correspondent banks are especially important in some countries. Nearly all countries have their own settlement agreements for debit and credit cards. The emergence of new technology, e-finance, the Internet and new forms of payment have increased the need for developing settlement systems in some of the countries. These developments have created new challenges for financial institutions and increased customers' flexibility in selecting payment services. The CPSS will continue to focus on payment systems.

In May 2000, the CPSS published the "Survey of Electronic Money Developments". This is a comparative study of the prevalence of e-money systems in 68 countries. The report covers both card-based and software-based e-money. This is the most recent report in a series of CPSS publications on e-money. The purpose of these reports is to help central banks maintain an overview of e-money systems in other countries.

Clearing and settlement systems for foreign exchange transactions

Foreign exchange transactions are contracts involving the exchange of an amount in one currency for an agreed amount in another currency. BIS investigations have revealed that the time lag between delivery of sold currency and receipt of purchased currency entails considerable risk for participating banks.

² For a more detailed discussion of this report, see "Norges Bank's oversight of payment systems – authorisation and supervision" in *Economic Bulletin* no. 3, 2000.

International efforts are focused on establishing a system for Continuous Linked Settlement (CLS). CLS will operate on the principle of payment versus payment (PvP) for settlement of foreign exchange contracts. Participating banks will settle their mutual foreign exchange transactions through accounts in a joint multi-currency bank, the CLS Bank (CLSB), which has been established solely for this purpose. Participants will maintain accounts in the CLSB in all currencies that participate in CLS. Payments to and from these accounts will be made via the CLSB's accounts in the respective central banks. This means that a foreign currency is disbursed if and only if a counter payment is received simultaneously. Thus, it is possible to reduce the substantial credit risk that is currently involved in foreign exchange transactions. More than 50 of the world's largest banks are behind CLS.

According to the revised plan, the CLS will be in operation in seven currencies early in 2002 (Australian, Canadian and US dollars, euros, yen, Swiss francs and sterling). The project has encountered delays and only a small group of banks will participate initially. However, the CLS plans a gradual acceleration so that all member banks can participate from mid-2002. Norges Bank is working toward achieving the inclusion of the Norwegian krone in the CLS currencies. Signals from the CLS indicate that the Norwegian krone may be included in 2002 together with the Swedish and Danish kroner and the New Zealand, Hong Kong and Singapore dollars.

In the spring of 2000, Norges Bank conducted a survey of foreign exchange settlement risk in Norwegian banks (Bergundhaugen 2000). In the period covered by the survey, daily turnover in foreign exchange settlement involving Norwegian banks amounted to approximately NOK 168 billion, corresponding to daily payment obligations of NOK 84 billion. On the basis of knowledge of the settlement cycle and market weighting for various pairs of currencies, the average exposure throughout the day for the Norwegian banks that participated in the survey can be estimated at approximately NOK 130-140 billion, equivalent to more than three times their Tier 1 capital. The potential risk reduction for Norwegian banks depends on how the banks choose to adapt to CLS. The Norwegian banks that are participating are DnB, CBK (via the Nordea system) and Fokus (through Den Danske Bank). Large foreign banks with a presence in Norway will also be connected to CLS.

Responsibilities of central banks in applying the Core Principles

1. The central bank should define clearly its payment system objectives and should disclose publicly its role and major policies with respect to systemically important payment systems.
2. The central bank should ensure that the systems it operates comply with the Core Principles.
3. The central bank should oversee compliance with the Core Principles by systems it does not operate and it should have the ability to carry out this oversight.
4. The central bank, in promoting payment system safety and efficiency through the Core Principles, should cooperate with other central banks and with any other relevant domestic or foreign authorities.

Central banks' oversight of the payment system

The CPSS Report stipulates standards for risk and efficiency and legal requirements that should be met to ensure stable payment systems with a low level of risk. The report has been in process for some time and a number of countries have already adapted their systems to the requirements. The CPSS Report also contains four recommendations to central banks about applying the Core Principles. These provide a framework for the central banks' oversight of payment systems, a responsibility that is more or less explicitly stipulated in the central bank acts or follow as a result of their role as the main

Changes in the Reserve Bank Act and two new acts relating payment systems that came into force 1 July 1998 expanded the **Reserve Bank of Australia's (RBA)** responsibility for payment systems. A Payment Systems Board was established at the same time to deal with the new responsibilities.

The RBA shall work to achieve an efficient and stable payment system. Self-regulation is the general rule, but the central bank also has broad authorisation for intervention. The RBA is of the opinion that the interbank systems comply with the Core Principles since Australia has established RTGS systems for interbank settlement. Therefore, the bank is focusing on retail payment systems where competition is negligible and efficiency is low. The RBA publishes a separate annual report on payment systems that describes developments in the Australian payment system and the significance of these developments for risk and efficiency.

settlement bank. In a few countries (Australia, Canada, France and Norway) separate acts regulating payment systems have been adopted. In 2000, both the ECB and the Bank of England chose to explicitly define the key guidelines for their oversight of payment systems.

The ECB defined its responsibility for oversight of payment systems in "The role of the Eurosystem in the field of payment system oversight" issued in June 2000. The purpose of payment system oversight is to ensure well-functioning systems. The ECB lists four main reasons for central bank involvement in the area of payment systems. First, central banks aim to maintain systemic stability in the payment systems by containing the exposure to systemic risk. Second, central banks are concerned with the efficiency of payment systems, which is a complementary objective to systemic stability. Third, they are concerned with the security of the payment instruments used by the public. Both efficiency and security are important to the confidence of the users of the payment systems and the users of the payment instruments and ultimately to the maintenance of public confidence in the currency. Fourth, since the payment system is an essential vehicle for the implementation of monetary policy, oversight is aimed at safeguarding the transmission channel for monetary policy.

Responsibility for payment systems is stipulated in the EU Treaty and the Statute of the ECB and the European system of central banks.³ Payment system oversight is one of the fundamental tasks of the Eurosystem. The central banks' responsibilities are to define and implement principles and standards for stable, safe and efficient payment systems and to ensure compliance with these principles and standards. Central banks shall also monitor developments in the payment system to assess the risk associated with changes. The Eurosystem has a special oversight responsibility when the design and operation of payment systems affect the implementation of monetary policy, systemic stability, competitive conditions between market participants and cross-border payments. Otherwise, oversight is performed by the national central banks within the framework of the general objectives.

According to the Riksbank Act, Sweden's Riksbank shall "promote a safe and efficient payment system" and shall also "oversee the payment system with a view to ensuring financial stability". In 2000, the Riksbank took the initiative to establish a "Payment System Council", a forum for general discussions regarding payment system issues. The Payment System Council had its first meeting on 29 September 2000. Council members are representatives of the administration of Sweden's four largest banks, OM and VPC, and the council is chaired by the deputy governor of the Riksbank, Lars Nyberg.

³ The basic task to be carried out through the ESCB shall be (...) to promote the smooth operation of payment systems." (EU Treaty, Article 105 and ECB Statute, Article 3) "The ECB and national central banks may provide facilities and the ECB may make regulations to ensure efficient and sound clearing and payment systems within the Community and with other countries." (ECB Statutes, Article 22)

The implementation of the EU's Settlement Finality Directive in December 1999 gave the Bank of England (BoE) responsibility for systemically important payment systems in the UK. The BoE defined its oversight responsibility in "Oversight of Payment Systems", which was published in November 2000. The BoE states that payment systems may require government regulation because they may contribute to spreading problems from one member to another in the system and thus contribute to systemic risk. Payment systems that function smoothly and have adequate competition are also important for efficiency in the financial sector. The objective of the BoE's payment system oversight is to ensure that sufficient emphasis is placed on risk reduction and risk handling when payment systems are developed and operated. The BoE has identified two systems for large-value payments that are subject to oversight. The BoE also includes key retail payment systems in their oversight responsibility because problems in a system that is widely used can affect large segments of the population (system-wide risk).

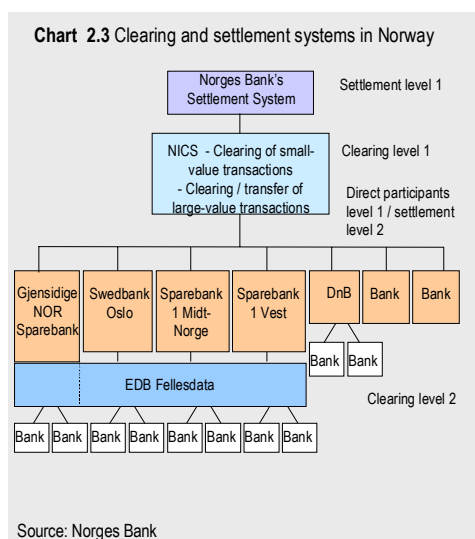
2.2 Norwegian regulations and infrastructure

Authorisation requirement for interbank systems

The Act relating to Payment Systems, etc. was adopted on 17 December 1999 and entered into force on 14 April 2000. According to the Act, an interbank system may not be established or operated without authorisation from Norges Bank. Interbank systems are defined as systems based on common rules for clearing, settlement or transfer of funds between credit institutions. The purpose of statutory regulation of interbank systems is to ensure that they are organised with a view to safeguarding financial stability. Particular emphasis shall be placed on countering risk due to liquidity or solvency problems among participants in the system. In the regulation of 13 April 2000, the Ministry of Finance stipulated rules for a transition period: systems already in operation when the act came into force had to seek authorisation by the end of 2000.

The preparatory work for the Act has emphasised that the authorisation scheme should supplement rather than replace the self-regulation exercised by the banking industry thus far. Accordingly, the Act provides framework regulations and includes few specific requirements for system design. Norges Bank's responsibility as licensing authority will thus be to assess whether the systems comply with the purpose of the Act, including whether the system organisation is suitable for the purpose, and whether the appropriate agreements are in place. Norges Bank has also analysed overall risk in the systems and the systems' mechanisms for handling situations involving liquidity or solvency problems. The Act is based on international recommendations, including the Core Principles, and when systems go through the authorisation process, emphasis is placed on their compliance with these recommendations.

On 14 March 2001, Norges Bank's Executive Board approved two interbank systems and exempted four systems



Some key concepts

NBO (Norges Bank's settlement system): As a rule, all banks with accounts in Norges Bank have access to NBO. Involves settlement of gross transactions and netted clearing results through banks' accounts in Norges Bank.

NICS (Norwegian Interbank Clearing System): The banks' jointly-owned system for clearing and liquidity information.

RTGS (Real-Time Gross Settlement): Real-time gross settlement in which SWIFT transactions of more than NOK 100 million and specially marked transactions are settled immediately one by one in Norges Bank.

Netting: A conversion of transfer orders between two or more banks into one net obligation or one net claim.

SWIFT netting: Netting of medium-sized SWIFT payments with settlement six times daily in Norges Bank.

NICS retail netting: Netting of ordinary bank customers' giro, card and cheque transactions with settlement twice daily in Norges Bank.

Securities settlement: Takes place once a day in Norges Bank (financial aspect) and in the Norwegian Central Securities Depository, VPS (securities aspect).

from the authorisation requirement. The NICS operator office received approval for the banking industry's joint clearing system, which is operated by the BBS (Banks' Central Clearing House). NICS is the hub of the Norwegian payment system and handles clearing of small-value payments for ordinary customers as well as large-value interbank transactions. Gjensidige NOR Sparebank's (Union Bank of Norway) settlement system was approved, including the portion of clearing in EDB Fellesdata that is settled in Gjensidige NOR Sparebank. Turnover in this system is lower than in NICS, but a large percentage of Norway's savings banks participate and the system is important for ordinary customer payment transactions. Statistics from these systems show that exposure between participants in both systems is normally limited. In addition, they have established reliable mechanisms for handling problems.

Norges Bank may grant exemptions to the authorisation requirement for systems that are assumed to have no significant effect on financial stability. Norges Bank has granted such exemptions to the settlement systems operated by Swedbank Oslo, SpareBank 1 Midt-Norge and SpareBank1 Vest as well as to the appurtenant clearing system operated by EDB Fellesdata. On 6 June 2001, Norges Bank approved DnB's planned system for clearing and settlement of the transactions of several small Norwegian banks.

Chapter 4 of the Act relating to Payment Systems, etc. will apply to interbank systems with authorisation. This means that clearing and settlement agreements can be applied even if insolvency proceedings have been opened against a system participant, when transactions are entered into the system prior to the opening of insolvency proceedings. This is part of the implementation in Norwegian law of the EU Directive on Settlement Finality in the Payment and Securities Settlement Systems (Directive 98/26/EC of the European Parliament and Council). According to the Act, clearing and settlement agreements will apply in the event of insolvency only after Norges Bank has notified the interbank systems to the EFTA Surveillance Authority (ESA). Norges Bank plans to send these notifications as soon as the systems are approved and the necessary agreements are in place. Norges Bank's Settlement System (NBO) will be notified to the ESA at the same time.

Norges Bank shall oversee approved interbank systems and may require the operator to provide the information necessary to ensure that the system is organised and operated in accordance with provisions in or pursuant to the Act. If the system is not organised in this way, Norges Bank may instruct the operator to implement the measures necessary to remedy the situation. According to plan, the Banks' oversight will consist primarily of monitoring the systems' compliance with the requirement to report any changes that have a bearing on ownership, organisation or operation, provide an annual report on turnover, participation and exposures, as well as information about implementation of the systems' testing of contingency plans. Systems that are exempt from the authorisation requirement are not subject to oversight. If the systems' scope and turnover

Risk in the payment system:

Settlement risk is the risk to which participants in the settlement and clearing systems are exposed through their participation in these systems. Risk may be divided into credit risk and liquidity risk.

Credit risk is the risk of losses due to the inability of a counterparty to meet his obligations. Banks cannot choose their counterparties in connection with payment settlements, so the credit risk here is different from credit risk in connection with ordinary lending operations.

Liquidity risk is the risk that a counterparty is unable to meet obligations at the appointed time.

Systemic risk is the risk that the inability of one participant to meet his obligations, or disruptions in the system, may result in the inability of other system participants or financial institutions in other parts of the financial infrastructure to meet their obligations.

Operational risk is the risk that operational factors such as technical malfunctions or operational mistakes will cause or exacerbate credit or liquidity risks.

Advance crediting (T-copying) means that the payer's bank notifies the clearing house and the payee's bank simultaneously that payment is on the way. The payee's bank can thus credit the amount to the payee before the bank has received the remittance. This is a source of credit risk for the payee's bank. With **delayed crediting** (Y-copying), the payer's bank does not notify the payee's bank. Notification comes from the clearing house when funds are transferred to the payee's bank, thus eliminating credit risk.

increase appreciably, Norges Bank will again evaluate whether the system is subject to the authorisation requirement.

Changes in NICS and NBO

Banks' credit risk in connection with payment services is tied to early crediting. Banks adopted delayed crediting on 26 June 2000 for the bulk of ordinary customer payments, ie payments that are included in NICS retail netting. This reduced banks' credit risk in connection with payment services, but also reduced efficiency since it now takes longer for payments to reach the payee. This was counterbalanced, however, by the introduction of a morning settlement of NICS retail netting in Norges Bank which allows banks to update customer accounts more frequently.

Banks still practice early crediting (referred to as T-copying) for large-value payments, ie payments sent in SWIFT format. The banking industry has, however, made a decision in principle to go over to Y-copying in the first quarter of 2002. This means that the payee's bank will not receive notification of a payment before it has been settled in the settlement bank. Most of the banks' remaining credit risk in connection with payment services will thus be eliminated in the first quarter of 2002. SWIFT payments are either settled continuously (RTGS) or are included in NICS-SWIFT netting, which is settled frequently. This means that the transition to crediting after settlement will not substantially increase the time it takes for payments to reach the payee.

When NBO was established (1997), banks' cover for positions in the various settlements became subject to continuous control. Cover control demands liquidity management since completion of settlements is contingent on banks having cover for their positions in the settlements. During a transition period, Norges Bank offered unsecured loans (E-loans) to ensure the completion of certain settlements. These included securities settlements (based on VPO and NOS netting), retail settlements, settlements for banks' cash withdrawals and settlements in connection with Norges Bank's own transactions. Banks have now developed competence in liquidity management through the day. Therefore, Norges Bank discontinued E-loans in connection with securities settlements and retail settlements on 1 June 2001.

On 1 July 2001, Norges Bank introduced fees for its settlement services. The price-setting strategy has focused on providing the right incentives and on maintaining a simple pricing structure. As a result, Norges Bank has differentiated prices for manual and automated services. The price structure is three-tiered and includes a connection fee (for new participants), an annual fee and a transaction fee. This is in line with practice in other countries.

Norges Bank's Settlement System (NBO) consists of the regulations, computer systems, work routines and the manpower/competence which determine how Norges Bank performs its tasks as a settlement bank, i.e. how the bank:

- provides access to settlement in central bank money
- checks banks' cover and handles queues
- provides liquidity in connection with the execution of settlements
- provides access to liquidity information
- handles operational shutdowns and problems

Norges Bank has started work on modernising the Bank's core systems connected with settlement activities. The Bank will define the elements that are necessary to be able to perform central bank functions in the area. Part of the process is a comparison of Norges Bank's system with settlement systems in other countries.

Norges Bank is the settlement bank for cash settlements associated with securities transactions cleared in the Norwegian Central Securities Depository (VPS). The Act relating to Payment Systems, etc. extends the legal protection for securities clearing and settlement agreements, thus reducing the risk involved in securities settlements.

A proposal for new regulation of the registration of financial instruments (NOU 2000:10) will make it legally possible to execute both gross settlements and several daily net settlements. The bill has not yet been presented to the Storting. Norges Bank and VPS have started drawing up technical specifications for a solution that allows for several net settlements daily. The introduction of several secure settlements daily (ie settlements where debit positions have been checked for cover) will result in more efficient execution of settlement and provide the basis for a gross settlement system (RTGS) in the future.

Norges Bank considers it important that securities settlements are executed with a low level of risk for participants. Schemes that safeguard delivery versus payment (DvP) between brokers and between brokers and investors contribute to reducing risk. Today's securities settlement system, VPO, has DvP, but only covers settlements between brokers and banks that operate as brokers. Settlements between brokers and investors are currently executed outside VPO and therefore do not include a DvP solution. Therefore, banks, the BBS and the VPS have started preliminary work to evaluate a DvP solution at the investor level. Such a scheme will eliminate credit risk between brokers and investors.

Risk in the financial sector

In order to increase the efficiency of Norges Bank's contingency work in the financial sector and to take account of the structure and vulnerability of a modern payment system, Norges Bank's Executive Board decided in October 2000 to establish a new Contingency Committee for Financial Infrastructure. The Contingency Committee, which replaces several other contingency bodies in the financial sector, has two main responsibilities: 1) to establish and coordinate measures to prevent and resolve crisis situations and other situations that may result in major disruptions in the financial infrastructure, and 2) to coordinate contingency work in the financial sector,

including the preparation and implementation of warning plans and contingency measures in connection with national security crises and war, based on the civil defence and emergency planning system. The Contingency Committee's management and secretariat are in Norges Bank and include representatives of government bodies and key participants in the financial sector.

2.3 Important events in the Norwegian market

In 2000, a number of market innovations provided the Norwegian public with new options for executing payments. Customers can use a number of channels to contact their banks and may select the payment medium that is most appropriate for the individual payment situation.

It is now possible to access account balances, execute payments, apply for and establish loans, and trade securities electronically. All that is required is a PC with an Internet connection and an account at one of the banks. The most important development is the exponential growth in the number of e-banking customers, a trend that has persisted since 1999. The number of e-banking customers now exceeds 1 million. New products are also being introduced.

