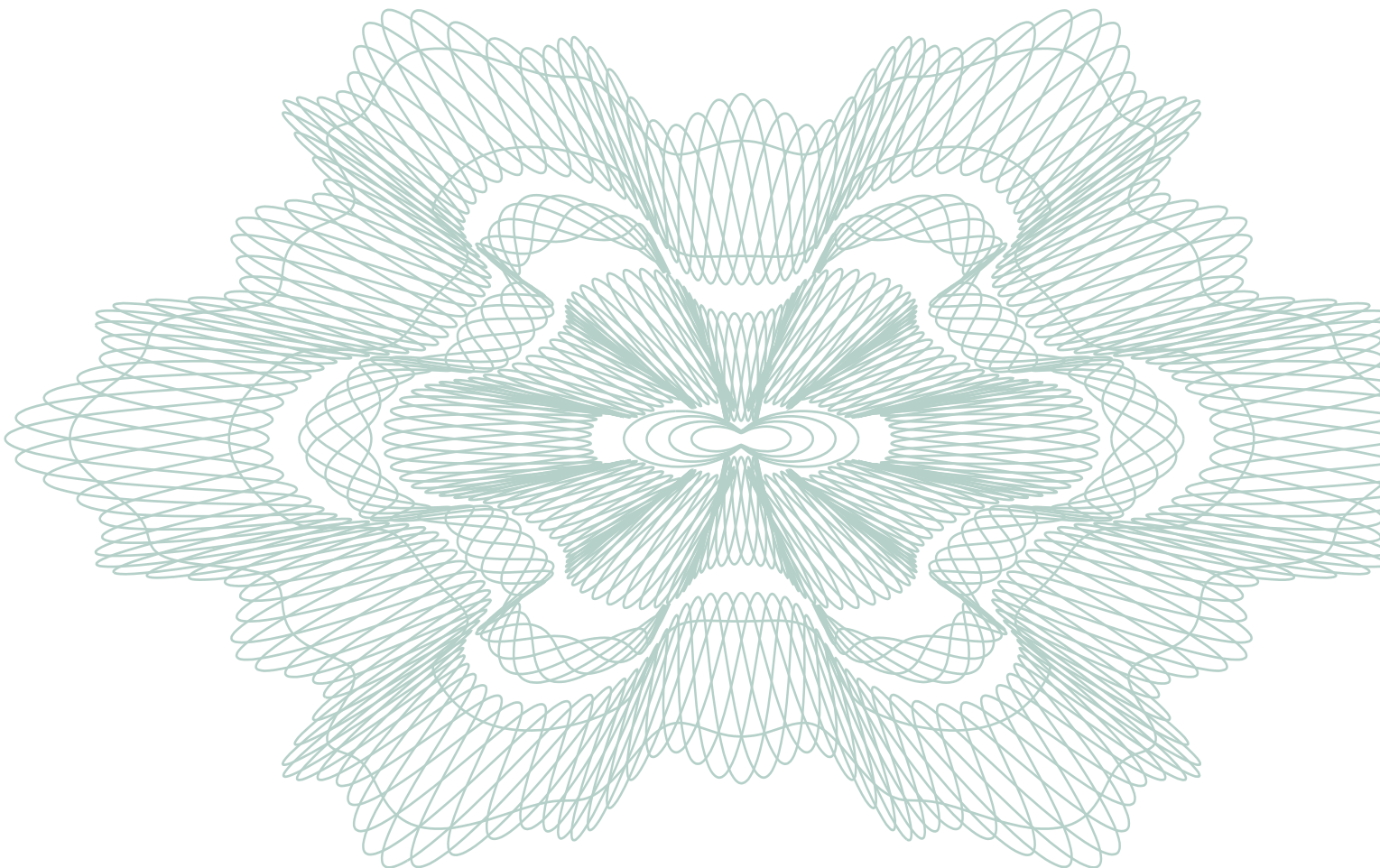




# Annual report on payment systems

2001

July  
2002



# Foreword

The Annual Report on Payment Systems is part of Norges Bank's work to promote an efficient payment system domestically as well as vis-à-vis other countries. This year's report provides the annual survey of the use and pricing of various payment instruments. The report also provides a summary of legal and contractual conditions which regulate the payment system.

Norges Bank has recently made public the basis for its oversight and supervision of the payment system. (See *Economic Bulletin 1/02* or Norges Bank's website, [www.norges-bank.no](http://www.norges-bank.no).) The risks to which banks are exposed through their participation in the payment system have received increased attention in the last 10 years, both internationally and at Norges Bank. Norges Bank has been given responsibility for authorisation and supervision of the interbank systems, i.e. banks' clearing and settlement systems. We also follow developments in customer-related aspects of the payment system, in part through this report.

It is important that there is correspondence between banks' costs in connection with producing various payment services and the prices customers pay to use them. The most cost-effective services will then be utilised and total expenses related to payment services will be limited. While price trends are easy to follow and can be reported annually, charting costs in the payment system requires far more work, both conceptually and technically. Norges Bank conducted such surveys earlier, in 1989 and 1994, and is currently cooperating with banking organisations and a number of individual banks to provide updated cost figures. According to the plan, the results of the survey will be published in the second half of 2002. This will improve the basis for the ongoing debate concerning price-setting and market behaviour in this segment of the economy.