The most important new product is e-billing, which has been introduced in Norway by BBS and EDB Fellesdata in cooperation with the banks and a number of companies. EDB Fellesdata began pilot operation of its system in June 2000 and BBS initiated its pilot project in November 2000. E-billing is an extension of banks' current offers to e-banking customers and began normal operation in the spring of 2001. E-billing will further increase the efficiency of Internet payment services. The solution cuts costs for banks and companies since the volume of paper-based giros can be reduced. Customers spend less time executing a payment with e-billing than with other types of giros. This system may increase the number of Internet payments since e-billing is easier for the bank customer to use than today's giro and it is also a cheaper way for companies to collect payments. E-billing has been introduced in other countries with considerable efficiency gains in some places and the service has also become very popular.

The paper-based OCR bill handling system is gradually being replaced by a digital system called e-giro. BBS is the supplier, but individual companies gain access to the service through their bank connections. The idea is that paper copies of information that is sent between payer and payee should be unnecessary. Electronic signature technology is being used to ensure security.

Since the autumn of 1999, it has been possible to order and pay for a number of products and services using a WAP mobile telephone. Payment, including fees, is debited directly either from the user's bank account or the user's prepaid telephone card. Customers can also check bank balances or transfer money between accounts using a mobile telephone. This service is reminiscent of telebanking, which has been in use for many

years, but the user interface is different and the service includes a number of new features.

In Norway, plans to introduce e-money have focused on card-based e-money. This type of e-money uses an electronic chip that is embedded in a card to make payments at a payment terminal.

The Armed Forces and Mondex Norge conducted a pilot project in the use of e-money among military recruits in the autumn of 2000. The Mondex system allows the transfer of monetary units from one card to another, and it is possible to disburse monetary units from the terminals used.

In 2000, Canal Digital planned to start a pilot project with Proton e-purse cards. The pilot project has been delayed, however. The plan is to use the card on decoders attached to satellite television to purchase films. Proton uses chip and reader systems that are compatible with the EMV standard (standard for integrated circuit cards established by Europay, MasterCard and Visa). The pilot project is in principle an open system, ie it should be possible to use the units in other places where the Proton units are accepted. The project will become permanent if it is profitable enough and may thus be the first e-money system in general use in Norway.

3 The Norwegian payment system

This chapter provides an overview of the main features of the Norwegian payment system. The payment system comprises the cycle of events from the initiation of a customer payment until settlement, when funds are at the disposal of the payee. We differentiate between *payment media* with intrinsic value, ie cash, and *payment instruments* that facilitate the use of deposit money. The payment system handles transactions on behalf of customers and transactions between banks. The same payment instruments and channels may be used to a certain degree for both customer and interbank transactions.

3.1 The cash system

The outstanding balance of banknotes and coins in circulation provides the basis of the cash system. Since banknotes and coins are issued by Norges Bank and are legal tender, cash settlement cannot be denied.

Cash enables final settlement on the spot without an intermediary. This feature makes cash an attractive and flexible means of payment, especially for small-value payments. However, banknotes and coins can also be used in situations that otherwise involve the use of deposit money. A customer can pay bills or make deposits directly into an account and can withdraw cash from his or her own account or cash in a money order. A deposit or withdrawal of cash from the bank decreases or increases the amount of cash in circulation.

Norges Bank's cash handling

Norges Bank's departmental structure and the channel for distributing cash between Norges Bank and banks/post offices underwent considerable changes in 2000. The primary purpose of these changes has been to improve the efficiency of the bank's execution of its statutory responsibilities in the area of cash handling as well as to differentiate more clearly between these tasks and other business activities. The business activity consists largely of cash-handling services and distribution of cash from Norges Bank's regional branches to banks. At a meeting on 6 September 2000, Norges Bank's Supervisory Council decided to close one cashier office and five of the 13 regional branches and to organise the remaining regional branches in a business unit operated on a commercial basis. Together with Norges Bank, Den norske Bank ASA, Gjensidige Nor Sparebank, SpareBank 1 Gruppen AS, Terra-Gruppen AS, Fokus Bank ASA and Nordlandsbanken ASA established a joint limited company for cash handling on 1 July 2001. The mission of the new company is to ensure secure, efficient and profitable solutions for cash handling. The company will perform cash handling services for banks in Norway and execute statutory central bank functions for Norges Bank. In addition, the Royal

Box 3.1 The cash flow cycle

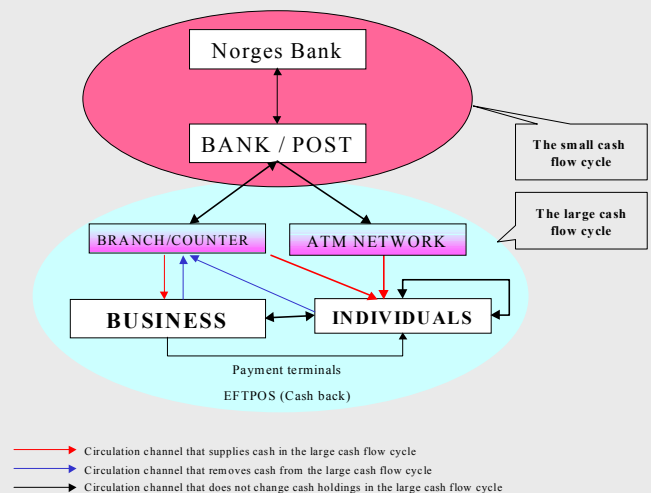
Using cash requires no special agreements or infrastructure, but acquiring cash and converting deposit money into cash assumes the existence of an infrastructure. The chart below shows the most important aspects of the cash system infrastructure. The chart differentiates between what we have called the small cash flow cycle and the large cash flow cycle.

The small cash flow cycle (above) between the central bank and banks/post offices comprises the system for producing, replacing, processing and supplying cash. Banks turn in excess cash holdings to Norges Bank and requisition cash when needed. Norsk kontantservice AS has responsibility for cash handling on behalf of Norges Bank. This responsibility includes counting and control of cash for crediting/debiting of banks' accounts in Norges Bank and destruction of banknotes that are removed from circulation, including control to verify authenticity and quality. Norsk kontantservice AS also provides services for private banks, including control and sorting of banknotes that have been turned in and will be put back in circulation. Nearly all banks have accounts in Norges Bank in connection with cash deposits and withdrawals.

In the large cash flow cycle (below), banknotes and coins are in use and circulate, primarily between banks, enterprises and households/individuals. Bank branches, ATMs and shops with payment terminals are important channels for supplying cash. The red arrows show cash that enters the large cash flow cycle by way of withdrawals from ATMs and banks/post offices. Both these withdrawals and cash back in connection with goods purchases represent conversion from deposit money to cash. Cash back in connection with goods purchases does not supply

new banknotes or coins to the large cash flow cycle because the cash is withdrawn from shops that are already part of this cycle. The blue arrows show cash on its way out of the large and into the small cash flow cycle, ie enterprise and household sectors' payment of cash to banks.

The black arrows represent transactions that keep cash in circulation among members of the public. These transactions include payments between individuals, from an individual to a shop/business in connection with the purchase of goods and services and payments from shops to individuals in connection with giving change and cash back. Findings in recent years indicate that person-to-person payments represent an important channel of cash circulation. These payments are largely related to activities in the unregistered segment of the Norwegian economy. Notes and coins may also be used for storing wealth among members of the public. This reduces the movement of cash from the large to the small cash flow cycle.



Mint in Kongsberg was reorganised to become a joint limited company fully owned by Norges Bank as from 1 January 2001.

This joint limited company will continue the activities that were previously performed by Norges Bank in Kongsberg. As from the summer of 2000, Norges Bank has also increased the prices and expanded the scope of pricing for its cash handling and distribution services.

Access to cash

Chart 3.1 shows developments in the number of bank branches and post offices that offer cash services in Norway. After a considerable decline in the number of post offices in the period

Chart 3.1 Number of bank and post office branches 1989-2000

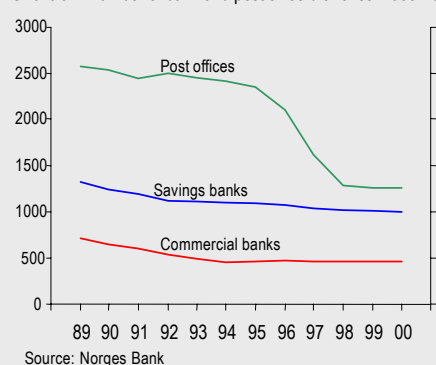


Chart 3.2 Number of ATMs 1988-2000

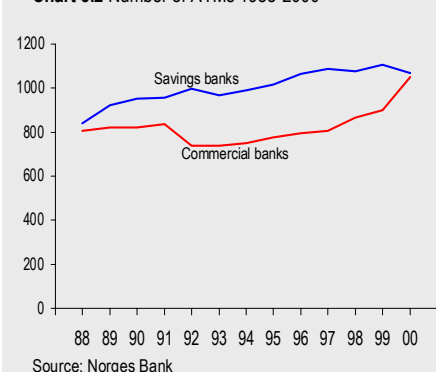
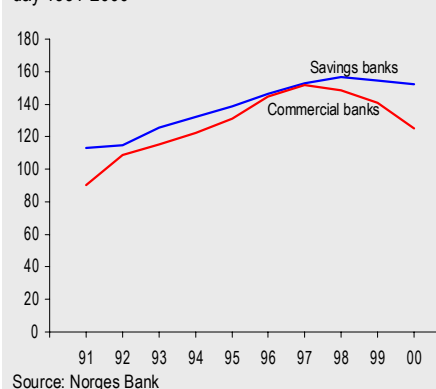


Chart 3.3 Average number of withdrawals per ATM per day 1991-2000



The money-holding sector comprises households, non-financial enterprises and local government administration as well as financial enterprises other than banks and state lending institutions.

Deposits in a transaction account are defined as deposits in NOK and currency which may be converted immediately to notes and coins or from which direct payments may be made without incurring any costs other than normal transaction and setting-up fees.

1995-1998, developments have levelled off. In 2000, 2 725 post offices and bank branches provided banking services.⁴

The number of ATMs increased most substantially in the mid-1980s. In the 1990s, growth was moderate, but from 1999 to 2000 the number of ATMs increased by nearly 6 per cent. The sharp rise is due, among other things, to the fact that a number of banks have reduced the possibility of withdrawing money at the counter at the same time as they have increased the number of ATMs in or outside the bank. A number of banks have also opened unstaffed “bank offices” with deposit automats, ATMs and the possibility of paying giros electronically. At the end of 2000, there were 2 119 ATMs in Norway, of which 1 093 were owned by savings banks and 1 026 were owned by commercial banks (see Chart 3.2). Since the Norwegian ATM system is based on a common infrastructure, all bank customers can use all ATMs. This collaboration reduces the need for further expansion of the ATM network. The emergence of payment terminals that allow for “cash back” in connection with goods payment also reduces the need for additional ATMs. Chart 3.3 shows that the number of withdrawals from each ATM has stagnated and declined in the last few years, thus confirming a limited need for new ATMs.

The use of payment cards has increased rapidly in Norway and replaced the use of cash to a considerable extent. “Cash back” in connection with goods purchases encourages the use of cash, especially for small-value payments. On average, cardholders withdrew cash about once every four times they used their payment cards in 2000.

3.2 The deposit money system

A bank account with a positive balance or an overdraft facility provides the basis for payments with deposit money. The cash balance in transaction accounts belonging to individuals and businesses (money-holding sector) was NOK 331 billion at the end of 2000.

The deposit money system includes all systems based on standard terms for transferring money from or between customer accounts in banks. Payment transfers include all transfers of payment media from a payer to a payee. Payment transfers involve three parties: the payer, the intermediary and the payee, and three processes: the registration phase, the clearing/settlement phase and the reporting phase. When the transaction is registered, the signature and, in most cases, cover is checked and a receipt is sent. The second phase, clearing and settlement, is discussed more fully in section 3.4. In the third phase, information about the completed transaction is sent to the payee and in some cases to the payer as well.

The relationship between the parties in the payment transfer process will vary according to the payment instruments and payment functions used. The payment system executes four basic payment functions:

⁴ Cash withdrawals may also be mediated by approximately 2 400 rural postmen.

- Transfers from one account to another
- Cash deposits into an account
- Transfers from an account into a money order
- Cash deposits transferred by money order via a bank to a third party

Banks play a key role in the payment system because most payment orders are executed by using deposit money or by paying in cash at the bank. At the end of 2000, there were 143 banks and 9 branches of foreign banks in Norway. Payment transactions are settled either in a private settlement bank or in Norges Bank. Other important contributors are data processing centres, which, among other things, handle clearing for the banks. EDB Fellesdata⁵ and the Banks' Payment and Central Clearing House (BBS) are the largest data processing centres.

3.3 The system for using deposit money

Using deposit money in the payment system requires the use of different payment instruments. Below, we discuss the payment instruments that are most commonly used by bank customers. Some of these payment instruments (giro and SWIFT) may also be used for interbank transactions.

Giro

Giro (credit transfer) services have developed in step with technological advances and are now available in both paper-based and electronic form. A giro payment can be initiated by a visit to the bank, by sending a giro to the bank or BBS (mail giro) or by means of telebanking or e-banking. Accessibility through a number of channels has allowed the giro to maintain its position as the dominant instrument for paying bills.

In theory, using giro services requires no special agreements. Using *electronic* giro services, however, requires a separate agreement that includes a security scheme. Banks must also install a terminal at companies that use company terminal giros/remittances. In recent years, the number of e-banking agreements has increased sharply, and at the end of 2000, e-banking customers numbered more than 935 000. The number of telebanking customers was about the same at this time.

Paper-based giro services can be used without a special agreement, and can also be used without having a bank account when payment is made in cash. The most widespread paper-based giro service today is the mail giro, which is based on a special agreement between the bank and the user. The payer sends the giro directly to BBS or Postbanken, which takes responsibility for all processing. The bank's introduction of the mail giro in 1992 resulted in more efficient processing of the banks' paper-based giros. New OCR methods have also

⁵ EDB Fellesdata is the result of a merger between EDB Business Partner ASA, which owned Telenor Novit A/S (subsequently EDB Novit AS), and Fellesdata AS in the spring of 2000.

increased the efficiency of mail giros. At year-end 2000, 3.1 million customers had mail giro agreements with their banks.

Most giro payments entail transferring funds from payer to payee. These transactions are also referred to as credit transfers because the payer is asking to have the payee's account credited. Agreement-based giros and autogiros are based on the opposite principle, ie the payer agrees that bills from a specific payee are debited automatically from his account. These giros are referred to as direct debits because the payee debits the payer's account. At year-end 2000, there were 3.5 million direct debit agreements.

A debit card is tied directly to the user's bank account and allows the card user to utilise the funds available in his account. The amount available may also include an overdraft facility connected to the account or to the card agreement. The amount drawn is debited immediately from the user's account.

A charge card is not connected to an account. The user receives an invoice for use, eg during the previous month, which is paid by giro (direct debit). The user has credit in the form of delayed payment, whereas the payee receives settlement from the card company.

A credit card is not connected to an account and the user is granted credit up to a certain amount. The credit is repaid according to a repayment plan.

Payment cards

Bank cards allow cardholders to pay by card at the point of sale, to receive cash back at the same time if so desired, and to withdraw money from ATMs. Bank cards are directly linked to the customer's bank account (debit cards). In Norway, most transactions are made on-line and cover is checked automatically during the registration phase. At the end of 2000, 4 021 000 bankcards were in use in Norway, an increase of nearly 7 per cent from the year before (see Chart 3.4). This represents more than one bank card per person aged 15 or above. Most bank cards are combined cards, ie they have other functions in addition to being a bank card. The most common combination is bank card and international payment card, but other combinations are increasingly being used.

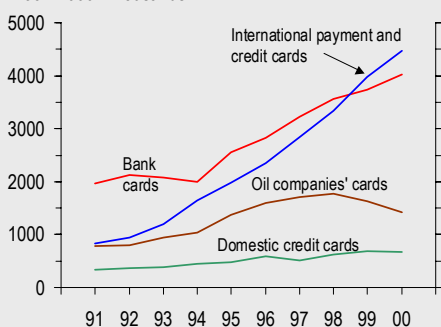
Four *international card companies* are active in Norway: Diners Club Norway AS, Europay Norge AS, VISA Norge AS and DnB Kort AS (issues the American Express card). A total of 4 465 000 cards have been issued in Norway and the number has increased steadily over the last 10 years. Most Norwegian VISA cards are debit cards in the sense that the amount is debited directly from the customer's bank account, ie no bill or notification is sent.⁶ Other VISA cards (Gold, Premier, etc.) and the other three card companies' cards are primarily charge cards that are not directly tied to a bank account.

The oil companies were the first to issue payment cards in Norway. These cards can only be used in the oil companies' payment terminals and the user normally receives a bill once a month. At year-end, payment cards issued by oil companies and in circulation in Norway numbered 1 429 000.

Domestic credit cards are issued primarily by GE Capital Bank and Gjensidige NOR (Union Bank of Norway) and the most common cards are Kjøpekort, Her og Nå and Cresco Card. There are relatively few of these cards in circulation and growth in the number of domestic credit cards is modest. Most domestic credit cards provide a limited line of credit, which must be repaid in instalments.

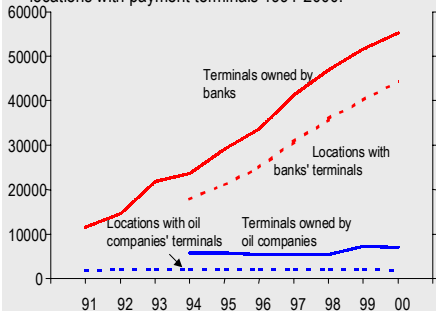
Bank cards may be used in 65 326 *payment terminals* at 47 434 locations. The number of terminals has increased by 11 per cent and the number of locations by a good 12 per cent since 1999 (see Chart 3.5). Most bank card terminals are owned by

Chart 3.4 Number of payment cards issued at year-end 1991-2000. Thousands



Source: Norges Bank

Chart 3.5 Number of payment terminals and number of locations with payment terminals 1991-2000.

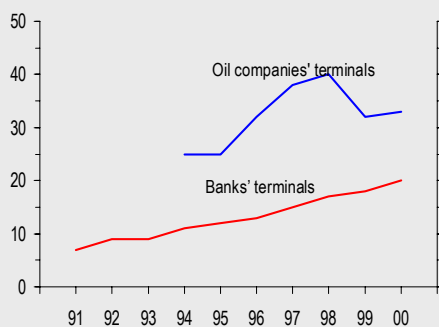


In addition, grocery stores own 3025 terminals which are located in 916 stores.

Source: Norges Bank

⁶ In most other countries, VISA functions solely as a charge card.

Chart 3.6 Average number of transactions per payment terminal per day 1991-2000



Source: Norges Bank

BBS, but some supermarket chains also own their own terminals. Banks' terminals usually accept international payment and credit cards and domestic credit cards in addition to bank cards. Oil companies own their own terminals, which accept bank cards and international payment and credit cards in addition to their own cards. VISA owns a number of terminals, which are primarily located in restaurants, cafés and taxis. These terminals accept VISA cards and most other international credit cards. The number of user sites is growing and the range of sites with payment terminals, which has primarily included supermarkets, hotels and restaurants, is expanding to include other kinds of service companies. Payment terminal use is increasing more sharply than growth in the number of terminals, so that on average each terminal was used more frequently in 2000 than in 1999. Measured on a daily basis, the oil companies' terminals are still used more often than banks' payment terminals (see Chart 3.6).⁷

Other payment instruments

Cheques became popular when it became more common for employers to transfer salaries directly to employees' bank accounts at the end of the 1960s. Both businesses and individuals used cheques, and in the 1970s and 1980s cheques were used fairly extensively. Cheques may be used to pay bills, to pay at the point of sale and to make payments between individuals since no special agreements or infrastructure are required. In Norway, however, the giro has been the predominant instrument for paying bills. As ATMs and EFTPOS became more widespread and using cheques became more expensive, the use of cheques has declined sharply.

SWIFT (Society for Worldwide Interbank Financial Telecommunications) is an electronic network (system) for transmitting messages. SWIFT operates worldwide and is the most important messaging system for financial transactions. SWIFT is used for both customer transfers and interbank transactions. SWIFT transfers are most suitable for large-value payments where the time factor is crucial. Thus, the majority of SWIFT transfers are interbank transactions. SWIFT has more than 3000 members and 7000 users worldwide. SWIFT has 17 Norwegian members and 9 branches of foreign banks are members through their parent bank. In addition, five Norwegian institutions are registered as users, making a total of 31 SWIFT users in Norway.

3.4 Clearing and settlement of deposit money transactions

When payer and payee have accounts in the same bank, settlement can be executed locally by directly debiting and

⁷ It is assumed that banks' payment terminals may be used 270 days a year while the oil companies' terminals may be used 360 days a year.

crediting accounts. When payer and payee have different banks, the banks use a clearing house and a settlement bank to execute the transaction.

Participants in clearing and settlement

As a rule, all banks with accounts in Norges Bank have access to Norges Bank's Settlement System (NBO) and Norges Bank handles final settlement of payment transactions. NBO is responsible for settlement of both gross transactions and netting results through the banks' accounts in Norges Bank. Banks must have cover for all transactions that go through NBO and therefore the system provides up-to-date liquidity information to the individual banks. To facilitate payment settlements, Norges Bank provides loans to banks throughout the day. In keeping with international practice, Norges Bank requires collateral security from the banks for these loans.

Most small banks choose to settle retail payments (ie most customer transactions) in another bank. Banks that settle transactions in Norges Bank are often described as level 1 banks, whereas banks with settlement in another bank are referred to as level 2 banks. Banks make use of data processing centres that clear transactions and provide other IT-related services for banks. Following the merger between Novit and Fellesdata, most level 2 banks use EDB Fellesdata as their clearing house, whereas BBS handles clearing for level 1 banks. BBS is the operating unit for the Norwegian Interbank Clearing System (NICS) which is the banks' jointly owned system for clearing and liquidity information.

Besides settlement of payment transactions, there is also separate settlement of securities and derivatives trades. The Norwegian Central Securities Depository (VPS) and the Norwegian Futures and Options Clearing House (NOS) are important participants in these settlements.

Clearing and settlement

Most ordinary customer payments (giro, payment card and ATM transactions as well as some other customer transactions) are settled during retail netting. This is multilateral netting, ie all transactions involving payer and payee with different banks are netted. A bank's net position vis-a-vis all other banks combined is calculated and transferred/credited in the settlement. Multilateral net settlement reduces the amounts transferred between banks and thus minimises banks' liquidity requirements. NICS retail settlement is performed twice daily in Norges Bank. The figures in Chart 3.1 show that many transactions in the retail settlement entail fairly small amounts and that netting reduces the amount sent to settlement by 75 per cent.

NICS also transfers information about payer, amount of payment, reference number/customer identification number (CID) etc from the payer's bank, via the computer centre to the payee's bank.

Interbank transactions are settled in the NICS-SWIFT net settlement or in SWIFT-RTGS, which is real-time gross

Netting is a conversion of orders between two (bilateral) or more (multilateral) participants (banks) into an overall net obligation or a net claim.

Settlement is the final transfer of money (or financial instruments) from payer to payee.

Net settlement is the transfer of money or financial instruments after netting.

Gross settlement is a transfer of money or financial instruments without netting. The entire amount is transferred.

Table 3.1 Main aggregates in the various payment settlements, 2000 (1999 figures in parentheses)*

	SWIFT-RTGS	SWIFT netting	NICS retail netting
No. of transactions per day, average	282 [302]	4 344 [4 309]	2-3m [2-3m]
Amount per day before netting (NOK bn)	123 [125]	17 [17]	20-25 [20-25]
Amount per day after netting (NOK bn)	123 [125]	4 [5]	4-5 [4-5]
Average amount per transaction (1000s of NOK)	436 000 [413 000]	3 900 [4 000]	10 [9]

*In addition, about NOK 2bn goes daily to securities settlement in Norges Bank.

Sources: Norges Bank, NICS, VPS

A queuing function and an anti-gridlock function have been built into gross settlement to ensure that liquidity problems do not halt the settlement. The anti-gridlock function in NBO automatically calculates positions in the banks' queues against one another. If there is cover for the net position of several transactions in the queue, these will be batched together for settlement.

settlement. Most SWIFT payments under NOK 100 million (may also include some customer transactions) are settled on the basis of NICS-SWIFT netting. There are six NICS-SWIFT multilateral nettings daily, followed by net settlement in Norges Bank. Twenty-two banks participate in NICS-SWIFT. While an average of NOK 17bn is sent to clearing, just under NOK 4bn is sent to settlement daily.

SWIFT payments in excess of NOK 100m and other specially marked transactions are settled one by one in SWIFT-RTGS in Norges Bank. In practice, this settlement only entails interbank transactions. Since the settlement is conducted in real-time 24 hours a day, transactions are settled as they come in, assuming that the payer has cover in his account or has an unutilised borrowing facility with Norges Bank. If a bank does not have cover, the transaction is placed in a queue until it has cover. About NOK 125bn, comprising relatively few high-value transactions, is transferred through SWIFT-NICS daily. Participation in this settlement assumes that the banks are connected to the SWIFT system, and this is only the case for large and medium-sized banks. However, other banks can also send gross transactions to Norges Bank, but they must use a different messaging format. Unlike payments sent in SWIFT format, which are settled automatically and immediately in Norges Bank, these transactions are settled manually.

Securities trades are cleared in the Norwegian Central Securities Depository (VPS). Securities trades are completed in VPS, whereas financial settlement is executed by Norges Bank. VPS registers and clears transactions and nets positions for the settlement of securities trades, ie equities and primary capital certificates, bonds and short-term papers. VPS also clears options trades on behalf of the Norwegian Futures and Options Clearing House (NOS). VPS handles both the securities trade and the financial settlement of the trade. The securities trades and financial transactions involved in the trades are settled once daily.

Banks that participate in securities settlements may use Norges Bank's general collateralised borrowing facility. Brokerage firms that are not banks have their own settlement accounts in Norges Bank, but they do not have borrowing facilities. Brokerage firms that participate in settlements must therefore provide a bank guarantee for settlements in Norges Bank.

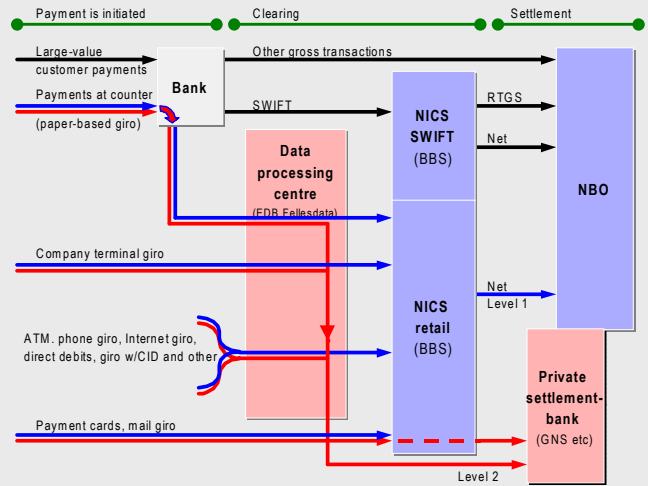
NOS is the settlement centre for all trades involving options and futures, both on the Oslo Stock Exchange and in the OTC market, as well as unlisted bonds and certificates. NOS is the main counterparty in the settlement between brokers, which means that NOS serves as the intermediary between buyer and seller at the broker level. NOS is also the guarantor in the event of a default on the part of the final customer and settlement counterparty.

Box 3.2 Clearing and settlement of customer payments in Norwegian kroner

The figure shows the main features of the clearing and settlement structure for payments involving a payer and payee with different banks. The figure does not show the fairly extensive flow of information in connection with these payments. The red arrows and boxes represent transactions from customers (retail payments) in level 2 banks, while the blue arrows and boxes show transactions from level 1 bank. As we see from the figure, most transactions go directly from payer to payer's bank's data processing centre. The data processing centre checks the signature and account cover before the transaction is sent to a clearing house for netting. After netting, level 2 bank transactions are sent to a private settlement bank and level 1 bank transactions are sent to Norges Bank for settlement. Mail giros and payment card transactions go directly to BBS even if the payer is a customer in a bank that uses a different data processing centre. BBS sends the settlement information to Norges Bank and the private settlement banks. All giro payments that use

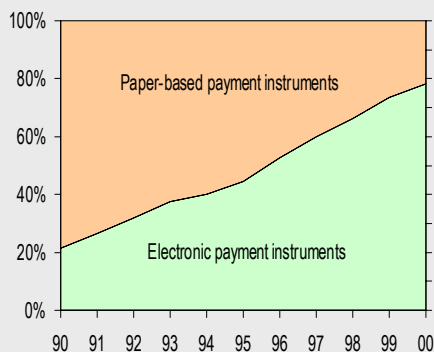
customer identification numbers go via BBS before going to settlement.

The figure also shows SWIFT payments and other large-value payments, both customer payments and interbank transactions (black arrows).



4 Transactions and turnover in the payment system

Chart 4.1 Use of manual and electronic payment instruments 1990-2000. As per cent of total transactions

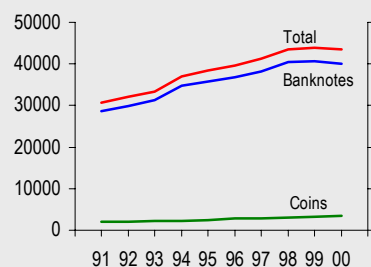


Source: Norges Bank

Factors that may explain the demand for cash

- Deposit rates
- Inflation (decline in value)
- Need to make transactions
- Costs connected with acquiring cash
- Costs connected with the use of other payment instruments
- Technical changes in the infrastructure

Chart 4.2 Cash in circulation 1991-2000. Yearly average in millions of NOK



Source: Norges Bank

Norges Bank has compiled statistics about important payment system trends since 1987. The main trends are discussed in this chapter, while tables in the statistical annex contain more detailed information.

The main trend this year is that the number and share of electronic payment transactions continue to rise as both the number and share of paper-based payment transactions fall (see Chart 4.1). The number of payments made over the Internet doubled from 1999 to 2000, while growth in telebanking transactions came to a halt. The number of mail giros also declined for the first time.

4.1 Developments in the cash system

Notes and coins are used to make payment transactions and to store wealth. Norges Bank issues notes and coins to the extent required to cover demand and to replace notes that have been withdrawn from circulation and destroyed due to wear and tear. Developments in outstanding holdings of notes and coins provide the best indication of the demand for cash in Norway.

It is reasonable to assume that demand for notes and coins reflects general economic developments and especially developments in private consumption and inflation and interest rate trends. The demand for cash may also be related to fees and other costs connected with the acquisition of cash and the use of competing payment media. Changes in the public's payment preferences, new payment solutions and other technological changes in the payment system may also affect the demand for cash. All the above-mentioned factors combined may explain developments in cash holdings and the use of cash as compared with the use of deposit money.

Notes and coins

The value of cash in circulation has increased every year in the 1980s and 1990s, but the increase seems to have levelled off since 1998. The value of cash holdings decreased slightly in 2000, so that on average NOK 43.6bn in notes and coins was in circulation, the same as in 1998. In 2000, notes accounted for 92 per cent of the value and coins for 8 per cent (see Chart 4.2). The value of cash holdings in 2000 was about 50 per cent higher than in 1990. In 2000, each Norwegian had an average of NOK 9 700 in cash compared with NOK 9 850 in 1999 and NOK 7 000 in 1990 (see Table 4.1). In constant 1990-kroner, each Norwegian had on average nearly NOK 700 more in cash holdings in 2000 than in 1990. The real increase in cash holdings in the 1990s followed a fairly large drop in the real value of cash holdings throughout the 1980s. Banks' deposit rates were low in the period 1993-1998 but rose somewhat in the summer of 1998. The alternative cost of holding cash thus

Table 4.1 Key figures for cash holdings, 1990-2000

	1990	1995	1999	2000	1990-2000 % change
Cash holdings (NOK billion)	29.7	38.4	43.8	43.6	47
Cash holdings in constant 1990-kroner (NOK billion)	29.7	34.1	35.9	34.6	16
Cash holdings per capita (NOK)	7 016	8 821	9 861	9 675	38
Cash holdings per capita in constant 1990-kroner	7 016	7 838	8 068	7 679	9
Nominal deposit rates, banks*	8.9%	4.0%	4.4%	5.8%	
Consumer price index, annual change	4.1%	2.4%	2.3%	3.1%	

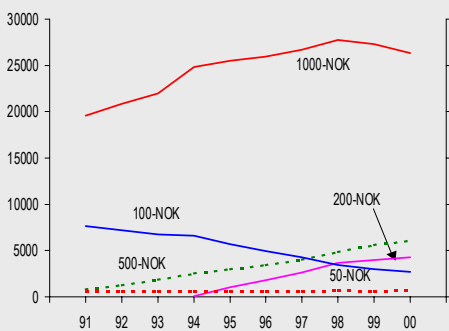
Nominal interest on total deposits (ordinary terms and special terms) as at 31 December

Source: Norges Bank, Statistics Norway

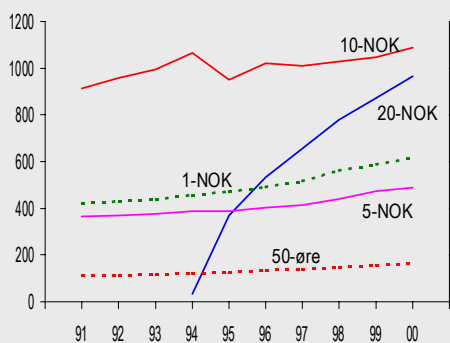
Table 4.2 Cash holdings in relation to some key aggregates, 1990-2000

	1990	1995	1999	2000	1990-2000 % change
Cash holdings (NOK billion)	29.7	38.4	43.8	43.6	47
Mainland GDP (NOK billion)	609	790	998	1 054	73
Cash holdings in %	4.9	4.9	4.4	4.1	
Private consumption in Norway (NOK billion)	336	435	548	578	72
Cash holdings in %	8.8	8.8	8.0	7.5	
Money supply (M1) (NOK billion)		212	316	363	
Cash holdings in %		18	14	12	

Source: Norges Bank, Statistics Norway

Chart 4.3 Banknotes in circulation by denomination 1991-2000. Yearly average in millions of NOK

Source: Norges Bank

Chart 4.4 Coins in circulation by denomination 1991-2000. Yearly average in millions of NOK

Source: Norges Bank

increased in 1998. In the last half of the 1990s, the value of cash holdings increased considerably less than mainland GDP, private consumption and the money supply (ie the total of cash in circulation and deposits in transaction accounts in Norwegian banks and in branches of foreign banks in Norway) (see Table 4.2). The decline in cash holdings in relation to private consumption may indicate that cash is being used less frequently for payment transactions and may have lost a share of the market to deposit money. The cash share of the money supply has also declined, from 15 per cent in 1995 to 12 per cent in 2000. Higher alternative costs due to higher deposit rates in the last three years combined with growth in the use of competing payment media, primarily payment cards (see section 4.2), may explain the levelling off of cash holdings since 1998.

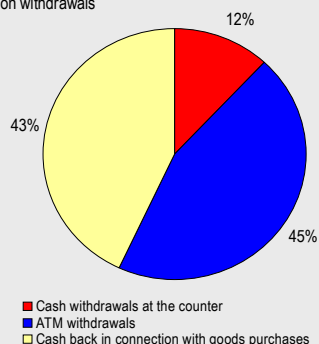
The different denominations' share of the value of notes in circulation has changed considerably in the period 1991-2000 (see Chart 4.3). Most pronounced are the decline of the 100-kroner note and the increase of the 500-kroner and 200-kroner notes. The value of 100-kroner notes in circulation has dropped by more than 50 per cent in the last 10 years. The 200-kroner note was introduced in 1994, and in 2000, the average value of 200-kroner notes in circulation was NOK 4.3bn. The average value of 500-kroner notes in circulation rose from a good NOK 800m in 1991 to NOK 6.1bn in 2000. Norges Bank has encouraged increased use of 200-kroner and 500-kroner notes in ATMs as opposed to NOK 100-kroner notes in order to reduce the number of notes necessary to meet the demand for cash. With a 1.8 per cent share in 2000, 50-kroner notes account for a small, but stable share of the notes in circulation. The 1000-kroner notes account for the largest share by value of notes in circulation, although the share has declined from 69 per cent in 1998 to 66 per cent in 2000. The 1000-kroner note's large share is probably due to the fact that the note is used as a means of storing wealth and for transactions in the unregistered sector of the economy.

The value of coins in circulation has increased steadily each year for the last 20 years. The average annual value of coins in circulation was just under NOK 3.5bn in 2000, an increase of 5.5 per cent compared with 1999. The 20-kroner coin, which was introduced in 1994, is primarily responsible for the increase in coins in circulation (see Chart 4.4).

Acquisition of cash

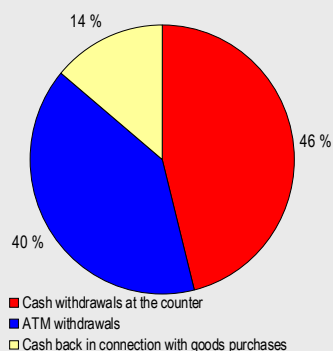
This year, for the first time, Norges Bank presents almost complete statistics on the number and value of cash withdrawals in Norway. In 2000, we registered about 237m cash withdrawals broken down by cash withdrawals at the counter, from ATMs and as cash back from payment terminals. Cash back in connection with goods purchases has become an important channel for acquiring cash (see Chart 4.5) and accounts for 43 per cent of all cash withdrawals in Norway. In 2000, for the first time, the number of ATM withdrawals did not increase year-on-year. ATM withdrawals numbered 106m, comprising 45 per cent of all cash withdrawals in 2000. At-the-counter cash

Chart 4.5 Cash withdrawals in Norway in 2000. Number of withdrawals by channel. Total number in 2000 : 236.7 million withdrawals



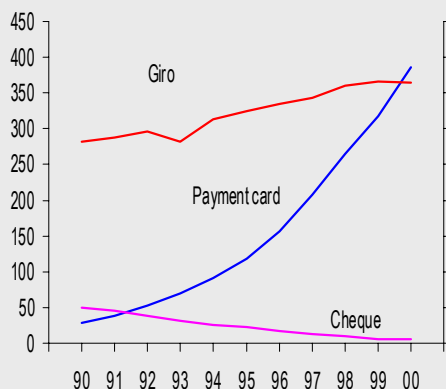
Source: Norges Bank

Chart 4.6 Cash withdrawals in Norway in 2000. Turnover by channel. Total value in 2000: NOK 264.2 billion.



Source: Norges Bank

Chart 4.7 Payment instruments 1990-2000. In millions of transactions



Source: Norges Bank

withdrawals numbered just under 28m, of which 56 per cent were made in commercial banks and 44 per cent in savings banks. There is considerable uncertainty about the statistics on cash withdrawals before 2000.

In 2000, the value of cash withdrawals in Norway was NOK 264bn (see Chart 4.6). By comparison, private consumption in Norway in 2000 was about NOK 580bn. NOK 121bn was withdrawn at the counter in banks, of which 60 per cent in commercial banks and 40 per cent in savings banks. The value of ATM withdrawals was NOK 106bn in 2000, of which 46 per cent was withdrawn from commercial banks' ATMs and 54 per cent from savings banks' ATMs. The value of cash back in connection with goods purchases was NOK 37.1bn in 2000.