*Svein Gjedrem*

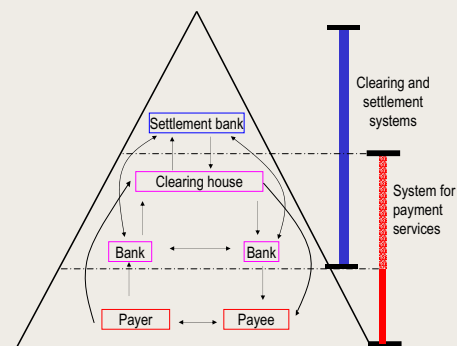
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# 1 | An efficient payment system

Chart 1.1 The payment system in Norway



Source : Norges Bank

## Risk in the payment system:

**Systemic risk** is the risk that problems in one financial institution will spread to another, thus threatening financial stability. Systemic risk originates in other types of risk.

**Settlement risk** is the risk connected with participating in a settlement and consists of credit and liquidity risk.

**Credit risk** is the risk of losses when another bank does not meet its payment obligations.

**Liquidity risk** is the risk that payment obligations are not settled at the agreed time and that refinancing is necessary.

**Legal risk** arises when the legal framework is unclear and legal uncertainties result in unexpected exposure for a market participant, which can in turn lead to losses.

**Operational risk** is the risk of losses due to malfunctions in computer systems, telecommunication systems or operational errors.

**An efficient retail payment system** requires a design that minimises production costs and provides high-quality payment services, thus allowing the fast, cost-effective and safe execution of retail payments. Retail payment services include payments by card, cheque or giro.

The payment system may be divided into two main areas, systems for payment services and interbank systems (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.

Large quantities of small and many large payments are transferred each day in the payment system. All in all, very large amounts are channelled daily through the clearing and settlement system. Banks' financial exposures in connection with settlement therefore entail considerable risk for the entire payment system. For example, the design of the payment system may be a source of systemic risk, i.e. the risk that financial problems in one institution will spill over to others. The central bank is interested in ensuring that the development and operation of payment systems will reduce systemic risk.

A payment system may be a source of settlement risk (credit and liquidity risk), legal risk and operational risk. The entry into force of the Act relating to Payment Systems, etc. in 2000 contributed to reducing legal risk. When Norges Bank assesses an application for the authorisation of interbank systems, it investigates the size of participants' exposure in connection with trades and transfers. Banks' exposures and settlement risk in connection with currency trades will be reduced when the multinational settlement system for foreign exchange trades, Continuous Linked Settlement (CLS), starts operations in NOK in 2003. Operational risk, for example in the form of operational disruptions, is also reduced when banks focus on routines, backup solutions, expertise and preparedness. Under the auspices of the Contingency Committee for Financial Infrastructure, which includes representatives of the industry and Norges Bank, exercises that simulate operational disruptions are carried out. This is useful in the work on reducing operational risk.

Stability and low risk in interbank systems are important preconditions for a smoothly functioning modern economy. At the same time, a payment system should be efficient. The objective is therefore both to promote stability by reducing risk elements in interbank systems and to increase efficiency by focusing on the organisation of interbank and retail payment systems. This dual objective implies striking a balance between efficiency and risk in the payment system.

## 1.1 Retail payments are efficiently organised in Norway

The production of payment services requires substantial resources. Studies of payment services in the US estimate the total costs of producing payment services at about 3% of GDP.<sup>1</sup> Users' costs in terms of time and travel to gain access to the necessary infrastructure to execute payments

<sup>1</sup> See Hancock and Humphrey (1998), page 1574.

come in addition. These costs are not easy to measure, but we may assume that they account for a considerable share of the public's total use of resources in the payment system. An efficient organisation of the payment system therefore generates substantial social gains. The following general criteria may be applied in the assessment of how efficient the market for payment services is organised in a country:

- Prices that reflect production costs for each product
- Exploitation of economies of scale and network externalities in the production of payment services
- The degree of competition in the payment system

### *Price determination in the Norwegian payment system functions well*

If the market for payment services is to function efficiently, prices should reflect the cost of producing payment services. Such prices give users an incentive to choose the most cost-effective payment instruments and this contributes to an optimal balance between supply and demand for the various types of payment services. Norway is one of the few countries in the world where prices for payment services largely reflect the cost of producing these services. The use of electronic payment services was relatively limited in Norway in the 1980s, but is now among the highest in the world. Studies show that this is because Norwegian banks operate with cost-based prices that make it advantageous for users to choose services that are reasonable to produce.<sup>2</sup>

There are two factors in particular that disrupt efficient price determination in the payment system: cross-subsidisation and float. Cross-subsidising payment services through, for example, lower deposit and/or higher lending rates may result in low or no charges for payment services. This can lead to an overuse and overproduction of payment services compared with the optimal level. Cross-subsidisation can also weaken competition by hampering business start-ups. Surveys show that the scale of cross-subsidisation in the Norwegian payment system is relatively low and that it has probably declined since 1995.<sup>3</sup> Float is also a disruptive element in the pricing of retail payments. Float does not give banks an incentive to offer swifter payments and the public is not given a complete picture of the costs associated with payments. The Act relating to financial agreements, which entered into force in July 2000, contains provisions that eliminate float in the Norwegian payment system.