The three channels for withdrawing cash in Norway seem to cover different needs. Cash back is used to withdraw small amounts to cover the public's need for cash to cover small-value transactions. The average value of this type of withdrawal was NOK 360 in 2000. ATMs are used for larger withdrawals to cover the public's need for cash for several days' transactions. The average value of ATM withdrawals in 2000 was about NOK 1 000. Cash is withdrawn at the counter less frequently and these withdrawals are sizeable. The average value of cash withdrawals at the counter in 2000 was about NOK 4 300.

The number of cash withdrawals at the counter has declined by 50 per cent since 1996, while the average value of these withdrawals is increasing slightly. According to our estimates, the combined value of cash withdrawals at the counter in 2000 was around 40 per cent less than in 1996. The number of ATM withdrawals increased slightly in the period 1996-2000. The value of ATM withdrawals seems to increase in line with growth in private consumption, and in 2000 the value was about 25 per cent higher than in 1996. The number of cash withdrawals in connection with goods purchases was insignificant in 1996. In 2000, the number of cash withdrawals in connection with goods purchases was almost as high as the number of ATM withdrawals. On the whole, our calculations show that the number of cash withdrawals increased rapidly in the period 1996-2000, whereas the total value of these cash withdrawals did not change substantially in the period.

However, Norwegians' use of the three cash withdrawal channels has changed in the last five years. Cash withdrawals from shops' payment terminals do not incur any extra fees and therefore cost less than ATM withdrawals and withdrawals at the counter, in terms of both time and travel costs. This may largely explain the change in the public's behaviour in favour of more frequent withdrawals of smaller amounts and in particular cash back at payment terminals in connection with goods purchases.

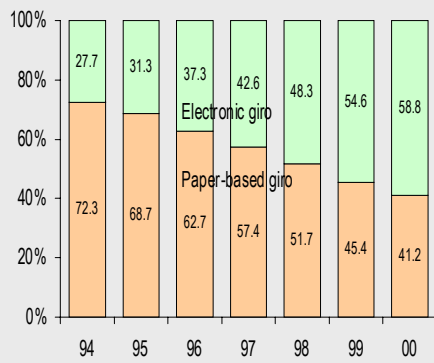
4.2 Use of deposit money

Giro

Giro payments (mainly credit transfers) account for 95 per cent of the total amount that passes through the payment system, ie

Chart 4.8 Giro services 1994-2000.

Transactions as percentage share



Source: Norges Bank

NOK 5 284bn. Of all non-cash payments, 48 per cent are made by giro. In 2000, payment cards were used more frequently than giros for the first time.

The transition from paper-based to electronic services is a trend that has developed over several years and continued in 2000. Use of paper-based giros has declined in recent years and this trend became more pronounced from 1999 to 2000. This is presumably because both the public and the banks find that the electronic solutions are faster, easier to use and less expensive than paper-based services. Chart 4.8 shows that the share of electronic giro payments has increased continuously, reaching 59 per cent in 2000. The transition increases the efficiency of the payment system.

The electronic giro services include the use of terminals in businesses, institutions and households, as well as various forms of direct debit. The number of payments made by electronic giro increased by 5 per cent to 213m transactions. From 1999 to 2000, the value increased by 9 per cent to NOK 4 409bn, equivalent to 3.1 times GDP.

The most striking development in 2000 is the increase in the number of payments made via the Internet. For the first time, the volume of giro transactions via the Internet is higher

Box 4.1 E-banking in Norway

In 2000, many Norwegian Internet users began using e-banking services. Approximately two million Norwegians use the Internet at least once a month and half of these use the Internet every day. Younger members of the population are the most active users, and use declines with age.

About half of the Internet users avail themselves of e-banking services and information gathering is the only activity that is more popular. Internet users under 18 do not usually have e-banking agreements, probably because their demand for banking services is limited. Nearly half of the Internet users between 20 and 39 have e-banking agreements. The share of e-banking customers declines with increasing age at the same time that e-banking customers between 40 and 59 are the most active users.

Banks have focused on the number of registered e-banking agreements when they describe developments. According to BBS, there were more than 950 000 e-banking agreements in Norway in February 2001. Individuals who state that they use e-banking (about 1 million) outnumbered the registered agreements in February 2001. The explanation is that in some households, an individual agreement may cover several users. The number of users has increased from about 600 000 in February 2000 to one million in

February 2001. The growth rate is expected to slow in 2001 because so many individuals are already using e-banking services. Young men with higher education and high income have been the most eager to use e-banking services. More women than men have started using e-banking services in the last half year, however, so that before long, gender distribution will be equal.

Most people establish e-banking agreements with their primary bank. Nevertheless, it appears that e-banking customers are less loyal than other customers, and price in particular is mentioned as an important factor when evaluating a customer relationship.

E-banking is used largely for executing routine payment tasks such as paying bills, obtaining account information and transferring funds between one's own accounts. Services related to, for example, loans and insurance are used less frequently. It also appears that e-banking is not the only form of contact that customers have with their banks. Customers wish to visit their bank's branch office in connection with more complicated services such as loans and insurance.

Source: Norwegian Savings Banks Association, MMI (Markeds- og mediainstituttet), BBS

Chart 4.9 Giro, manual and electronic 1990-2000. In millions of transactions.

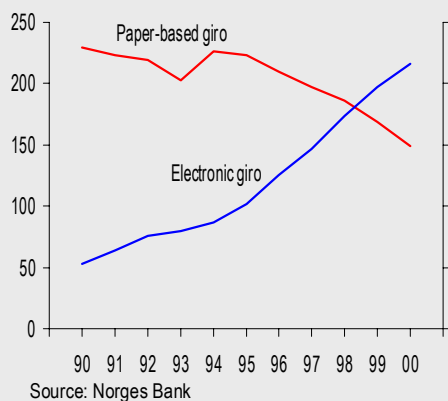


Chart 4.10 Use of electronic giro services 1994-2000. In millions of transactions

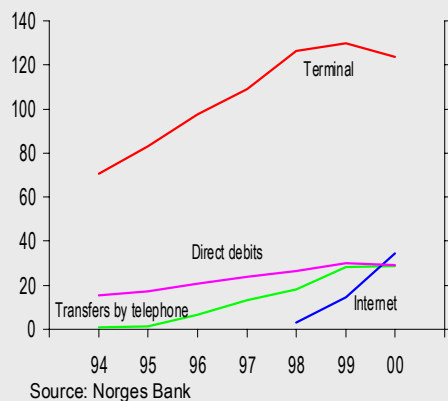
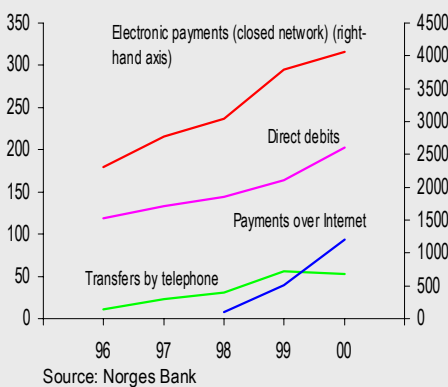


Chart 4.11 Use of electronic giro services 1996-2000. In billions of NOK



than the volume of telebanking transactions and direct debits. From 1999 to 2000, the number of electronic giro payments more than doubled, reaching 34.6m. This growth is expected to continue next year since about 400 000 new users joined the ranks of e-banking customers in 2000. In addition, e-billing will be introduced in 2001 and this will probably further increase the growth rate. The average value of each individual giro paid via the Internet is NOK 2 700, less than the average value of each individual direct debit but more than the average value of each individual giro paid by phone (telebanking). Thus, the Internet is used to pay medium-sized invoices. A number of small businesses also use the Internet because it is an inexpensive and easy solution compared with terminal payments.

Growth in telephone transfers seems to have come to a halt. The two per cent growth from 1999 to 2000, when transactions numbered 28.8m, contrasts sharply with the year before when the growth rate was 55 per cent. Banks offer agreements that include both telebanking and e-banking. A steadily increasing number of users can choose between these services and seem to prefer e-banking to telebanking. Telebanking is used less frequently and for smaller amounts than any of the other electronic giro services. The average amount is decreasing and was NOK 1 825 in 2000.

Direct debits no longer account for the largest share of electronic giro payments made by households. From 1999 to 2000, the number dropped by more than 3 per cent to 29m transactions. The average value of giros paid by direct debit is fairly high and increasing. This is peculiar to Norway, since direct debits are used to pay small-value invoices in other countries. In 2000, the average amount was NOK 6 970 compared with NOK 5 455 in 1999.

Terminal payments account for the largest share of electronic payments. More than half the electronic transactions, ie 120m transactions, were sent from business terminals. Terminal payments account for 92 per cent of the value of electronic transactions in 2000. These terminals communicate via fixed, closed telecommunication lines with high fixed costs. Large and medium-sized businesses are therefore the primary users of this transaction method. Closed telecommunication lines are encrypted, their use requires a special agreement, and a special technical interface must be installed at the individual user and at the bank. "Everyone" has access to an open system such as the Internet or the telephone system. The average amount transferred by business terminals rose by 15 per cent to NOK 33 745 per transaction in 2000.

Electronic giro payment turnover rose from NOK 4 057bn in 1999 to NOK 4 409bn in 2000. The value of payments over the Internet is increasing most rapidly, by 135 per cent, although growth in terminal payment turnover is also high at 24 per cent. Telephone transfers were the only electronic giro service that registered a decline in turnover.

Paper-based giro services include giros sent by mail and giros delivered at the counter (in banks or post offices). In 1999, 45 per cent of all giro transactions were paper-based, while in 2000 the share dropped to 41 per cent. Banks' pricing of this

Chart 4.12 Use of paper-based giro services 1994-2000. In millions of transactions

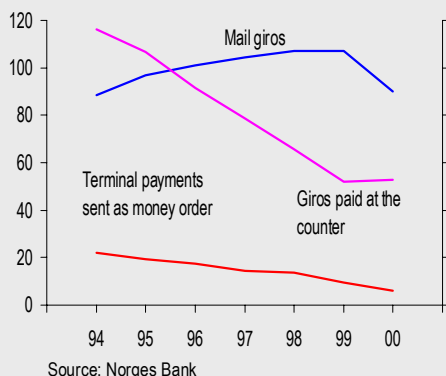


Chart 4.13 Use of paper-based giro services 1996-2000. In billions of NOK

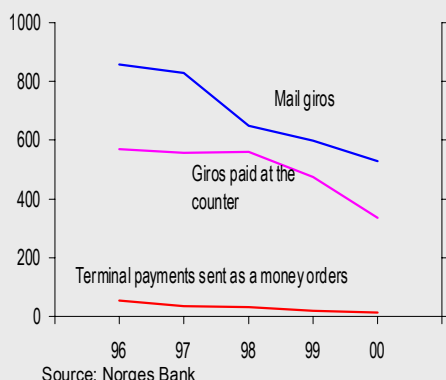


Chart 4.14 Use of "home banking" services 1994-2000. In millions of transactions

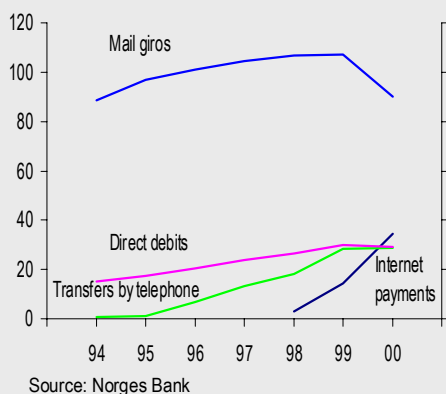
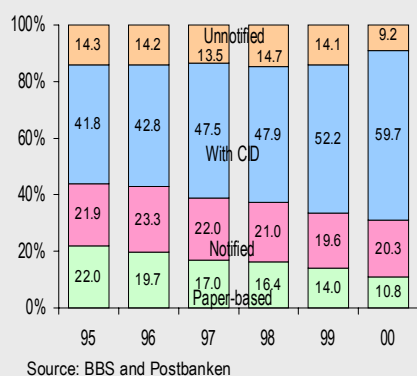


Chart 4.15 Giro services 1995-2000. Receipt of giros. Transactions as percentage share.



service is the main reason for this trend, but the development of user-friendly electronic giro services has also been a contributing factor. In the long run, payments over the Internet can probably replace a large portion of the remaining paper-based transactions.

The number of mail giros declined by 16 per cent from 1999 to 2000. This is the first year with declining volume since banks introduced this service in 1992. This service is considered an efficient paper-based solution but is considered less efficient than electronic solutions. The mail giro has been a good solution for users, but technological developments have provided users with another alternative. In 1999, there were seven mail giro payments for every payment transaction over the Internet. In 2000, there were 2.5 mail giro transactions for every Internet transaction. Growth in Internet payments is so rapid that the ratio may soon be 1:1.

Paper-based giros delivered at the counter include both cash payments and account debits. Of these, cash payments declined most rapidly, 11 per cent from 1999 to 2000. Account debits dropped 8 per cent from 1999 to 2000.

Terminal giros sent as money orders decreased by about a third from 1999 to 2000. These account for only 4 per cent of paper-based giro payments and 1 per cent of turnover.

Turnover for all paper-based giro services declined from 1999 to 2000. A total decline of 20 per cent brought turnover down to NOK 875bn. Terminal giros sent as money orders declined most, by 37 per cent. Turnover for mail giros dropped by 12 per cent to NOK 527bn. Turnover for giros delivered at the counter decreased somewhat more slowly, by 8 per cent.

Chart 4.15 shows how payments were received in 2000, by notification format. The chart only shows a portion of the payments (those that were registered by BBS and Postbanken). Payments to payees without a bank account or with an unknown bank account number are received as a money order. When the payer knows the payee's account number, the payment is received electronically, either with notification sent by mail (a paper copy of the giro stating that the payment has been made), without notification, or with a customer identification number (CID).

It is worth noting that the payment has been made when the funds are in the payee's account regardless of whether and when the payee receives confirmation/notification. BBS sends out confirmation/notification after both accounts have been updated, ie after the payment has been completed. For payments made with a CID number, this notification usually comes in paper-based form. Confirmation always comes in paper-based form for payments with notification.

Since a payment may be initiated in paper-based form (eg as a mail giro or at the counter) and subsequently received electronically, giros received electronically outnumber giros initiated electronically. Ninety per cent of all giros were received electronically in 2000, while only 59 per cent were initiated electronically. In the interests of an efficient payment system, it is desirable that as many giro payments as possible are initiated (and received) electronically.

Chart 4.16 Payment cards 1991-2000.
In millions of transactions. By transaction type.
Goods purchases and cash withdrawals

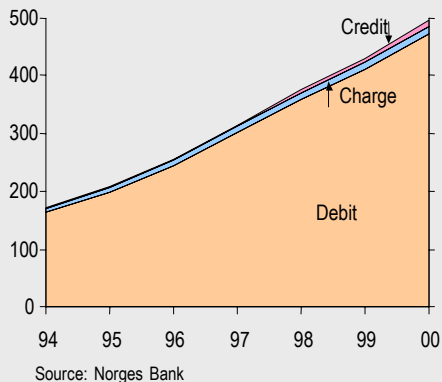


Chart 4.17 Payment cards 1991-2000.
In billions of NOK. By transaction type.
Goods purchases and cash withdrawals

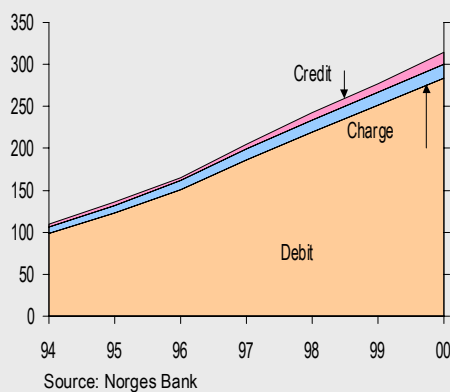
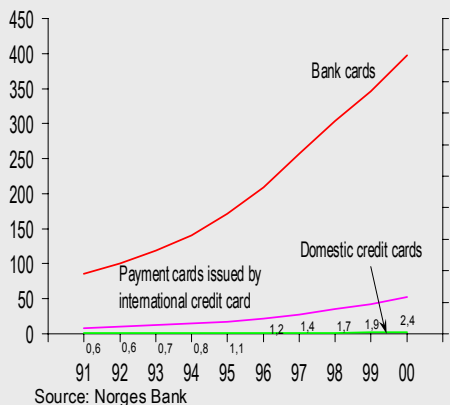


Chart 4.18 Use of Norwegian payment cards 1991-2000. Goods purchases. In millions of transactions



Oil companies' cards are not considered payment cards in line with bank cards, credit cards issued by domestic card companies or payment cards issued by international card companies. The reason for this is that the cards may not be used anywhere else than the oil companies' own petrol stations. The oil companies' systems are closed systems and contrast with a system where payment cards may be used in all terminals in all kinds of shops.

Payment cards

For the first time, payment cards are the most popular payment instrument in Norway. In 2000, 385m purchases of goods and services were completed by payment card, more than 50 per cent of all non-cash payments in Norway. The value of these transactions amounted to NOK 167.5bn, or about 12 per cent of GDP.

A special feature of payment card use in Norway is that the bulk of payments are made with debit cards. Credit cards account for 28 per cent of the total number of payment cards. Nevertheless, the public seldom uses credit cards. Nine of ten card transactions in Norway in 2000 were debit card transactions and this share has remained stable for several years.⁸ Chart 4.16 shows the number of payment card transactions (both goods purchases and ATM withdrawals) classified into three groups: credit cards, billing cards and debit cards (see Chapter 3.3 for more information). Turnover for these groups (see Chart 4.17) reflects the same pattern, but the average amount is larger for credit card transactions than for debit card transactions.

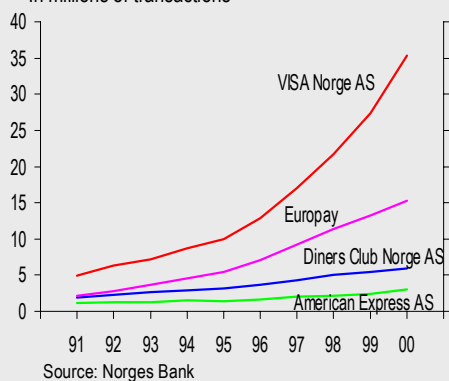
Another major distinction is between the use of payment cards with electronic debiting and those with manual debiting. Electronic debiting requires a terminal that can check whether the card has been blocked, and for debit cards, whether there is cover in the account. EFTPOS terminals and ATMs meet these requirements. More than nine of ten card payments were made electronically in 2000. In the last two years, the share of payment card transactions debited manually has remained fairly stable at 7-9 per cent.

Another interesting aspect of payment cards is use broken down by card issuer. Bank cards account for the bulk of transactions in Norway with an 89 per cent share in 2000. Only 0.5 per cent of transactions were generated by domestic credit cards, while payment cards issued by or in cooperation with international card companies accounted for the remaining 10.5 per cent.

Payment card use falls into two main categories: goods purchases and cash withdrawals. Cash withdrawals are discussed in section 4.1. Goods purchases accounted for the largest number of transactions in 2000, 386m of 496m transactions. This reflects 21 per cent growth in the number of goods purchase transactions compared with 1999. Goods purchase payments are primarily made using EFTPOS terminals, but they may also be effected by means of manual debits. Bank cards were also predominately used for goods purchases and accounted for 88 per cent of transactions. The average bank card purchase in 2000 was NOK 380. A few major card companies have issued the other payment cards. In Norway, card companies and banks issue payment cards from four international companies: VISA, Europay, American

⁸ The account to which the debit card is connected may, however, have an overdraft facility.

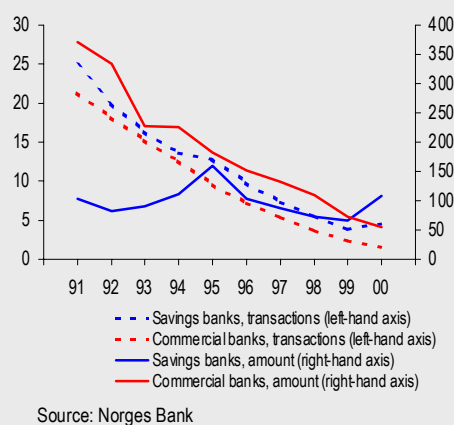
Chart 4.19 Use of payment cards issued by international card companies 1991-2000. In millions of transactions



Express and Diners Club (see Chart 4.19). Domestic credit cards are issued primarily by three companies, GE Kapital Finans AS, DnB Kort AS and Gjensidige NOR. The domestic card operators account for a small and declining share of transactions. The average goods purchase made by international payment card or domestic credit card was NOK 800 and NOK 3 670 respectively in 2000, much higher than the average bank card purchase.

From 1999 to 2000, turnover in connection with the use of payment cards increased by 14 per cent to a total of NOK 314.6bn. Bank cards dominated with 89 per cent of turnover, a slight reduction from the year before when the share was 90 per cent. Payment cards issued by international companies in particular increased their relative share of turnover, while domestic credit cards increased their share of turnover marginally. The increase in turnover is mainly a result of Norwegians' increased use of payment cards since foreigners' use of payment cards in Norway declined in 2000.

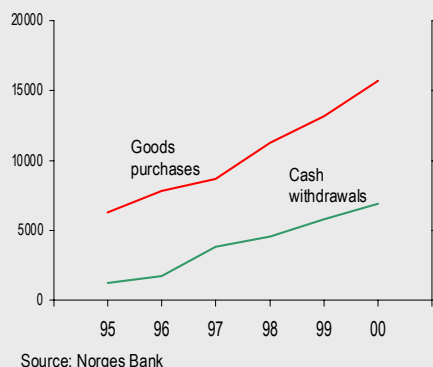
Chart 4.20 Use of cheques 1991-2000. In millions of transactions and billions of NOK



Cheques

Cheque use dropped to only 0.8 per cent of the total number of payment transactions in 2000 and the number of cheques declined by 1.6 per cent compared with 1999. The decline in the use of cheques seems to have levelled off after many years with rapid decline in the use of this payment instrument. The few transactions that are made by cheque probably have very high utility for payer and payee, considering the substantial cost difference between paying by cheque and using other means of payment. These transactions are primarily large-value transactions by private individuals and some businesses, and the average cheque amount is relatively high. In 2000, the average amount was NOK 26 240, an increase of NOK 4 190 from the year before. It will probably take several years before these transactions can be replaced completely by other payment instruments, since at present none of the other payment instruments can provide a direct substitute for the cheque, which has an advantage with regard to safety and guaranteed settlement. The payment card, which has replaced most cheque transactions, usually has a payment limit, which makes large payments impossible. Carrying large amounts of cash is both risky and impractical. On the other hand, giros (credit transfers) do not permit settlement on the spot.

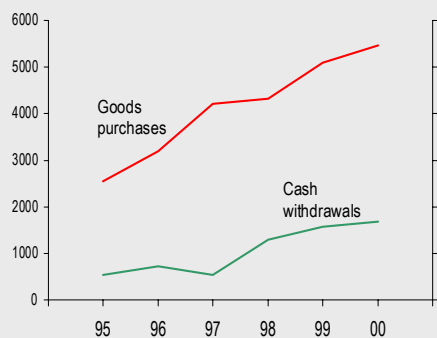
Chart 4.21 Norwegian card transactions abroad broken down by goods purchases and cash withdrawals. In thousands. 1995-2000



4.3 International payment transactions

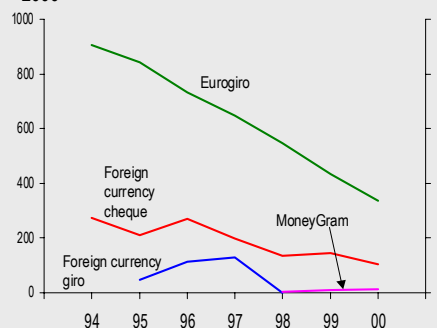
Private individuals' cross-border payments to and from Norway are dominated by the use of payment cards abroad. Growth in Norwegians' use of payment cards abroad is assumed to be connected with increased travel and expanded possibilities for using payment cards at most destinations. At the same time, cross-border trade probably contributes to increasing the use of payment cards abroad. A small share of cross-border card use may also be tied to Norwegian's purchases in Internet shops

Chart 4.22 Non-residents' card transactions in Norway broken down by goods purchases and cash withdrawals. In thousands. 1995-2000



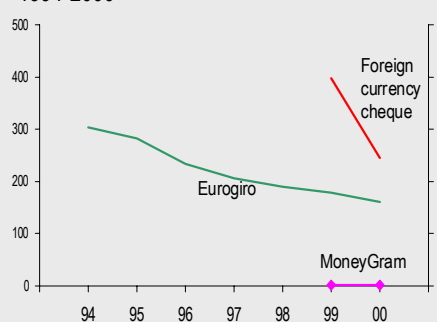
Source: Norges Bank

Chart 4.23 Transfers from Norway. Thousands. 1994-2000



Source: Norges Bank

Chart 4.24 Transfers to Norway. Thousands. 1994-2000



Source: Norges Bank

based in other countries, where cards are often used as a means of settlement.

Chart 4.21 shows that Norwegian's use of payment cards abroad has increased by 19 per cent from 1999 to 2000 when transactions numbered 22.6m. Card use abroad has more than doubled in the last five years. Withdrawal of cash accounted for nearly one-third of all transactions abroad in 2000. This share has remained stable since 1997. European savings banks have established an international ATM network that has been in operation since 1991. Use of this network has increased steadily, and Norwegians' use of Eufiserv increased by 17 per cent in 2000 to 385 000 transactions. However, Eufiserv transactions account for only 6 per cent of Norwegians' cash withdrawals by card abroad.

The value of Norwegians' payment card transactions abroad was close to NOK 23.3bn in 2000, 20 per cent growth compared with 1999. Cash withdrawals abroad account for 43 per cent of the total value of Norwegians' payment card use abroad. The average amount of each goods purchase was NOK 850, whereas the average cash withdrawal was NOK 1 440.

Foreigners use payment cards in Norway much less frequently. Transactions in 2000 numbered just over 7.1m, reflecting only 7 per cent growth from the previous year (see Chart 4.22). This is the lowest growth rate since 1995. Just under one-fourth of all foreign card transactions in Norway were cash withdrawals. Since foreigners use Eufiserv fairly often, one-fourth of foreigners' cash withdrawals in Norway in 2000 were expedited through Eurfiserv. However, the number of Eufiserv transactions declined by 4 per cent from 1999 to 2000, when there were 411 000 transactions.

The total value of foreigners' card use in Norway in 2000 was just under NOK 5.4bn, a slight reduction compared with 1999. The value of cash withdrawals constitutes 28 per cent of total card use, somewhat higher than the share of total transactions.

The number of cheque and giro transfers abroad has declined for a number of years and from 1999 to 2000 the number dropped 23 per cent to 456 000 transfers. Eurogiro is used for most transactions and accounts for nearly one-fourth of the transfers, but the volume of this service also declined by 23 per cent from 1999 to 2000 (see Chart 4.23). Other instruments for cross-border transfers include foreign currency cheques and MoneyGrams.

The number of transfers to Norway dropped by nearly 30 per cent from 1999 to 2000, ie a more dramatic decline than in the number of transfers from Norway. The foreign currency cheque is the most frequently used instrument for transfers to Norway and accounted for nearly 60 per cent of the market in 2000. However, the number of foreign currency cheques declined by 38 per cent from 1999 to 2000. Since the use of Eurogiro payments declined less than the use of foreign currency cheques, Eurogiro increased its share of transfers to Norway from 30 to 40 per cent from 1999 to 2000.

SWIFT is the most extensively used network for cross-border transfers, both for interbank transactions and for

customer payments. A total of 9.2m SWIFT messages were sent from Norwegian to foreign banks in 2000, a 14 per cent increase compared with the previous year. About 80 per cent of these messages are related to payments, but since one payment may generate two to three messages, it is difficult to reliably estimate the number of payments from the number of messages. Information about payment transactions broken down by customer transactions and interbank transactions is not available either. Norwegian banks received 6.9m messages from foreign banks in 2000, a 14 per cent increase from the year before. On a global basis, the number of messages increased by 20 per cent from 1999 to 2000. About 60 per cent of all messages worldwide are related to payments.

5 Prices and income in the payment system

How to calculate average prices

Average prices for savings banks and commercial banks respectively are calculated by weighting the price per transaction in each bank according to the bank's share of sight deposits. Average prices for all banks in the survey are calculated by weighting the bank group's average prices by their market shares, measured by number of transactions.

Norges Bank has compiled statistics on price trends in the payment system since 1989. This year we have also gathered information about the prevalence and size of a number of start-up and annual fees for payment services. This information enhances the picture of customers' costs in connection with various payment services.

The price statistics cover nine commercial and 18 savings banks, which account for 91% and 71% respectively of the two bank groups' market shares measured by sight deposits. We have included a new bank in the price survey for 2001. Price information for all years has largely been gathered at the beginning of the year. To show price trends over time Norges Bank calculates average prices for all payment services every year. Price information regarding most bank services, including payment services, is documented effectively on banks' websites. However, discounts for different customer groups are not always well documented.

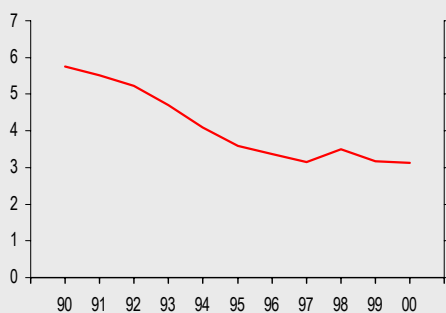
Long-term developments

The main picture at the beginning of 2001 is that nominal prices for nearly all payment services have increased slightly on average compared with the year before. Thus, this year's increase does not deviate from the long-term trend. To a greater extent than earlier, current prices reflect banks' real costs for payment services. The increase in average prices has to a certain extent coincided with the gradual decrease in the interest rate margin (difference between banks' lending and deposit rates) (see Chart 5.1).

Recent research (Humphrey et.al., 1998) shows that price changes have contributed to changing payment habits in Norway. Most transactions that were made either in cash or via paper-based services 10 years ago are now executed electronically (see section 1.2 and Chapter 4). This development is favourable for the economy, since the transition to payment solutions that cost less to produce and that offer users greater flexibility and more choice reflects more efficient utilisation of resources.

Despite increases in average prices, we find that the public's average cost per transaction is lower this year than five years ago. By multiplying the average prices for individual payment services by their share of the year's total number of transactions and totalling the result for all payment services, we get a weighted average price for payment transactions in Norway (the blue line in Chart 5.2). The weighted average price fell from NOK 4.55 in 1994 to NOK 4.03 in 2000 after having been as high as NOK 5.14 in 1995. In real terms, the public paid on average about one krone less per transaction in 2000 than in 1994. This is due to the fact that more Norwegians increasingly choose inexpensive electronic payments services rather than costly paper-based solutions. Growth in the use of

Chart 5.1: Development in banks' interest rate margins (1) in Norway 1990 - 2000. Per cent.



1) The difference between banks' lending and deposit rates as at 31 December

Source: Norges Bank

payment cards in particular has reduced the average prices for all transactions collectively.

Most Norwegians still pay their bills by giro. Therefore, we have used the same calculation method to find the weighted average price for giro services alone (the red line in Chart 5.2). The average price for giro services increased from NOK 5.55 in 1994 to NOK 6.81 in 1995 and has since declined steadily to NOK 5.76 in 2000. The reason for the increase is that some paper-based giro services have become much more expensive during the period and the public has not shifted to less expensive giro services fast enough to reduce the weighted average price for giro services. Nevertheless, the inflation-adjusted average price for giro services has dropped by about 50 øre since 1994.

The decline in the average price per transaction shows only one aspect of society's gains due to the development of the payment system. New ways of performing payment services and an increasing amount of self service have reduced customers' needs to visit banks during opening hours and have also reduced the time and travel costs related to the payment services. Since ATMs and cash back in connection with goods purchases has made it easier to withdraw cash, customers can now withdraw smaller amounts more frequently. This reduces the loss of interest connected with holding cash and losses in the event of theft. Therefore, the development of new payment services generates social benefits above and beyond the obvious savings for the individual due to lower fees.

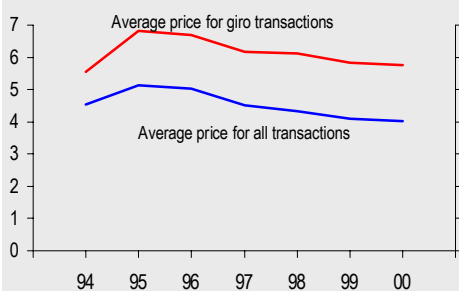
5.1 Prices for cash withdrawals

Banks do not currently charge their own customers for cash withdrawals at the counter. Cash withdrawals in other banks (ie other than where the customer has an account) are also possible in Norway, in accordance with the agreement between the Norwegian Financial Services Association and the Savings Banks' Service Office regarding mutual access to account debiting. Customers making this kind of withdrawal are charged a fee of up to NOK 50 and the service is used infrequently. There is no fee for cash back in connection with goods purchases other than the fee connected to the actual goods purchase.

ATM withdrawals

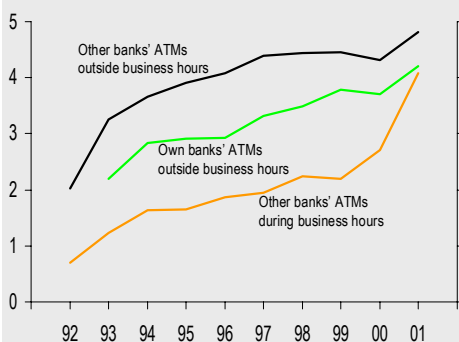
In most banks in the survey, the price for ATM withdrawals depends on whether the withdrawal is made from the customer's own bank's ATMs or ATMs owned by other banks and whether the withdrawal is made during or outside the banks' business hours. Withdrawals from one's own bank's ATMs during business hours are usually free, while withdrawals outside business hours cost on average NOK 4.20. The two bank associations have agreed on interbank fees for ATM withdrawals in other banks' ATMs. This fee is currently NOK 4.50. The interbank fee is paid by the cardholder's bank to the bank that owns the ATM terminal. This interbank fee clearly

Chart 5.2: Average price per transaction and average price per giro transaction in Norway, 1994 - 2000. Prices in NOK.



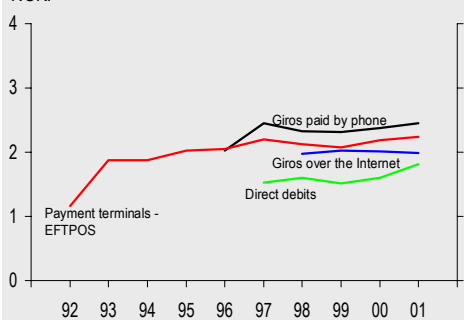
Source: Norges Bank

Chart 5.3 Prices for ATM services 1992-2001. Average for all banks. Prices in NOK



Source: Norges Bank

Chart 5.4 Prices for electronic payment services aimed at private customers 1992-2001. Average for all banks. Prices in NOK.



Source: Norges Bank

Commonly used terms:

CID: Customer identification that may be received electronically by the payee whether the payment is initiated electronically or in paper-based form.

Remittance: This service, established by BBS, is used to transmit funds to payees, with and without bank accounts, when the transfer is initiated by a company terminal (ie a closed communication channel between the company and the bank/BBS). This service is used for individual payments, retail payments, account adjustments, etc.

Company terminal giro: A collective term for a company terminal payment solution that was established by someone other than BBS.

OCR giro: A paper-based giro with a special bar code that makes it possible to register the amount and allows the payee to receive payment electronically.

- OCR file: The bank keeps the form.
- OCR return: The form is sent to the payee.

Money order: A paper-based giro without the payee's account number which must be presented in the bank to receive payment.

provides the basis for banks' pricing of ATM services. In January 2001, the average price for withdrawals from other banks' ATMs during business hours was NOK 4.08 and the average price outside business hours was NOK 4.81.

Prices for ATM withdrawals in other banks during or outside business hours rose substantially during the first half of the 1990s, whereas prices have been fairly stable since 1996. Last year, however, average prices on all kinds of ATM withdrawals increased (see Chart 5.3). The most pronounced increase, 51 per cent, was on withdrawals from other banks' ATMs during business hours. This increase was primarily due to the fact that one major bank changed its prices for this service. Average prices for the other kinds of ATM withdrawals have also increased by more than 10 per cent each. This is due to the fact that a few banks have increased their fees for ATM withdrawals while the remaining banks are operating with the same fees as last year. It appears that prices for ATM withdrawals are converging towards the level of the interbank fee.

5.2 Domestic payment services

Electronic payment services

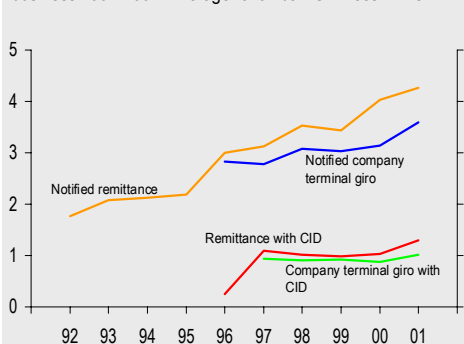
Nominal prices for the four most important payment services aimed at the private customer market changed very little compared with prices in 1999 (see Chart 5.4). Statistics show a real reduction in average prices for giros paid by phone, over the Internet and via payment terminals. On the other hand, fees for direct debits have increased. This price increase is the result of higher prices in one large and five small banks. Two banks have reduced their prices.

However, average prices for electronic services aimed at business customers have increased markedly since last year. For example, the average price for remittances with a CID has risen by 26 per cent and the price for company terminal giros with a CID has increased by 15 per cent. However, the relatively large increase in average prices is due to one large bank's increased prices for these services.

Paper-based services

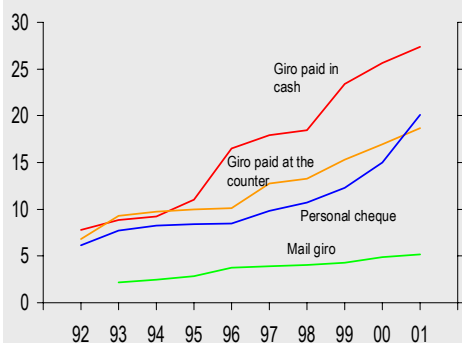
Average prices for paper-based services aimed at the private customer market have increased substantially since the mid-1990s (see Chart 5.6). The price for using personal cheques has increased most this past year. The price has soared 34 per cent from NOK 15 in January 2000 to more than NOK 20 a year later. Prices for giros paid at the counter also rose an average of 10 per cent. Mail giros are the most cost-effective of all paper-based services and this is also reflected by the price of this service. In January 2001, a mail giro cost a good NOK 5 on average, while a giro paid in cash at the counter cost an average of NOK 27 and a giro paid by means of an account debit initiated at the counter cost just under NOK 19. Most banks increased their prices for paper-based services aimed at the private customer market in 2000.

Chart 5.5 Prices for selected electronic giro services aimed at business 1992-2001. Average for all banks. Prices in NOK.