### *The Norwegian retail payment system is organised efficiently...*

It is important to seek a design that exploits economies of scale and network externalities and, at the same time, safeguards competition in the market. A sound balance

### **Users' costs connected with payment services**

Transaction fees and fixed costs such as annual fees, start-up fees etc. are the public's direct costs in connection with payment services. These determine how expensive one payment instrument is in relation to another. Time and travel costs and general costs connected with the use of the infrastructure underlying a payment instrument, such as mailing costs, the Internet and telecommunications costs, etc. are considered indirect costs. Indirect costs provide a measure of how *user-friendly* one payment instrument is in relation to another.

**Float income** for banks is generated when funds are transferred from one account to another, for example through the giro system, and do not bear interest for the payer or the payee for a period.

<sup>2</sup> See Humphrey, Kim and Vale (2001).

<sup>3</sup> See, for example, Larsen (1999).



**Network externalities** are primarily a result of demand. They entail that users' utility increases as the number of individuals using a payment service increases. The system of payment terminals in shops etc. (EFTPOS) is an example of a system that is characterised by network externalities. Increasing use of payment cards makes it profitable for banks to expand the EFTPOS system. When there are more EFTPOS terminals, users can benefit more from having payment cards since they can be used at more shops. As a result, more people will acquire payment cards and existing users will increase their card use. This, in turn, provides the basis for increasing the number of terminals.

**Interbank fees** are fees that one bank pays to other banks for payment services provided by these banks for the first bank's customers. The banking associations have agreed upon the interbank fees for ATM withdrawals, direct debits, cheques and other services. Banks are able to make bilateral changes in the interbank fees.

### Considerations regarding an efficient market for retail payments

**Competition** is the main mechanism promoting efficiency in the production of payment systems. Competition forces producers to reduce their costs and keep prices low. This also encourages effective use of existing technology. On the other hand, the production of payment services, especially electronic services, is marked by high fixed costs and low variable costs. Therefore, there are considerable **advantages of scale and interoperability** in the market for payment systems. This means that one or a few companies with high transaction volumes will be more cost-effective than many companies with low transaction volumes. Due to **network externalities** in the market for payment services, interoperability among banks promotes efficiency in the market. Therefore, cost-effective production of payment services demands few producers and interoperable payment systems. High fixed costs, cooperation among banks and the formation of oligopolies may, however, reduce competition and prevent new participants from entering the market. When competition is limited, established banks can charge higher fees and offer lower product quality than when competition is more intense.

between these considerations can be achieved by separating production from the supply of payment services. A small number of suppliers can produce payment services since there are probably economies of scale in production. Systems that are offered by these suppliers should be interoperable in order to take advantage of network externalities. Banks buy services from the producers and compete to supply services to the end-user. Effective competition in the market for payment services also means that entry barriers do not exist. It is particularly important that new operators (primarily banks) can have swift access to the underlying infrastructure on non-discriminatory terms. In order to prevent producers from using their market power, an ownership structure and agreements that give banks control over the price and quality of products supplied may be permitted. This dichotomous production model promotes efficiency in the retail payment system and appears to be particularly appropriate for small countries.

Production in the Norwegian payment system is organised as described above, with a separation between producer/sub-supplier and suppliers of payment services to end-users. The Banks' Payment and Central Clearing House (BBS) and EDB Fellesdata are the two most important sub-suppliers of payment services in Norway. Banks compete for customers and new banks can gain swift access to the underlying infrastructure. Interbank charges ensure that banks are paid for the services they perform for other banks' customers. This gives banks an incentive to promote coordination (instead of competition) through a joint infrastructure, and has therefore been approved by the Norwegian Competition Authority. However, few producers of sub-supplier services may increase operational risk in the payment system. The fewer the number of sub-suppliers, the greater are the consequences of operational disturbances for the payment system. It is therefore decisive that sound agreements and routines have been established which ensure stable sub-supplier services for banks.

### *...and competition has probably intensified*

Competition in the Norwegian market for payment services has probably intensified in recent years. There are two main reasons for this. First, the extensive use of electronic services reduces the importance of banks' branch networks. It is thus easier for new operators to enter the market. We have seen examples of such start-ups in Norway during the past two years. Second, it is easier for the public to compare banks' prices and the services offered, and the information costs of switching banks appear to have been reduced.<sup>4</sup>

## 1.2 Nordic comparison

A high share of payment transactions are executed through electronic payment instruments in all of the five

<sup>4</sup> See Vesala (2001), page 195.

Nordic countries, Denmark, Finland, Iceland, Sweden and Norway.

The Nordic countries have fairly similar payment systems. All of the countries have legislation that adheres to EU legislation in the area. All of the countries report that they satisfy the BIS' ten Core Principles for Systemically Important Payment Systems. All of the countries have both a real-time gross settlement system operated by the central bank and one or more systems for net settlement of payments. The former ensures that large-value payments are settled continuously, unlike the net settlement system where banks' transfer orders are settled on a net basis.

Debit cards are popular in all of the Nordic countries, and the giro is (with the exception of Iceland) the instrument with the highest turnover (value). All of the countries have a high portion of electronic payments, through the use of cards in EFTPOS terminals, the use of electronic giros (excluding Iceland) and the electronic transmission of cheque data between banks (excluding Norway). So far, Norway and Iceland are the only two countries that have not yet developed a nationwide, permanent system for e-money payments.