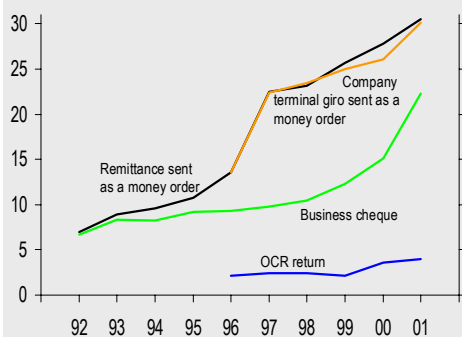
Source: Norges Bank

Chart 5.6 Prices for paper-based payment services aimed at private customers 1992-2001. Average for all banks. Prices in NOK.



Source: Norges Bank

Chart 5.7 Prices for paper-based payment services aimed at business 1992-2001. Average for all banks. Prices in NOK.



Source: Norges Bank

Average prices for paper-based services aimed at business customers have also increased the last few years (see Chart 5.7). Prices on business cheques increased most in 2000. The price climbed 48 per cent from NOK 15 in January 2000 to NOK 22 a year later. The average price for company terminal giros sent as money orders increased 16 per cent from NOK 26 in January 2000 to NOK 30 a year later. The OCR-return service is 25 per cent cheaper, whereas the average price for the OCR-archive service has risen about 10 per cent since January 2000.

Discounts, annual and start-up fees

Most banks in the survey offer reduced prices or price exemptions on services that are subject to charges for special account or customer groups. Price reductions are most frequently offered to pensioners and young people aged 13 to 18. Such discounts for special customers/accounts have not been taken into account when calculating average prices. Therefore, actual transaction prices are often lower than those shown in the charts and tables.

On the other hand, banks charge both private and business customers annual fees or start-up fees in connection with some electronic services. These fees are not included in the calculation of average prices and therefore increase the average prices for the electronic payment service in question. For the first time this year, Norges Bank is publishing information about annual fees connected with some key payment services.

Annual and start-up fees cover access to individual payment services. Pricing of access is normal for products and services that require substantial investment before production can begin, while the cost of producing one unit is very low. In this type of market, the producer must develop an expensive infrastructure in order to provide the service. A rational solution is hence to cover a large portion of the expenses connected to the infrastructure investment by means of annual and start-up fees. The variable costs of production and the rest of the fixed costs are covered by unit pricing. This type of pricing is also economically advantageous because it increases utilisation of the infrastructure. Fixed annual and start-up fees are normal in business operations such as transportation and public utilities.

The average annual fee for a combined payment card was NOK 205 in January 2001. A joint agreement among the banks stipulates prices for new banks that wish to gain access to the banks' joint payment systems. If the newly established bank's card database exceeds 17 500 cards, the bank must pay an annual fee of NOK 250 for each card issued. Only in two cases were banks' annual fees for combined cards higher than the start-up fee.

The average annual fee for using the security calculator that provides access to e-banking services (Digipass) was NOK 82 in January 2001. As an alternative to Digipass, banks are now offering a security card solution that also provides access to e-banking services. The annual fee for this card is considerably less expensive than for the Digipass solution.

Only a few savings banks and one commercial bank charges a start-up fee to provide customers with access to e-banking services. This start-up fee varies from NOK 100-300. The unweighted average fee was NOK 56 in January 2001.

Chart 5.8 Price spread for withdrawals in other banks' ATMs during business hours. Prices in NOK

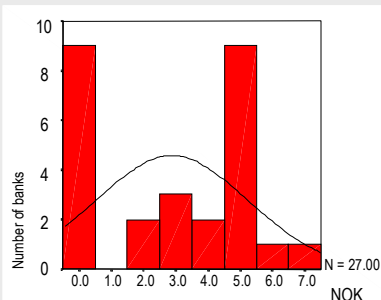


Chart 5.9 Price spread for withdrawals from other banks' ATMs outside business hours. Prices in NOK

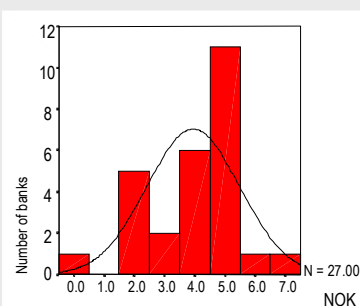


Chart 5.10 Price spread for use of payment cards in payment terminals. Prices in NOK.

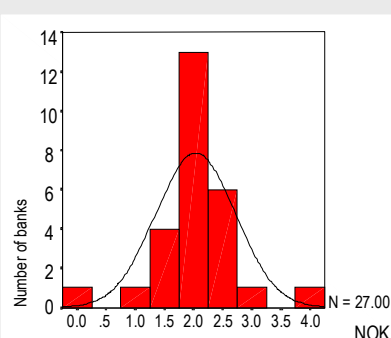
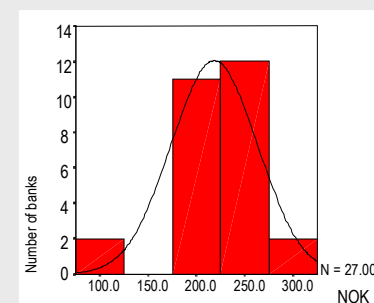


Chart 5.11 Price spread for annual fee for combined cards (BankAkspekt and VISA / MasterCard). Prices in NOK.



5.3 Price spread

Average prices for payment services can conceal large variations in actual prices between banks. Therefore, the spread in prices for some key payment services is of interest. The price spread may be an indication of the intensity of competition for individual payment services, but it is difficult to draw a final conclusion without more thorough analysis. A large spread in prices may indicate that banks have different pricing profiles and that they are focusing on different customer groups or market segments. A large spread may also mean that the competition among banks is less intense. A small spread in prices may be due to more intense competition for customers within a particular payment service, but may also be due to interbank fees or price-setting cooperation on one or several payment services. Below we will focus on prices for payment services in the private customer market in 2001.

The shape of the curves in Charts 5.8-5.16 gives an impression of the price spread for various services. Steep, narrow curves indicate a small price spread and a fairly high concentration of prices around the average. Low, broad curves indicate a large price spread. The highest point on the curve represents the unweighted average of prices for all banks in the survey.

Price spread for ATM withdrawals

The spread in prices for ATM services is large with the exception of cash withdrawals in other banks' ATMs outside business hours. Prices for withdrawals from a customer's own bank's ATMs outside business hours vary from NOK 0 to NOK 5. Prices for withdrawals in other banks' ATMs during business hours also vary widely, from NOK 0 to NOK 7 (see chart 5.8). Prices vary least for withdrawals in other banks' ATMs outside business hours (see Chart 5.9). Most banks charge NOK 4 or NOK 5, while prices vary from NOK 0 to NOK 7.

Price spread for electronic payment services

Prices for the use of payment cards in payment terminals (EFTPOS) varies from NOK 0 to NOK 4. Most banks in the survey charge between NOK 1.50 and NOK 2.50 (see Chart 5.10). Compared with the spread for other services, the price spread for using payment cards in EFTPOS terminals is fairly small. The range of annual fees for debit cards that combine Bankakspekt and VISA/Master Card functionality is also fairly narrow (see Chart 5.11). Most banks charge an annual fee of NOK 200-250, while a couple of banks charge only NOK 100.

Prices for giros paid over the Internet vary from NOK 0 to NOK 3 (see Chart 5.12). The price spread for this service is substantial, although prices in general are low. About half of the

Chart 5.12 Price spread for giros paid over the Internet. Prices in NOK.

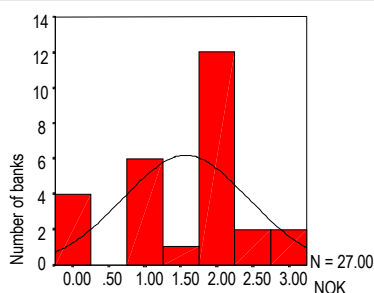


Chart 5.13 Price spread in annual fees for giro payments over the Internet. Prices in NOK

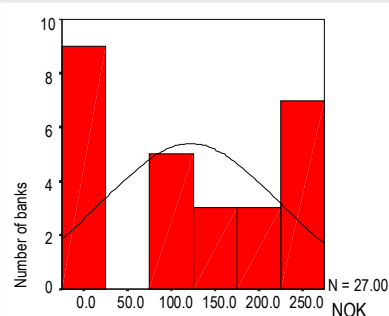


Chart 5.14 Price spread for mail giros. Prices in NOK.

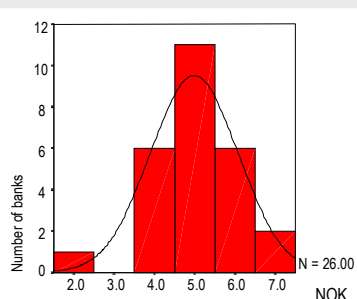
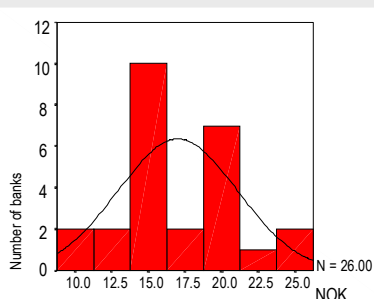


Chart 5.15 Price spread for giros paid at the counter. Prices in NOK



banks charge NOK 2 per giro paid over the Internet. The spread in annual fees for e-banking access is also fairly wide (see Chart 5.13). Nine banks charge no annual fee, while seven banks charge e-banking customers an annual fee of NOK 250. In general, banks' e-banking prices vary considerably.

Prices for direct debits also vary considerably, from NOK 0 to NOK 3. The majority of banks charge NOK 2 for this service. The price spread for telephone giros is also fairly large, from NOK 0 to NOK 3. Most banks charge between NOK 2 and NOK 3 for this service.

Price spread for paper-based payment services

There is little variation in price for mail giros (see Chart 5.14). The majority of banks charge NOK 5 per giro. Postage charges come in addition and all banks in the survey charge NOK 1 per sending. The price of a giro delivered at the counter varies from NOK 10 to NOK 25 (see Chart 5.15). Most banks take NOK 15 or NOK 20 per giro delivered at the counter and the spread in prices for this service is small. The price spread for cheques is also narrow (see Chart 5.16). Most banks charge between NOK 10 and NOK 20 per cheque. The interbank fee for cheques⁹ is currently NOK 14, and this may help explain the small variation in prices for this service.

Price spread in commercial and savings banks

An analysis of commercial banks' and savings banks' prices for payment services shows that on average commercial banks charge higher prices than savings banks on nearly all payment services. This is in line with previous years. Price differences are small, however, and do not provide a basis for asserting that commercial banks as a group charge higher prices than savings banks. There are three exceptions to this picture. On average, savings banks charge customers a higher start-up fee for using e-banking services, a higher annual fee for combined cards and higher fees for cash withdrawals from other banks' ATMs outside business hours than commercial banks. These price differences are substantial.

Price spread and banks' size

There seems to be a clear connection between price level and banks' size for many of the payment services. Banks included in the survey have been divided into two groups according to size (see information in the margin).

The relationship between these two groups and price variations on payment services has thus been investigated. Large banks have a tendency to charge higher fees than small banks. The survey shows that the large banks charge higher prices than the small banks for all paper-based payment services aimed at the private customer market and for all ATM services. The difference in prices for electronic payment services aimed at the private customer market is insignificant. The exception

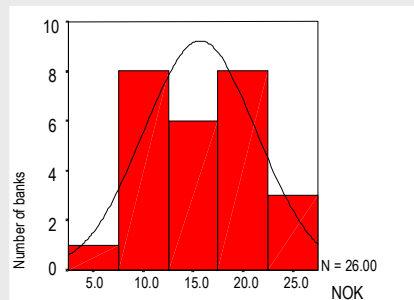
⁹ The interbank fee for a cheque is paid by the check issuer's bank to the bank that receives and discounts the cheque.

Criteria for grouping banks by size

If the share of the bank's total assets and the share of total deposits in Norwegian krone are both greater than or equal to 2 per cent, the bank is considered large.

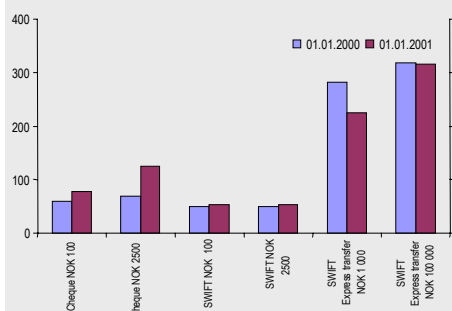
If either the share of total assets or the share of deposits in Norwegian krone is less than 2 per cent, the bank is considered small.

Chart 5.16 Price spread for cheques to private customers. Prices in NOK



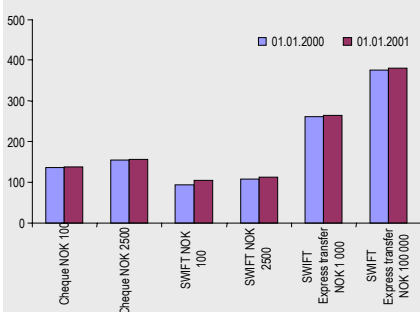
Charts 5.8 – 5.16: Source: Norges Bank

Chart 5.17 Prices for cross-border payments 2000-2001. Electronic transfers. Prices in NOK



Source: Norges Bank

Chart 5.18 Prices for cross-border payments 2000-2001. Paper-based transfers. Prices in NOK



Source: Norges Bank

here is the giro paid via the Internet, which costs considerably more for customers in large banks than in small banks. The annual fee for combined payment cards is also considerably higher in large banks than in small banks. On the other hand, small banks have a tendency to charge higher annual fees for using e-banking services.

5.4 Transfers abroad

Prices for international payments have received increased attention in recent years. This is due both to the EU directive on cross-border payments and the ECB's demands for less expensive and faster cross-border payments in the EU area (see Box 2.1).

Charts 5.17 and 5.18 show developments in banks' average prices for cross-border payments from January 2000 to January 2001. Prices for cross-border transfers depend on the amount to be transferred and whether the transfer is paper-based or electronic. Paper-based payment services are considerably more expensive than electronic services. Compared with prices for payment services in Norway, prices for cross-border payments are between 10 and 100 times more expensive. Most banks in the survey have an additional charge for sending payment confirmation to the payee. A number of banks also charge customers for incoming cash payments and conversions in third-country currencies. Customers' real costs connected with cross-border payments may therefore be higher than the prices shown in the charts.

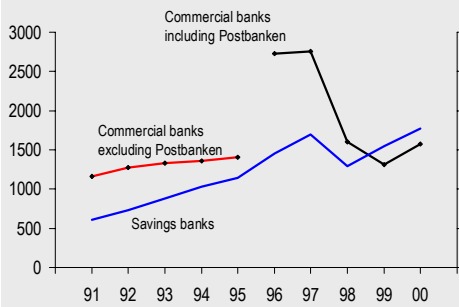
Transfers to some countries also entail costs and fees that must be covered by the payee. This is also the case for receipt of payments from abroad in some Norwegian banks, and this is at variance with the stipulations in the Regulation regarding payment orders to and from foreign countries, par. 8 (1999.07.02 no. 0719).

The charts also show that average prices for low-value transfers have increased from January 2000 to January 2001. This development undermines the ECB's intentions for the EU countries. A direct comparison of the fee level in Norway and the EU is difficult. However, Norwegian banks seem to transfer funds to other countries more quickly than many banks in the EU area.

5.5 Banks' income from payment services

The banking industry's income from payment services was approximately NOK 3.7bn in 2000, spread more or less evenly between savings and commercial banks (see Chart 5.19). This income accounts for 4 per cent of banks' total interest income in 2000. We do not know what caused the substantial decline in income in 1998. Contingent on this and on the fact that we do not have figures for Postbanken before 1996, income connected with payment services has increased throughout the 1990s, with the exception of 1998 and 1999.

Chart 5.19 Income from payment services 1991-2000. Commercial and savings banks (In millions of NOK).



Source: Norges Bank

Float income: When funds were transferred from one account to another, for example through the giro system, they did not bear interest for the payer or the payee for a period. As a result, banks' interest expenses declined.

Table 5.1 Revenues from payment services by type of service and total interest revenues. Commercial and savings banks 2000. In millions of NOK

	Commercial banks		Savings bank		All banks	
	Millions	%	Millions	%	Millions	%
Cheques	36.2	2.0	54.2	2.8	90.4	2.4
Giros, paper-based	646.2	35.6	379.7	19.3	1 025.8	27.1
Electronic giros	225.5	12.4	237.2	12.1	462.7	12.2
Payment cards	639.6	35.2	1 082.6	55.0	1 722.2	45.5
Standing orders	27.7	1.5	13.9	0.7	41.7	1.1
Other	239.4	13.2	200.1	10.2	439.5	11.6
Total revenues, payment services	1 815	100	1 968	100	3 783	100
Total interest revenues	54 769	-	39 807	-	94 576	-
% of total interest revenues		3.3		4.9		4.0

Source: Norges Bank

A closer study of the income divided between the various instruments shows that income connected with the public's use of payment cards accounts for just under half of banks' total income from payment services (see Table 5.1). This reflects the extensive use of payment cards in Norway. Income from paper-based giros accounts for 27 per cent of banks' total income from payment services despite the fact that paper-based giro transactions account for just under 20 per cent of the total number of cashless transactions in Norway. This is due to the fact that prices for paper-based payment services are considerably higher than prices for electronic payment services, and this is because costs related to providing these services are also higher.

Previously, float income was a controversial source of income for the banking industry. In accordance with the new Act regarding Financial Agreements that was put into force 1 July 2000, the float has been removed from the Norwegian payment system. This means that funds are credited to an account on the same day that they are transferred between banks. We cannot see that banks have increased prices for payment services or the interest rate margin after the removal of the float. Norway is one of very few countries in the world that has removed float income from the payment system. The removal of float and more rapid payments have increased the efficiency in the Norwegian payment system.

Banks' income from payment services has increased by about 40 per cent since 1994. Income from payment services should, however, be viewed in relation to the cost of providing these services. In 1994, Norges Bank conducted a cost survey concerning payment services in Norway (Robinson and Flatraaker, 1995). The main conclusion from this survey was that cost absorption through direct pricing of payment services had improved compared with the situation several years earlier. Income from payment transmission services was, however, still considerably lower than costs. This has probably changed as a result of higher prices for established payment services and the introduction of new services since 1994. Therefore, Norges Bank intends to conduct a new cost survey in the near future to study this development more closely.

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Explanation of tables

New

A General data

Table 1: Basic statistical data: Norway

	1995	1996	1997	1998	1999	2000
Population (million)	4,35	4,37	4,39	4,42	4,45	4,50
GDP (billion NOK)	928,7	1 016,6	1 096,2	1 109,3	1 192,8	1 403,0
Mainland GDP (billion NOK)	790,1	833,0	893,6	958,9	994,2	1 048,5
GDP pr capita (NOK)	213 583	232 631	249 543	251 120	268 332	311 547
1 USD in NOK (at year-end)	6,35	6,35	7,25	7,59	8,01	9,07
1 Ecu/Euro in NOK (at year-end, Euro from 1999)	8,29	8,09	8,06	8,90	8,10	8,13

Table 2: Technological infrastructure in Norway

	1993	1994	1995	1996	1997	1998	1999
Fixed network telephone subscribers (thousands)	2 334,8	2 394,3	2 443,6	2 484,2	2 475,0	2 475,5	2 445,7
PSTN	2 334 836	2 392 042	2 431 271	2 440 185	2 325 010	2 165 530	1 913 657
ISDN 2B+D	:	2 087	11 580	41 819	146 005	304 636	524 999
ISDN 30B+D	:	174	734	2 169	3 949	5 324	7 078
Mobile telephone subscribers	371 403	588 478	981 305	1 261 445	1 676 763	2 106 414	2 744 793
NMT	362 500	460 009	488 528	444 614	387 751	310 582	216 272
GSM	8 903	128 469	492 777	816 831	1 289 012	1 795 832	2 528 521
Cable TV	626 451	664 179	677 186	664 852	705 125	774 607	788 722
Fixed network telephone penetration (%)	54	55	57	59	62	66	71
Mobile telephone penetration (%)	9	14	22	29	38	47	61
Percentage of the population with Internet access	:	:	:	:	50	57	67
No. of inhabitants	4 324 815	4 348 410	4 369 957	4 392 714	4 417 599	4 445 328	4 478 497

B Settlement media in Norway

Table 3: Settlement media used by non-banks (at year-end, in millions of NOK)

	1995	1996	1997	1998	1999	2000
Notes and coins	39 092	40 110	42 262	42 143	43 376	43 571
Site deposits	178 690	207 682	227 440	237 046	300 559	330 724
Narrow money supply (M1)	217 782	247 792	269 702	279 189	343 935	373 248
Time deposits	312 509	316 612	309 089	326 393	327 630	358 846
M1 + other short-term deposits	530 291	564 404	578 791	605 583	671 564	732 095

Table 4: Settlement media used by banks (at year-end, in millions of NOK)

	1995	1996	1997	1998	1999	2000
Banks' cash holdings	3 103	3 566	3 878	3 945	4 524	:
Banks' site deposits in the central bank	1 498	9 597	8 139	4 716	18 330	11 540
Site deposits (yearly average)	2 809	4 826	8 463	6 986	8 016	11 079
Banks' fixed-rate deposits in the central bank (F-deposits)	0	11 173	1 928	0	0	0
Borrowing from the central bank (F-loans + D-loans)	8 312	98	547	6 918	13 600	14 160
Lending (F-loans + D-loans), yearly average	4 626	6 351	790	1 225	4 385	5 104
Transferrable deposits in other banks	7 313	14 153	14 828	13 420	13 256	16 524

Table 5: Notes and coins 1995-2000. Yearly average (in millions of NOK)

	1995	1996	1997	1998	1999	2000
Total notes and coins outstanding	38 359,1	39 588,4	41 220,9	43 577,7	43 837,2	43 571,3
<i>Denomination of banknotes:</i>						
1,000 kroner	25 522,1	25 985,4	26 711,4	27 772,9	27 290,5	26 336,4
500 kroner	2 991,7	3 465,2	4 068,0	4 875,1	5 588,1	6 106,5
200 kroner	1 025,1	1 771,2	2 629,7	3 649,5	3 949,2	4 274,7
100 kroner	5 727,5	4 961,6	4 245,8	3 473,3	3 026,7	2 684,4
50 kroner	584,7	628,8	628,6	716,6	711,9	717,3
<i>Denomination of coins</i>						
20 kroner	368,6	531,8	655,1	778,7	873,4	966,3
10 kroner	951,6	1 019,5	1 009,5	1 029,5	1 046,3	1 086,8
5 kroner	387,8	400,8	415,2	440,3	473,9	486,8
1 krone	471,9	492,0	518,4	561,0	590,2	617,2
50 øre	128,1	133,8	142,1	150,3	157,2	165,2
25 øre	40,4	40,3	40,3	:	:	:
10 øre	134,0	132,4	131,2	130,5	130,0	129,7
Copper	25,6	25,6	25,6	:	:	:

C Institutional framework

Table 6: Institutional infrastructure

	1995	1996	1997	1998	1999	2000
Norges Bank						
Number of branches	13	13	13	13	13	13
Number of accounts	:	:	:	:	:	320
All banks (including Postbanken)						
Number of institutions	:	148	146	146	144	143
Number of foreign banks' branches		3	6	6	8	9
Number of bank branches	1 568	1 553	1 515	1 492	1 483	1 472
Number of branches (Postbanken)	2 356	2 091	1 618	1 280	1 257	1 253

Table 7: Average daily turnover in NBO 1999-2001 (in millions of NOK)

	1999	2000	2001
Total (approximately)	148 000	143 000	160 000
VPO	2 429	2 224	2 324
NICS retail transactions	4 000-5 000	4 000-5 000	4 000-5 000
NICS SWIFT	5 201	3 796	5 086
Total RTGS	135 602	132 516	147 985
SWIFT RTGS	127 276	123 249	139 962
Other RTGS	8 326	9 267	8 023

Table 8: Average daily turnover in NICS 1999-2001 (number of transactions)

	1999	2000	2001
SWIFT Total	4 589	4 626	4 656
SWIFT RTGS	331	282	306
SWIFT net settlement	4 258	4 344	4 350
NICS retail transactions (in millions)	2-3	2-3	2-3

Table 9: Average daily turnover in NICS 1999-2001 (in billions of NOK)

	1999	2000	2001
SWIFT Total	145	140	156
SWIFT RTGS	127	123	140
SWIFT net settlement	18	17	16
NICS retail transactions	20-25	20-25	20-25
NICS total (approximately)	165-170	160-165	176-181

Table 10: Participation in SWIFT

	2000	
	Norwegian	Foreign
Total	31	7 292
Members	17	2 307
Sub-members/domestic users covered by members abroad	9	3 036
Participants	5	1 949

Table 11: SWIFT message traffic to/from Norway (thousands)

	1999	2000
Total messages sent	8 124,5	9 238,4
Total messages received	6 051,3	6 920,5
Global SWIFT-traffic	1 058 836,4	1 273 912,8

Table 16: Use of payment terminals (EFTPOS) 1991-2000. Number of transactions (millions)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total	58,9	76,6	97,4	123,1	143,4	182,5	234,7	288,6	337,3	386,5
Banks' payment terminals, total	22,1	36,0	51,8	72,3	90,2	120,6	162,7	210,7	254,7	302,4
Bank cards	:	:	:	:	86,6	116,5	156,8	202,9	244,8	291,8
Payment cards issued by international credit card companies	:	:	:	:	3,4	3,8	5,2	6,8	8,5	10,0
Domestic credit cards	:	:	:	:	0,2	0,4	0,7	1,0	1,3	0,6
Oil companies' payment terminals, total	36,8	40,6	45,6	50,8	53,2	61,9	72,0	77,9	82,6	84,1
Bank cards	12,0	11,3	13,1	14,2	17,2	21,1	27,4	31,9	36,4	45,6
Payment cards issued by international credit card companies	:	:	:	:	0,4	1,5	1,8	2,2	2,5	3,1
Domestic credit cards	-	-	-	-	-	-	-	-	-	-
Oil companies' cards	24,8	29,3	32,5	36,6	35,6	39,3	42,8	43,8	43,8	35,35
Use of bank cards in shops' terminals	-	-	-	-	-	-	-	:	1,5	5

Table 17: Use of payment terminals (EFTPOS) 1991-2000. Amount (in billions of NOK)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total	16,1	22,4	31,7	43,0	55,9	75,4	100,8	127,1	153,5	182,2
Banks' payment terminals, total	8,4	14,1	21,8	33,2	41,8	58,6	81,0	105,5	129,9	153,2
Bank cards	:	:	:	:	38,5	54,6	75,4	98,6	121,5	143,5
Payment cards issued by international credit card companies	:	:	:	:	0,4	0,5	0,8	0,8	0,9	0,7
Domestic credit cards	:	:	:	:	2,9	3,4	4,7	6,1	7,5	9,0
Oil companies' payment terminals, total	7,7	8,2	9,8	9,8	14,0	16,9	19,9	21,6	23,6	29,1
Bank cards	2,6	2,5	3,1	1,6	4,3	5,4	7,3	8,6	10,1	13,7
Payment cards issued by international credit card companies	-	-	-	-	-	-	-	-	-	-
Domestic credit cards	:	:	:	:	0,1	0,2	0,3	0,3	0,4	0,5
Oil companies' cards	5,1	5,8	6,7	8,2	9,6	11,3	12,3	12,6	13,1	14,9
Use of bank cards in shops' terminals	-	-	-	-	-	-	-	-	1,6	4,7

Table 18: Number of payment cards 1991-2000 (thousands)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total	3 147	3 434	3 667	4 100	5 025	5 766	6 583	7 527	8 406	9 157
Bank cards	1 970	2 121	2 082	1 999	2 561	2 835	3 227	3 561	3 734	4 021
Domestic credit cards	342	375	389	452	480	589	514	620	687	672
Payment cards issued by international credit card companies	836	938	1 196	1 649	1 984	2 343	2 842	3 346	3 985	4 465
Combined cards	:	:	:	1 041	1 597	1 879	2 287	2 759	3 186	3 498
Number of cards minus combination cards counted twice	:	:	:	3 059	3 428	3 887	4 296	4 768	5 220	5 659
<i>Of which:</i>										
Debit cards	:	:	:	:	2 630	2 912	3 320	3 563	3 773	4 081
Credit cards	:	:	:	:	798	976	976	1 205	1 447	1 579
Oil companies' cards	777	806	948	1 033	1 372	1 592	1 713	1 772	1 633	1 429

Table 19: Number of agreements

	2000
E-banking agreements	933 335
Mail giro agreements	3 108 420
Number of direct debits	3 500 000
Number of direct debit beneficiaries	6 041
Direct debits where payees have power of attorney	558
Direct debits where payees have no power of attorney	616

D Cash withdrawals in Norway

Table 20: Cash withdrawals. Number of transactions (millions)

	1995	1996	1997	1998	1999	2000
Total	:	126,3	128,6	129,0	144,7	236,7
Cash withdrawals at the counter	:	28,7	24,7	21,9	37,4	27,9
Commercial banks	:	28,7	24,7	21,9	18,8	15,6
Savings banks	:	:	:	:	18,7	12,3
ATM withdrawals	87,4	97,6	103,9	107,1	107,3	106,0
Commercial banks	36,6	41,5	44,1	46,3	45,7	46,1
Savings banks	50,8	56,1	59,8	60,8	61,6	59,8
Cash withdrawals at payment terminals (EFTPOS)	:	:	:	:	:	102,9

Table 21: Cash withdrawals. Total amount (in billions of NOK)

	1995	1996	1997	1998	1999	2000
Total	:	84,6	194,3	191,8	191,1	264,2
Cash withdrawals at the counter	:	:	99,8	89,7	85,6	120,9
Commercial banks	:	118	100	90	86	72
Savings banks	:	:	:	:	:	49
ATM withdrawals	74,9	84,6	94,5	102,1	105,5	106,1
Commercial banks	31,8	37,1	41,4	45,7	47,0	48,9
Savings banks	43,1	47,4	53,1	56,4	58,5	57,2
Cash withdrawals at payment terminals (EFTPOS)	:	:	:	:	:	37,1

E Use of payment instruments

Table 22: Use of Norwegian payment instruments 1999-2000. Number of transactions (millions)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total	371,9	386,4	384,2	431,1	465,7	508,4	564,3	634,1	695,3	753,7
Giros total	287,0	295,7	282,2	313,5	324,5	335,2	343,9	360,0	371,3	361,8
Electronic giros	64,0	76,1	79,7	86,7	101,7	125,1	146,5	173,9	202,7	212,7
Paper-based giros	223,0	219,6	202,5	226,7	222,9	210,1	197,4	186,2	168,5	149,1
Payment cards total	38,7	52,6	70,4	91,3	118,8	156,1	207,5	264,6	317,7	385,7
Electronic use	34,2	47,3	64,9	86,5	113,8	151,5	200,9	256,0	307,3	376,5
Manual/paper-based use	4,5	5,3	5,5	4,8	5,0	4,5	6,6	8,6	10,4	9,2
Cheques total	46,2	38,1	31,6	26,3	22,4	17,1	12,9	9,4	6,3	6,2

Table 23: Use of Norwegian payment instruments 1999-2000. Total amount (in billions of NOK)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total	2 294,2	2 221,9	1 885,4	2 237,2	2 474,5	4 257,4	4 683,4	4 781,9	5 450,0	5 613,9
Giros total	1 808,9	1 789,5	1 543,3	1 859,4	2 074,8	3 921,5	4 358,8	4 464,6	5 147,0	5 283,6
Electronic giros	1 182,8	1 225,5	999,7	1 121,9	1 309,3	2 440,6	2 935,6	3 223,2	4 057,4	4 408,5
Paper-based giros	626,1	564,0	543,6	737,5	765,5	1 480,9	1 423,2	1 241,4	1 089,5	875,2
Payment cards total	11,1	16,6	24,9	41,9	57,8	80,4	104,1	134,6	164,1	167,5
Electronic use	11,1	16,6	24,9	34,8	49,3	74,6	97,4	125,3	151,2	155,1
Manual/paper-based use	:	:	:	7,1	8,4	5,8	6,7	9,3	12,9	12,4
Cheques total	474,2	415,8	317,2	335,8	342,0	255,5	220,5	182,7	138,9	162,7

Table 24: Giro services 1994-2000. Number of transactions (millions)

	1994	1995	1996	1997	1998	1999	2000
Giros total	313,6	324,6	335,1	343,9	360,0	371,3	361,8
Electronic giros total	86,7	101,7	125,1	146,5	173,9	202,7	212,7
Terminal payments (closed network)	70,6	83,0	97,8	109,1	126,1	129,9	120,3
Payments over the Internet	-	-	:	:	3,2	14,5	34,6
Payments by phone	0,9	1,3	6,7	13,4	18,2	28,3	28,8
Direct debits	15,3	17,4	20,6	24,0	26,3	30,0	29,0
Paper-based giros total	226,9	222,9	210,0	197,4	186,2	168,5	149,1
Mail giros	88,6	96,9	101,1	104,3	106,9	107,0	90,2
Giros delivered at the counter	116,1	106,5	91,4	78,8	65,6	52,2	52,9
<i>Of which:</i>							
Cash payments	72,0	62,5	46,3	37,1	28,1	22,9	20,4
Account debits	25,0	25,0	27,1	27,4	24,5	29,2	32,4
Various giros registered in banks	19,1	19,1	18,1	14,2	13,0	-	-
Terminal payments sent as money orders	22,1	19,5	17,5	14,3	13,7	9,4	6,1

Table 25: Giro services 1994-2000. Total amount (in billions of NOK)

	1994	1995	1996	1997	1998	1999	2000
Giros total	1 859,4	2 074,9	3 921,5	4 358,8	4 464,6	5 147,0	5 283,6
Electronic giros total	1 121,9	1 309,3	2 440,6	2 935,6	3 223,2	4 057,4	4 408,5
Terminal payments (closed network)	1 051,7	1 233,6	2 310,6	2 779,2	3 041,1	3 798,7	4 060,7
Payments over the Internet	-	-	:	:	7,3	39,7	93,3
Payments by phone	1,5	2,1	11,3	22,8	31,0	55,6	52,5
Direct debits	68,7	73,6	118,7	133,6	143,8	163,5	202,0
Paper-based giros total	737,5	765,6	1 480,9	1 423,2	1 241,4	1 089,5	875,2
Mail giros	181,0	214,9	858,0	830,2	649,8	597,6	527,7
Giros delivered at the counter	549,0	544,6	569,7	557,2	561,0	473,9	336,1
<i>Of which:</i>							
Cash payments	183,4	175,4	188,4	179,1	126,5	143,8	111,5
Account debits	175,3	175,2	206,5	247,8	308,5	330,1	224,6
Various giros registered in banks	190,3	194,0	174,8	130,3	126,0	-	-
Terminal payments sent as money orders	7,5	6,1	53,2	35,8	30,6	18,1	11,4

Table 26: Total use of Norwegian payment cards. Cash withdrawals and goods payment 1991-2000. Number of transactions (millions)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total card use	104,8	122,8	145,0	171,7	207,8	255,4	314,4	374,7	429,1	496,2
Banks	95,7	111,5	132,1	156,2	189,7	232,8	285,1	337,9	385,0	441,0
Domestic credit cards	0,6	0,6	0,7	0,8	1,1	1,2	1,4	1,7	1,9	2,4
GE Kapital Finans AS	:	:	:	:	:	:	:	:	0,7	0,8
DnB Kort AS	:	:	:	:	:	:	:	:	0,2	0,05
Gjensidige NOR	:	:	:	:	:	:	:	:	1,0	1,5
Payment cards issued by international credit card companies	8,5	10,6	12,3	14,7	16,9	21,4	27,9	35,1	42,2	52,8

Table 27: Total use of Norwegian payment cards. Cash withdrawals and goods payment 1991-2000. Total amount (in billions of NOK)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total card use	11,6	14,9	17,1	109,2	135,8	166,4	204,6	242,6	277,1	314,6
Banks	:	:	:	92,1	116,0	141,5	173,3	204,4	232,3	259,8
Domestic credit cards	1,4	2,1	2,3	2,5	3,2	3,8	4,2	4,5	5,1	5,4
GE Kapital Finans AS	:	:	:	0,8	1,1	1,4	1,5	1,7	1,9	2,1
DnB Kort AS	:	:	:	0,2	0,3	0,3	0,4	0,4	0,4	0,1
Gjensidige NOR	:	:	:	1,5	1,9	2,1	2,2	2,4	2,8	3,1
Payment cards issued by international credit card companies	8,8	11,0	12,7	14,6	16,6	21,1	27,1	33,7	39,7	49,4

Table 28: Total use of payment cards issued by international credit card companies 1991-2000. Number of transactions (millions)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total use of payment cards issued by international credit card companies	10,1	12,6	14,7	17,7	19,9	25,2	32,5	40,4	48,5	59,6
American Express	1,1	1,2	1,3	1,6	1,4	1,6	2,0	2,2	2,4	3,0
Diners Club Norge AS	1,9	2,3	2,6	2,9	3,2	3,7	4,3	5,1	5,4	5,9
Europay Norge AS	2,2	2,8	3,6	4,5	5,4	7,1	9,3	11,4	13,3	15,3
VISA Norge AS	4,9	6,3	7,1	8,8	9,9	12,8	17,0	21,7	27,3	35,3
<i>Of which:</i>										
Non-residents' use of payment cards issued by international credit card companies	1,6	2,0	2,4	3,0	3,0	3,8	4,6	5,3	6,2	6,7
Use of Norwegian payment cards issued by international credit card companies	8,5	10,6	12,3	14,7	16,9	21,4	27,9	35,1	42,2	52,8

Table 29: Total use of payment cards issued by international credit card companies 1991-2000. Total amount (in billions of NOK)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total use of payment cards issued by international credit card companies	10,2	12,8	14,8	17,1	19,1	24,3	30,9	38,1	45,2	54,8
American Express	1,5	1,6	1,8	1,7	1,9	2,6	3,1	3,5	4,3	4,2
Diners Club Norge AS	2,5	2,7	3,0	3,4	3,7	4,1	4,8	5,6	6,0	6,8
Europay Norge AS	2,2	2,7	3,5	4,4	5,2	7,1	9,6	12,1	14,0	16,8
VISA Norge AS	4,0	5,8	6,5	7,6	8,3	10,5	13,4	16,9	20,8	27,0
<i>Of which:</i>										
Non-residents' use of payment cards issued by international credit card companies	1,4	1,8	2,1	2,5	2,5	3,2	3,8	4,4	5,5	5,4
Use of Norwegian payment cards issued by international credit card companies	8,8	11,0	12,7	14,6	16,6	21,1	27,1	33,7	39,7	49,4

Table 30: Purchase of goods and services with Norwegian payment cards 1991-2000. Number of transactions (millions)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Purchase of goods and services, total	:	:	:	:	118,8	156,1	207,5	264,6	317,7	385,7
Bank cards	:	:	:	:	103,8	137,6	184,2	234,8	282,7	342,6
Domestic credit cards	:	:	:	0,3	0,4	0,5	0,4	0,7	0,8	0,9
Payment cards issued by international credit card companies	:	:	:	12,7	14,5	18,1	22,9	29,1	34,2	42,2

Table 31: Purchase of goods and services with Norwegian payment cards 1991-2000. Total amount (in billions of NOK)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Purchase of goods and services, total	:	:	:	:	57,8	80,4	104,1	134,6	164,1	167,5
Bank cards	:	:	:	:	42,9	60,0	82,8	107,2	133,1	130,6
Domestic credit cards	:	:	:	1,4	1,8	2,1	1,9	3,1	3,5	3,3
Payment cards issued by international credit card companies	:	:	:	11,8	13,1	18,3	19,4	24,3	27,5	33,6