Cash holdings in Norway came to 3.6% of GDP in 1999. This is a medium-sized level compared with the other Nordic countries, but small in relation to many other countries. For Iceland, the figure was 1.4% and for Sweden 4.9% of GDP. Cash holdings rose slightly in the Nordic countries towards the end of 1999 due to fears of problems in payment systems in connection with the turn of the millennium.

Payment cards and giros are the dominating instruments in the Nordic countries (Chart 1.2). In all of the countries, more than 90% of payments are effected using these instruments, with the exception of Denmark where the share is only 75% because of the popularity of cheques and direct debiting. In Iceland, 91% of all payments were made with payment cards in 1999, with cheques accounting for the remaining payments. Both cheques and cards are substitutes for cash, and cash use is marginal as a result. As noted, the giro is not used in Iceland.

Development of the ATM system started fairly early in the Nordic countries, and the number of ATMs is now increasing at a slow pace throughout the area. The growth potential for this service will probably soon be exhausted. Denmark, Norway and Finland had between 400 and 500 ATMs per one million inhabitants in 1999.<sup>5</sup> We know that ATMs are used more frequently in both Finland and Sweden than in Norway.

The number of EFTPOS terminals is high in the Nordic countries. Denmark and Norway had the highest coverage in 1999 with 13.2 per thousand inhabitants, while Sweden had the fewest with 9.1 per thousand inhabitants.<sup>5</sup> The number is rising, and inhabitants are using the terminals ever more frequently. In Norway, there were as many as 76 transactions per inhabitant in 1999, which was the highest in the Nordic area.<sup>5</sup> Each Swedish inhabitant used payment terminals 26

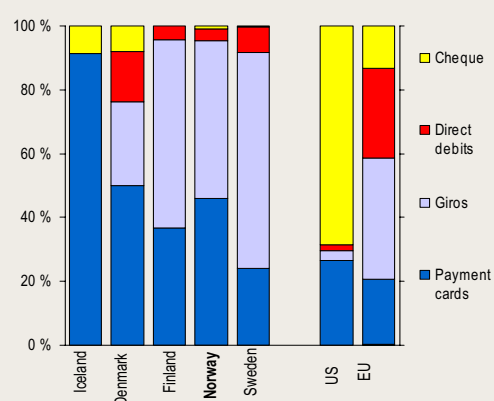
### Clearing and settlement in the Nordic countries

Danmarks Nationalbank offers real-time gross settlement in KRONOS. KRONOS handles settlements for the multilateral netting system for small-value payments. Security transactions are settled in the central securities depository (Værdipapircentralen). In Sweden, real-time gross settlement of large-value payments goes through RIX. All clearing house and clearing bank settlements go through RIX. This is also the case for securities (via the central securities depository) and derivatives (via OM). In Finland, Finlands Bank provides real-time gross settlement in BoF-RTGS. Small amounts are netted bilaterally between banks via PMJ with final settlement in BoF-RTGS. BoF-RTGS also executes settlements for POPS, the bilateral netting system for large-value transactions, express transfers and cheques. Netting and settlement of securities transactions go through AKP, the central securities depository in Finland. The Central Bank of Iceland's real-time gross settlement system became operational in 2000. The Icelandic banks' clearing system and the Icelandic payment card system execute settlement in the central bank. The central bank's system is not yet fully developed.

### Connection to TARGET

Partly due to the introduction of the euro, the payment systems in the Nordic countries have moved in different directions in recent years. Finland has introduced the euro, discontinued use of the Finnish mark and is connected to the European Central Bank's settlement system, TARGET. Denmark does not participate in EMU. Although Denmark's currency is still the Danish krone, Denmark is connected to TARGET through KRONOS, which provides settlement in both Danish krone and euro. Sweden has not introduced the euro either, but like Denmark has a system that provides settlement in both Swedish krona (K-RIX) and euro (E-RIX). E-RIX is connected to TARGET. The EEA countries Iceland and Norway have national settlement systems and are not connected to TARGET.

**Chart 1.2** Use of payment instruments in the Nordic countries. Per cent (1999).



Source: Norges Bank



times in 1999, while the figure for the other countries is somewhere between that of Sweden and Norway.

Cashback in connection with goods purchases is fairly widespread in Norway and its use is increasing in Sweden and Denmark.<sup>5</sup> These three countries have an online debit card system that permits the withdrawal of cash in addition to the purchase of goods in a single transaction. In Norway, the limit is NOK 1 000, whereas there is no fixed limit in the other countries and shops determine how much the customer can withdraw. In Finland, it is only possible to withdraw cash in those shops that have an online EFTPOS system. The withdrawal must be made as a separate transaction, and the limit is EUR 400. In Finland, it is not very common to make such withdrawals.

The giro is the most important payment instrument in Norway, accounting for nearly half of all payments and about 95% of the total value of transactions. The situation is the same in the other Nordic countries, with the exception of Iceland where most of the transaction value is connected to cheque payments. In Norway, Denmark and Finland, the postal giro and bank giro have been combined into one giro system. In Sweden, both the postal giro and bank giro still exist. The Swedish Competition Authority has responded negatively to a proposal to combine the giro systems into one joint system on the grounds that it would reduce competition. Internet banking services (payment through an Internet bank) are increasing rapidly in all of the Nordic countries at the expense of the paper-based giro services, such as the mail giro in Norway.

<sup>5</sup> Figures are not available for Iceland.

	Bel-gium	Canada	Den-mark	Fin-land	France	Ger-many	Ice-land	Italy	Nether-lands	Norway	Swe-den	Switzer-land	UK	US
Notes and coins as % of GDP	5.1	3.8	3.0	2.3	3.3	6.6	1.4	6,0	4.6	3.6	4.9	8,1	2,9	5.6
Balance in transaction accounts as % of GDP	20.1	19.0	27.5	31.6	21.7	21.2	13.9	33,3	30.4	25.2	40.4	25,9	59,8	6.6
No. of inhabitants per branch	1 221	2 233	1497	2 533	2 350	1 481	.	1 400	2 523	1 630	2 249	1 097	1 743	3 469
<b>ATMs</b>														
No. per 1 mill. inhabitants	608	874	496	422	549	562	..	523	423	448	291	655	476	831
No. of withdrawals per year per inhabitant.	17.4	53.4	..	46.1	..	18.4	..	8,6	33.4	24.0	35.0	12,2	33,1	39.9
Average amount, USD	104.8	65.4	..	67.2	..	156.0	..	150,9	78.4	122.7	100.0	172,9	88,8	68.0
<b>EFTPOS terminals</b>														
No. per 1 mill. inhabitants	9 767	13 278	13 155	11 617	13 529	3 658	..	7 542	9 186	13 124	9 155	8 602	11 765	8 604
No. of transactions per year per inhabitant	38.6	54.3	69.7	51.1	41.3	5.2	..	8,1	44.2	75.9	26.0	19,1	..	27.5
Average amount, USD	55.7	29.5	43.5	41.7	48.7	84.4	..	79,3	48.6	56.6	68.0	76,2	...	43.0
<b>Instruments' % share of no. of non-cash payments</b>														
Cheques	5.8	31.5	7.9	0.2	..	4.0	8.6	25,6	1.0	0.9	0,3	0,8	29.0	68.6
Giro (credit transfers)	51.9	9.4	26.0	58.8	..	50.6	0	37,2	41.6	49.1	67,5	68,4	17.6	3.2
Direct debits	9.4	7.5	15.7	4.4	..	40.2	0	10,4	28.9	4.3	8,1	3,6	18.9	1.7
Card transactions	28.9	51.7	49.4	36.7	..	5.2	91.4	17,6	28.6	45.7	24,1	27,3	34.6	26.6
Due to the variable quality of the figures for the different instruments' percentage share of the value of all non-cash instruments, these figures are not presented.														

## 2 | Important international and domestic developments

Efficiency and risk associated with the Norwegian payment system are affected both by changes in international and domestic legislation and infrastructure and by new products and payment solutions. The following are the most important changes that have taken place over the past year.

### 2.1 International regulation and infrastructure

#### *Developments in the EU/EEA and the ECB*

The transition to the economic and monetary union in the EU was completed on 1 January 2002 when euro banknotes and coins were introduced in the 12 euro area countries. The changeover to the new currency was an exercise in logistics of historic dimensions and was fully implemented as planned. As from 28 February 2002, euro banknotes and coins are the only legal tender in all the euro area countries. On 1 January 2001, euro notes and coins worth approximately EUR 145bn were already in circulation in addition to national notes and coins equivalent to EUR 287bn. As from 28 February, a total of approximately EUR 242bn in euro banknotes are in circulation. About EUR 38bn denominated in national notes and coins has still not been exchanged for euro cash, and the European Central Bank (ECB) believes that some of the cash holdings have either been lost or kept as collectors' items. The new notes and coins were in active use in all countries from the first day. The supply of euro notes and coins posed few problems. A lack of notes and coins in the lowest denominations was reported in some euro area countries early on in the changeover due to unexpectedly high demand. The demand for euros in exchange for national notes and coins in the euro area was greater than expected. This placed a heavy burden on the central banks' sections for control, accounting and destruction of notes. As a result, the national central banks had to stop exchanging cash for the European banks for short periods.

TARGET (Trans-European Automated Real-time Gross Settlement Express Transfer) is the EU countries' joint real-time gross settlement system in euros. The European Central Bank (ECB) is responsible for TARGET. About one-third of the number of cross-border transactions in TARGET are customer-initiated payments, while the rest are interbank transactions.

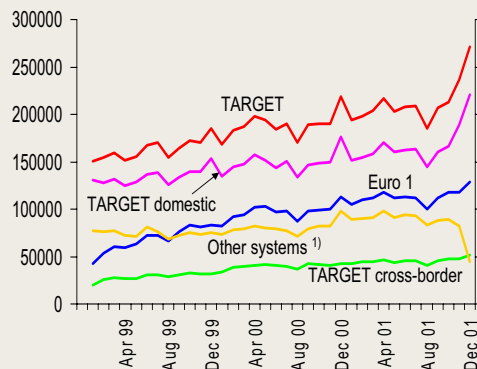
At the request of the ECB, the International Monetary Fund (IMF) has assessed the TARGET system in relation to the BIS Core Principles for systemically important payment systems. This assessment is part of the Financial Sector Assessment Program (FSAP) conducted by the IMF and the World Bank in member countries. The IMF's report was published in October 2001 and concluded that TARGET meets the BIS standards.