Table 32: Cheques 1991-2000. Number of transactions (millions)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total use of cheques	46,2	38,1	31,6	26,3	22,4	17,1	12,9	9,4	6,3	6,2
Savings banks	24,9	20,0	16,3	13,7	12,8	9,8	7,4	5,6	3,9	4,6
Commercial banks	21,3	18,1	15,3	12,6	9,6	7,3	5,5	3,8	2,4	1,5

Table 33: Cheques 1991-2000. Total amount (in billions of NOK)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total use of cheques	474,2	415,8	317,2	335,8	342,0	255,5	220,5	182,7	139,0	162,7
Savings banks	103,9	81,5	90,3	110,5	159,4	103,9	87,8	72,6	65,9	107,4
Commercial banks	370,3	334,3	226,9	225,3	182,6	151,6	132,7	110,1	73,1	55,3

Table 34: Cross-border use of payment cards. Number of transactions (thousands)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total	5 098	6 828	7 681	9 603	10 607	13 483	17 280	21 419	25 647	29 701
Use of Norwegian cards abroad	3 527	4 809	5 283	6 560	7 534	9 573	12 530	15 800	18 986	22 560
Domestic credit cards	:	:	:	:	0	0	1	1	2	1
American Express AS	425	400	400	650	520	610	750	844	968	722
Diners Club Norge AS	467	560	584	629	669	725	816	899	900	927
Europay Norge AS	679	825	959	1 176	1 465	1 936	2 747	3 500	3 983	4 393
VISA Norge AS	1 956	3 024	3 340	4 105	4 782	6 168	8 042	10 326	12 805	16 132
Eufiserv					98	134	174	230	328	385
<i>Of which:</i>										
Cash withdrawals	:	:	:	:	1 244	1 752	3 845	4 528	5 806	6 866
Use of non-residents' payment cards in Norway	1 571	2 019	2 398	3 043	3 073	3 910	4 750	5 618	6 661	7 141
American Express	300	315	300	400	209	246	279	289	605	578
Diners Club	92	130	141	153	156	186	231	256	269	260
Europay	501	636	837	1 050	1 130	1 508	1 730	1 983	2 096	2 266
VISA	678	938	1 120	1 440	1 501	1 872	2 359	2 798	3 262	3 627
Eufiserv	:	:	:	:	77	98	151	293	429	411
<i>Of which</i>										
Non-residents' cash withdrawals in Norway	:	:	:	:	527	717	539	1 296	1 561	1 672

Table 35: Cross-border use of payment cards. Total amount (in millions of NOK)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total	4 847	6 751	7 533	8 862	9 797	12 463	16 109	20 294	24 980	28 707
Use of Norwegian cards abroad	3 412	4 959	5 474	6 366	7 254	9 269	12 336	15 846	19 484	23 279
Domestic credit cards	:	:	:	:	0	0	1	1	2	1
American Express AS	600	550	600	600	637	718	861	905	1 490	977
Diners Club Norge AS	565	600	611	661	708	769	892	1 033	1 038	1 135
Europay Norge AS	664	809	957	1 174	1 436	1 958	2 794	3 725	4 301	4 905
VISA Norge AS	1 583	3 000	3 306	3 931	4 473	5 824	7 788	10 182	12 653	16 261
<i>Of which:</i>										
Cash withdrawals	:	:	:	:	1 871	2 515	5 333	6 490	8 388	9 894
Use of non-residents' payment cards in Norway	1 435	1 792	2 059	2 496	2 543	3 194	3 773	4 448	5 496	5 428
American Express	400	400	400	450	420	467	513	560	1 159	594
Diners Club	110	120	117	121	122	141	170	187	201	198
Europay	456	522	646	803	860	1 196	1 387	1 615	1 694	1 928
VISA	469	750	896	1 122	1 141	1 390	1 703	2 086	2 442	2 708
<i>Of which</i>										
Non-residents' cash withdrawals in Norway	:	:	:	:	675	915	716	1 478	1 504	1 532

Table 36: Foreign currency cheque, foreign currency giro and MoneyGram transfers from Norway. Number of transactions (thousands).

	1994	1995	1996	1997	1998	1999	2000
Total	1 177	1 101	1 116	976	688	588	456
Foreign currency cheques	272	210	271	198	136	144	105
Giros total	905	891	845	778	547	435	337
Foreign currency giros	-	48	113	130	1	0	0
Eurogiro	905	843	732	648	546	435	337
<i>Of which:</i>							
Giros (account to account transactions)	541	488	419	341	287	194	135
Incoming and outgoing payments	364	355	313	307	259	242	202
MoneyGrams	:	:	:	:	4	9	14

Table 37: Foreign currency cheques, Eurogiros and MoneyGram transfers to Norway. Number of transactions (thousands)

	1994	1995	1996	1997	1998	1999	2000
Total	303	283	233	206	191	578	408
Foreign currency cheques	:	:	:	:	:	398	246
Eurogiro	303	283	233	206	191	179	161
Giros (account to account transactions)	178	174	180	136	115	102	88
Incoming and outgoing payments	125	109	53	70	76	77	73
MoneyGrams	:	:	:	:	0	1	1

F Prices in the payment system

Table 38: Prices in NOK for payment transactions and cash withdrawals 1991-2001. Weighted averages for all banks

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Payment transactions										
Giros										
<i>Electronic giro services</i>										
Phone giro	:	:	:	:	2,02	2,45	2,33	2,31	2,38	2,16
Internet	:	:	:	:	:	:	1,98	2,03	2,01	1,99
Direct debit	:	:	:	:	:	1,52	1,60	1,51	1,60	1,81
Unnotified remittance	0,77	0,89	0,92	0,93	1,34	1,62	1,64	1,59	2,14	2,82
Notified remittance	1,77	2,08	2,12	2,18	3,00	3,12	3,53	3,44	4,03	4,27
Remittance with customer identification	:	:	:	:	:	1,09	1,02	0,99	1,03	1,30
Unnotified company terminal giro	:	:	:	:	1,33	1,20	1,26	1,20	1,95	1,64
Notified company terminal giro	:	:	:	:	2,83	2,78	3,08	3,03	3,15	3,59
Company terminal giro with customer ident.	:	:	:	:	:	0,93	0,91	0,92	0,88	1,02
<i>Paper-based services</i>										
Mail giro	:	2,14	2,48	2,88	3,76	3,88	4,04	4,25	4,84	5,14
Giro, account debits	6,82	9,30	9,74	9,98	10,14	12,73	13,30	15,28	16,92	18,67
Giro, cash payment	7,79	8,82	9,20	11,00	16,51	17,95	18,46	23,40	25,67	27,37
Remittance sent as a money order	6,96	8,91	9,55	10,77	13,57	22,52	23,12	25,72	27,79	30,47
Company terminal giro sent as a money order	:	:	:	:	13,57	22,35	23,41	25,01	26,06	30,11
Optical character recognition (OCR) - File	:	:	:	:	0,80	0,82	0,80	0,79	1,35	1,02
Optical character recognition (OCR) - Return	:	:	:	:	2,15	2,38	2,40	2,12	3,56	4,01
Payment cards										
Payment terminal (EFTPOS)	1,16	1,87	1,88	2,02	2,05	2,20	2,13	2,07	2,19	2,24
Cheques										
Personal cheques	6,17	7,73	8,24	8,40	8,50	9,79	10,72	12,30	15,00	20,07
Business cheques	6,66	8,37	8,19	9,23	9,28	9,82	10,46	12,31	15,13	22,28
Cash withdrawals										
ATM withdrawals										
Own bank's ATMs outside business hours	:	2,20	2,83	2,91	2,93	3,31	3,49	3,79	3,71	4,20
Other banks' ATMs during business hours	0,70	1,23	1,63	1,65	1,87	1,95	2,25	2,19	2,71	4,08
Other banks' ATMs outside business hours	2,02	3,25	3,66	3,91	4,08	4,40	4,44	4,46	4,32	4,81

Table 39: Prices in NOK for transfers abroad 1.1.2000 – 1.1.2001. Weighted averages for all banks

	Paper-based		Electronic		Min. price electronic	Max. price electronic
	01.01.2000	01.01.2001	01.01.2000	01.01.2001		
Cheques to other countries						
NOK 100	135,9	137,2	59,7	78,4	0,0	200,0
NOK 2500	154,7	157,0	68,8	125,6	55,0	200,0
SWIFT						
<i>Regular transfer</i>						
NOK 100	94,5	104,7	50,0	53,3	10,0	140,0
NOK 2500	106,7	113,0	50,4	54,6	35,0	140,0
<i>Express transfer</i>						
NOK 1 000	260,5	265,2	281,3	224,3	40,0	450,0
NOK 100 000	375,5	380,4	318,3	315,8	40,0	1 000,0
NOK < 1 000 000	485,9	440,4	370,5	359,3	40,0	1 000,0

Explanation of tables

Background for the data:

The statistics about trends in Chapters 3 and 4 are designed to provide a complete picture of the infrastructure and use of different payment instruments in Norway. The information about giros, cheques, bank cards, ATMs and payment terminals owed by banks and retail chains has been obtained from the Norwegian Financial Services Association (FNH), the Norwegian Savings Banks Association, Entercard A/S, the Banks' Payment and Central Clearing House (BBS), Christiania Bank, DnB and EDB Fellesdata with associated banks. Information about payment cards, other than bank cards, and about oil companies' payment terminals has been obtained from VISA Norge A/S, Europay Norge A/S, Diners Club Norge A/S, DnB Kort A/S, GE Capital Bank, Union Bank of Norway, Statoil, Esso Norge A/S, A/S Norske Shell, Hydro Texaco A/S and Conoco Jet Norge A/S. Information about clearing and settlement has been obtained from Norges Bank, the Norwegian Central Securities Depository (VPS) and the Norwegian Interbank Clearing System (NICS). The rest of the information has been obtained from Statistics Norway, the Norwegian Post and Telecommunications Authority, the Banking, Insurance and Securities Commission and the Norwegian Financial Services Association (FNH).

Information underlying the price statistics discussed in Chapter 5 is based on a survey that covers 18 savings banks and nine commercial banks, including a new commercial bank that was part of the survey for the first time in 2001. The commercial and savings banks in the survey account for 91 per cent and 71 per cent respectively of the two bank groups' market shares measured by sight deposits. The prices obtained from the banks are standard prices in accordance with price lists as at 31.12.90, 01.01.92, 01.01.93, 01.01.94, 31.12.94, 01.01.96, 01.01.97, 01.01.98, 01.01.99, 01.01.00 and 01.01.01. All prices refer to the payer, with the exception of prices for OCR file, OCR return and direct debits, which refer to the payee. The fees charged to those demanding payment come in addition to the fees charged to the payer.

The price statistics through 2000 only refer to prices per payment transaction. Since 01.01.2001, we have also included periodic fees (annual fees) in the private customer market in order to provide a more complete picture of private customer's costs in connection with using payment services, but the statistics do not provide a similar overview for business customers. Discounts for account groups,

customer groups and/or individual customers are not included in the statistics.

The bank groups' average prices are calculated by weighting the price per transaction in each bank according to the bank's share of sight deposits. The average price for all banks in the survey is calculated by weighting the commercial banks' and savings banks' average prices by the bank groups' real market shares for payment services, measured by number of transactions.

The information about banks' income related to payment services has been obtained from Norges Bank's FIKS data base for bank statistics and is thus based on banks' official accounts.

Standard notations in the tables:

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

Definitions and concepts in the statistics:

Paper-based payment services: These payment services allow the payer and/or payee to use paper-based payment instruments (giros, cheques, etc) to send or receive payment.

Electronic payment services: These payment services allow both payer and payee to send and receive funds electronically (without the use of paper-based forms).

Giro:

Mail giros are paper-based giros sent directly from the payer by post to Postbanken/BBS for account debiting.

Miscellaneous giros registered in the bank: Cash payments and account debits related to paper-based giros registered in data processing centres other than DnB (Postbanken) and BBS.

Money order: A paper-based giro without the payee's account number which must be presented in the bank to receive payment.

Internet: E-banking services via the Internet.

Transfers by telephone/telebanking: Transfers from one account to another by telephone.

Terminal payments include remittances and company terminal giros. *Remittance:* A service established by BBS for transferring funds to payees, with and without a bank account, using a terminal solution. Used primarily by companies to effectuate individual payments, large-scale payments, account adjustments

etc. *Company terminal giro*: Collective term for company terminal payment solutions (corresponding to remittance) that have been established by someone (banks or data processing centres) other than BBS.

Direct debits include a number of special electronic payment agreements. This service allows the payee to debit the payer's account directly in accordance with a special agreement between the payer, payee, their bank connections and, in some cases, BBS.

OCR: A paper-based giro with a special bar code that makes it possible to register the amount and allows the payee to demand payment electronically. *OCR File*: the bank keeps the form. *OCR Return*: the form is sent to the payee.

CID: Customer identification that may be received electronically by the payee whether the payment is initiated electronically or in paper-based form.

Cards:

EFTPOS: Electronic Funds Transfer at Point of Sale. Payments and cash withdrawals (cash back) in connection with the use of payment cards in electronic payment terminals.

Payment cards are cards that may be used in payment systems that are available to everyone. A collective term for the card groups listed below, with the exception of oil companies' cards.

Debit cards are directly linked to the user's bank account. The cardholder has access to his/her account balance, including any overdraft facility, to effectuate payments. The payment amount is debited immediately from the user's account.

Charge cards are not linked to a bank account. The user receives an invoice from the card issuer for use (eg during the previous month). The invoice is then paid by means of another payment instrument, eg direct debit. The user has credit in the form of delayed payment, whereas the payee receives settlement from the card company.

Credit cards are charge cards that grant a certain amount of credit to the user. This credit is repaid according to a repayment plan.

Bank cards are debit cards issued by banks and attached to a bank account (with or without an overdraft facility). They contain customer identification so that card use may be registered in the bank's systems.

Domestic credit cards, which are designed for use in Norway, are issued by or in cooperation with DnB Kort A/S, GE Capital Bank and Union Bank of Norway.

Payment cards established by international card companies are debit cards and charge cards which are issued by or in cooperation with VISA Norge A/S, Europay Norge A/S, Diners Club Norge A/S and American Express Card Services DnB Kort A/S. The cards contain customer identification so that card use may be registered in the card companies' international network.

Combined payment cards, which combine a bank card, a domestic credit card and a payment card from an international credit card company, have been established as a result of cooperation between the issuers of the individual cards (eg a bank and VISA). The cards contain several kinds of customer information that allow access to the cooperating card companies' systems.

The oil companies' cards are not considered payment cards since they can only be used in the oil companies' own payment terminals.

Other:

SWIFT (Society for Worldwide Interbank Financial Telecommunications) is an electronic network (system) for transmitting messages. Used extensively in connection with large-value domestic transfers, eg between banks, and for cross-border transfers.

MoneyGram: A network for cross-border payments provided by DnB (Postbanken). Postbanken introduced MoneyGram in the autumn of 1997.

NBO: Norges Bank's Settlement System

NICS: Norwegian Interbank Clearing System. Jointly owned by the banks and operated by BBS, this system effectuates clearing and provides liquidity information.

NOS: Norwegian Futures and Options Clearing House

VPO: Securities settlement system.

Comments to the tables:

Table 7-9. Average daily turnover in NBO and NICS: The 1999 figures cover the period May to December 1999. The 2000 figures cover the entire year whereas the 2001 figures only cover the first quarter. There is some uncertainty about the statistics on NICS retail settlement.

Table 15. Number of payment terminals (EFTPOS) and the number of locations with payment terminals:

The number of payment terminals owned by oil companies through 1998 does not include terminals owned by FINA (bought up by Shell 04.03.99), whereas figures after 01.01.99 include these

terminals. Locations with payment terminals: Shops, post offices, petrol stations, restaurants and cafés, hairdressers, dentists, etc.

Table 18. Number of payment cards: Through 1997, bank card information was unavailable from 8 per cent of commercial banks measured by the banks' share of sight deposits. Since 01.01.98, information has been unavailable from an insignificant number of banks (less than 1 per cent).

Table 20 and 21. Cash withdrawals: *Cash withdrawals at the counter:* The share of commercial banks with information accounted for about 90 per cent of the commercial bank market measured by sight deposits through 1999. For 2000, the information about the number of withdrawals refers to all commercial and savings banks, while volume has been estimated by Norges Bank on the basis of information from a number of banks. *Cash back in connection with goods purchases:* Cash withdrawals in connection with payment card use at terminals that accept bank cards and are owned by banks, retail chains and oil companies. Figures and volume for 2000 are in some cases estimated by Norges Bank since data from some sources was unavailable.

Table 22 and 23. Use of Norwegian payment instruments; and Tables 24 and 25. Giro services: *Giro:* Figures through 1994 contain transactions between BBS and Postbanken that have been counted twice and do not include giros registered by anyone other than BBS and Postbanken. From 01.01.95 the double registrations have been weeded out, while giros registered in other data processing centres have been included. The giro amounts shown in italics do not include Postbanken's figures due to substantial uncertainty about the information gathered through 1995. *Payment cards:* Payments, including goods purchases, with Norwegian cards in Norway and abroad. *Electronic card use:* Figures through 1994 include payment card use in ATMs and in banks' and oil companies' payment terminals. Figures from 01.01.95 also include electronic card use in other payment terminals than those owned by banks and oil companies. Bank card turnover through 1999 includes cash withdrawals from payment terminals, while the figures from 01.01.2000 only include goods purchases. *Manual card use:* Some of the figures through 1994 are estimates from Norges Bank and are shrouded in uncertainty.

Tables 13, 14, 16, 17, 26-31, 34 and 35. Use of ATM network and payment terminals and use of payment cards:

Tables 13-17 refer to the use of Norwegian and foreign payment cards in Norwegian ATMs and

payment terminals, while Tables 25-31 refer to the use of Norwegian payment cards in Norway and abroad. The tables also include the use of combined cards (eg combined bank card/payment card established by international credit card companies). The use of combined cards is broken down by different card groups (such as bank card, VISA card etc) depending on which part of the card has been used. Information about withdrawals from other banks' ATMs (*Tables 13 and 14*) are estimates from Norges Bank and are shrouded in uncertainty. Figures through 1999 for bank card turnover in connection with goods purchases include cash withdrawals (*Table 31*). Since 01.01.2000 cash withdrawals have been presented in a separate table (*Table 21*) so that turnover only applies to goods purchases. The use of Norwegian payment cards abroad (*Tables 34 and 35*) refer primarily to the use of payment cards from the international credit card companies. To some extent, ie less than 1 per cent of the cases, domestic credit cards (Multikort in the Cirrus network) and bank cards (in the Eufiserv network) are also used. The breakdown of cash withdrawals, goods purchases and cross-border payments for American Express has been estimated by Norges Bank so that the figures are uncertain.

Tables 32 and 33. Cheques: Figures for commercial banks through 1994 are uncertain due to incomplete data.

Table 38. Prices for payment transactions and cash withdrawals. *Mail giros:* Average prices for mail giros refer to each individual giro. All banks in the survey charge postage for each mailing and these costs are not reflected in the tables. *Internet:* Prices refer to payments with CID. *Direct debits:* Prices refer to unnotified direct debits.

Table 39. Prices for transfers abroad: Prices for transfers to another country often vary with the size of the payment and the manner in which the customer sends the payment order to its bank (paper-based or electronically). Prices also vary according to the destination of the payment. Prices in the survey refer to transfers of fixed amounts in Europe. Prices do not include additional costs for cash payments, third country currency, confirmations and costs that the payer must cover for the payee.

General comments

Some figures have been revised in relation to previous years' reports.

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