Monthly statistics for the daily average volume and

#### **Different denominations of the euro:**

1 euro is divided into 100 cents. Banknote denominations are 500, 200, 100, 50, 20, 10 and 5 euro. The coins have a nominal value of 2 and 1 euro as well as 50, 20, 10, 5, 2, and 1 cent.

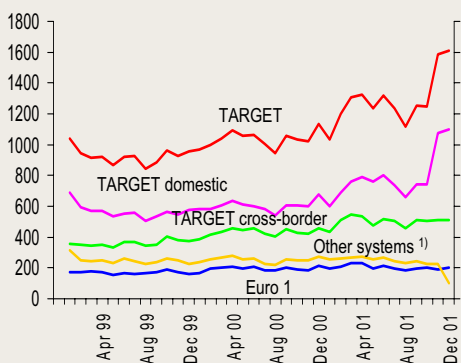
**Chart 2.1** Clearing and settlement systems in euro. Number of transactions. Daily average (monthly)



Source: ECB

<sup>1)</sup> EAF, PNS, SEPI, POPS. The German EAF was discontinued in November 2001.

**Chart 2.2** Clearing and settlement systems in euro.  
Total amount in billions. Daily average (monthly)



Source: ECB

<sup>1)</sup> EAF, PNS, SEPI, POPS. The German EAF was discontinued in November 2001.

The **Euro Banking Association (EBA)** is a cooperation forum for European banks to promote cost-effective and user-friendly cross-border euro payment systems. The EBA was founded in 1985 by 18 European banks and the European Investment Bank (EIB). The European Commission and the Bank for International Settlements (BIS) supported the establishment of the EBA. The EBA now has around 150 members who are all established within the EU.

amounts in TARGET in the period January 1999 to December 2001 show that the number of transactions and total amounts increased in 2001, but that there was a decline in average amounts per transaction. Average amounts in cross-border transactions in TARGET are more than double the amounts in domestic TARGET transactions. The increase in volume and value in domestic TARGET transactions in November and December 2001 is due to the changeover to a new clearing and settlement system, RTGSplus, in Germany. When the new system was established, the EAF (the old net settlement system) and the ELS (previously, the German part of the TARGET system) were both discontinued.

Four clearing systems (net settlement systems) for cross-border payments in euros are also in operation and have been approved by the ECB. For participants in these systems, final settlement of payments is made through TARGET. The largest of these, Euro1, is operated by the Euro Banking Association (EBA). Euro1 is a net settlement system for large-value cross-border payments in the EU area. Euro1 has its own settlement account at the ECB and about 100 banks in 20 countries, including Norway, participate in the system. The EBA requires that all participants are established within the EU and that all the participating banks are either resident in the EU or have a branch in an EU country. Over half of the transactions in Euro1 are transfers on behalf of customers, while interbank transactions account for the largest values transferred in the system. The other three payment systems are also net settlement systems, but they were primarily developed to meet needs in national markets in Finland, France and Spain.

In November 2000, the EBA put the STEP1 (Straight-Through Euro Payment System) into operation. This is a system for low-value cross-border euro payments. Clearing and settlement for these transactions are handled through Euro1. In December 2001, approximately 160 participating banks were registered in STEP1. In December 2001, the Union Bank of Norway applied to participate in STEP1 pursuant to the EEA Agreement. The EBA board reacted positively to the application, and a solution will be found to facilitate the inclusion of the Union Bank of Norway during summer 2002. The Union Bank of Norway is the first Norwegian bank to apply for participation in STEP1 without being a member of the EBA. DnB is already a member of the EBA through its London branch and participates in both Euro1 and STEP1.

A new regulation relating to cross-border euro payments, which entered into force on 1 January 2002, established the principle that charges for cross-border payments in euros should be the same as charges for corresponding domestic payments in euros. The regulation was adopted by the European Parliament and the Council in December 2001. The regulation includes the following provisions:

- The deadline for harmonisation of charges for all cross-border electronic payment transactions in euro (using payment cards or e-money instruments, including cash withdrawals) up to EUR 12 500 is 1 July 2002.

- The deadline for harmonisation of charges for all customer-initiated cross-border credit transfers up to EUR 12 500 is 1 July 2003 at the latest.
- The current obligation to report cross-border payments up to EUR 12 500 to national authorities for balance-of-payment statistics shall be repealed by 1 July 2002.
- By 1 July 2004 at the latest, the EU Commission shall prepare a report on the effect of the regulation on infrastructure for cross-border payments and on its implications for cross-border and domestic charges in the internal market. In particular, the report will give advice on whether it is appropriate to raise the amount to EUR 50 000 after 1 January 2006.
- The regulation does not apply to prices for cross-border cheques. The reason for this is that regulating the prices for cheques could stimulate the use of an inefficient paper-based payment instrument in the internal market.

The regulation is EEA-relevant and must be implemented in Norway for cross-border euro payments. It may also include cross-border payments in national currencies between EU/EEA countries outside the euro area if these countries so desire. This means that the regulation can be made applicable to smaller cross-border payments in Norwegian kroner. The implementation and scope of the regulation are being assessed by the Ministry of Finance.

### *Central banks' oversight of the payment system*

In Monetary Review, 2nd Quarter 2001, Danmarks Nationalbank (the central bank of Denmark) provided an overview of its oversight of payment and securities settlement systems. Pursuant to the Danmarks Nationalbank Act, the Nationalbank is to maintain a safe and secure currency system and to facilitate and regulate the traffic in money. Danmarks Nationalbank bases its oversight of systemically important systems on existing international standards. It is stressed that oversight does not imply approval and that operators still have an independent responsibility for the systems. The Nationalbank will publish an annual statement on its oversight of payments and securities settlement systems.

In Economic Review 3/2001, Sveriges Riksbank (the central bank of Sweden) gave an account of its oversight of the financial infrastructure. The Riksbank also bases its oversight on the BIS Core Principles for Systemically Important Payment Systems. The purpose of the oversight is to determine whether the payment systems satisfy the requirements of safety and efficiency. The result of the oversight conducted by the Riksbank is published in the bank's biannual Financial Stability Reports. In Financial Stability Report 2001:2, the Riksbank assesses the bank's work in relation to the BIS standards for central banks' responsibility for oversight. The report concluded that the Riksbank fulfils responsibilities A, B and D, but only

### **Central banks' responsibility for implementing requirements related to systemically important payment systems:**

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

partially fulfils responsibility C because the central securities depository still does not meet all the BIS standards. In autumn 2001, the IMF conducted an assessment of the financial sector in Sweden as part of the Financial Sector Assessment Program (FSAP). The result of the assessment will be available in the course of 2002.

The Bank of Finland (Finland's central bank) oversees payment and settlement systems to safeguard their stability, operational safety and efficiency (see Section 3 of the Act on the Bank of Finland). The ECB lays down general guidelines for the oversight of payment systems within the euro area, while the national central banks are responsible for the oversight itself. Finland's financial sector was assessed by the IMF in spring 2001 (FSAP), and the result of the assessment was published on 21 November 2001. The IMF has concluded that all three systemically important payment

## Box 2.1: The BIS/IOSCO recommendations for Securities Settlement Systems

The IOSCO (International Organisation of Securities Commissions) and the BIS (Bank for International Settlements) have jointly prepared a report containing recommendations for the design and operation of the securities settlement system.<sup>1</sup> The 19 recommendations in the report specify the minimum level the systems should maintain and deal with the systems' legal framework, risk management, access, governance, efficiency and transparency. The report also recommends certain minimum requirements for the regulation and oversight of securities settlement systems. The purpose of the recommendations is to increase efficiency and limit risk in securities settlements. The recommendations are as follows:

- 1) Securities settlement systems should have a well-founded, clear and transparent legal basis in the relevant jurisdictions.
- 2) Confirmation of trades between direct market participants should occur as soon as possible after trade execution, but no later than the trade date (T+0). Where confirmation of trades by *indirect* market participants (such as institutional investors) is required, it should occur as soon as possible after trade execution, preferably on the trade date (T+0), but no later than the next day (T+1).
- 3) Rolling settlement should be adopted in all securities markets. Rolling settlement means that trades are settled a given number of days after the trade date rather than at the end of an "account period". Final settlement should occur no later than three days after the trade date (T+3). The benefits and costs of a settlement cycle shorter than three days after the trade date (T+3) should be considered.
- 4) The benefits and costs of a central counterparty (CCP) should be evaluated. A CCP interposes itself between trade counterparties, becoming the buyer to every seller and the seller to every buyer. Where such a mechanism is introduced, the CCP should rigorously control the risks it assumes.
- 5) Securities lending and borrowing (or repurchase agreements and other economically equivalent transactions) should be encouraged as a method for expediting the settlement of securities transactions. Barriers that inhibit the practice of lending securities for this purpose should be removed.
- 6) Securities should be immobilised or dematerialised and transferred by book entry in central securities depositories (CSDs) to the greatest extent possible.
- 7) CSDs should eliminate principal risk by linking securities transfers to funds transfers in a way that achieves delivery versus payment (DvP).
- 8) Final settlement should occur no later than the end of the settlement day. Intraday or real-time finality should be provided where necessary to reduce risks.
- 9) CSDs that extend intraday credit to participants, including CSDs that operate net settlement systems,

<sup>1</sup> The report is available on <http://www.bis.org/publ/cps46.pdf>



should institute risk controls that, at a minimum, ensure timely settlement in the event that the participant with the largest payment obligation is unable to settle. The most reliable set of controls is a combination of collateral requirements and limits.

- 10) Assets used to settle the ultimate payment obligations arising from securities transactions should carry little or no credit or liquidity risk. If central bank money is not used, steps must be taken to protect CSD members from potential losses and liquidity pressures arising from the failure of the cash settlement agent whose assets are used for that purpose.
- 11) Sources of operational risk arising in the clearing and settlement process should be identified and minimised through the development of appropriate systems, controls and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Contingency plans and backup facilities should be established to allow for timely recovery of operations and completion of the settlement process.
- 12) Entities holding securities in custody should employ accounting practices and safekeeping procedures that fully protect customers' securities. It is essential that customers' securities be protected against the claims of a custodian's creditors.
- 13) Governance arrangements for CSDs and CCPs should be designed to fulfil public interest requirements and to promote the objectives of owners and users.
- 14) CCDs and CCPs should have objective and publicly disclosed criteria for participation that permit fair and open access.
- 15) While maintaining safe and secure operations, securities settlement systems should be cost-effective in meeting the requirements of users.
- 16) Securities settlement systems should use or accommodate the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions.
- 17) CSDs and CCPs should provide market participants with sufficient information for them to identify and evaluate accurately the risks and costs associated with using the CSD or CCP services.
- 18) Securities settlements systems should be subject to transparent and effective regulation and oversight. Central banks and securities regulators should cooperate with each other and with other relevant authorities.
- 19) CSDs that establish links to settle cross-border trades should design and operate such links to reduce effectively the risks associated with cross-border settlements.

The recommendations cover a wide area and the definition of the securities settlement system is relatively broad. This means that institutions dealing with registration, storage, clearing and settlement of securities trades are included. The recommendations have been further expanded to cover systems for all types of securities, including equities, industrial and government bonds and money market instruments. The recommendations apply to domestic and cross-border trades and do not distinguish between securities issued in industrialised countries and in developing countries. Because securities settlement systems are organised in a number of different ways in the different countries, the recommendations focus on the functions that must be maintained rather than the institutions that provide them. This means that the various recommendations may be relevant to central securities' depositories, stock exchanges, trade associations, central counterparties, settlement banks, custodian banks and other interested parties. In Norway, the recommendations will particularly affect the Norwegian Central Securities Depository (VPS) and the Norwegian Futures and Options Clearing House (NOS), as well as the Banking, Insurance and Securities Commission and Norges Bank.

In Norway, this area is currently regulated by several Acts, including the Payment Systems Act, the Securities Trading Act, the Act relating to the Norwegian securities registry (Norwegian Central Securities Depository) and the Stock Exchange Act, and general regulations relating to insolvency and agreements. The bill proposed on 8 March 2002 (Proposition No. 39 (2001-2002) to the Odelsting) will replace the current securities registry Act and entail amendments to other Acts. The bill was deliberated by the Storting on 4 June 2002.

A preliminary assessment indicates that most of the BIS/IOSCO recommendations have been satisfied in the Norwegian securities system. However, Norges Bank and the Banking, Insurance and Securities Commission will conduct a detailed review in the course of 2002 to assess to what extent the recommendations have been satisfied in Norway.



### Settlement risk in foreign exchange transactions

In currency trading, the parties meet their obligations in two independent national payment systems. This implies a risk for banks, since they normally deliver foreign currency that has been sold before receipt of the purchased foreign currency has been confirmed. If one party does not meet its obligations, the counterparty may at worst incur a loss equivalent to the principal in the trade. This means that the banks' foreign exchange positions may be regarded as an unsecured loan. This risk is also known as Herstatt risk.

### Counterparty exposure

The Banking, Insurance and Securities Commission and Norges Bank conduct a survey of banks' largest counterparty exposures every six months. In the most recent survey, six of the largest Norwegian banks were asked to specify exposures in foreign exchange settlement risk.

The main findings were as follows:

- At 30 June 2001, the banks' total exposure in connection with foreign exchange trading was approximately NOK 140bn.
- These banks' largest overall exposure to a single counterparty was over 12 per cent of their total exposure.
- In the most extreme case, one bank had an exposure of over 120 per cent of its core capital to a single counterparty.

For further details, see Norges Banks' *Financial Stability* report 2/2001, Chapter 4.

systems in Finland satisfy the BIS Core Principles and that the oversight procedures are on the whole satisfactory.

A description of the oversight responsibility in other leading central banks, such as the ECB, the Bank of England, the Reserve Bank of Australia and others, are presented in Norges Bank's Payment Systems Report 2000.

### *Clearing and settlement systems for foreign exchange transactions*

In recent years, the central banks have focused particular attention on foreign exchange settlement risk. The banking industry has followed up by implementing a number of risk-reducing measures. The most important of these measures is the establishment of the foreign exchange settlement system Continuous Linked Settlement (CLS). CLS will operate on the principle of payment versus payment (PvP) for settlement of foreign exchange contracts. Banks participating in CLS will settle their mutual transactions in a joint multi-currency bank, the CLS Bank (CLSB). Participants will maintain accounts in the CLSB in all the currencies that participate in CLS. Bank payments in the CLSB will be made to and from CLSB accounts in the respective central banks. A transaction between two banks will only be settled and the amount paid if both parties have met their obligations. The credit risk associated with foreign exchange transactions will thus be virtually eliminated.

CLS is scheduled to be put into commercial operation in the course of the third quarter of 2002 for transactions in the seven largest currencies (AUD, CAD, EUR, GBP, JPY, CHF, USD). In October 1999, Norges Bank's Executive Board decided that Norwegian kroner could be included in CLS, and in October 2001, CLS announced that the Scandinavian currencies were eligible for inclusion. These currencies will be included at the latest one year after the system has been launched for the first seven currencies.

## Box 2.2: CLSB Settlement Day

Key times in a normal CLSB settlement day (Central European Time, CET):

- 00:00 - Final deadline for unilateral cancellation of a transaction
- 00:00 - Preliminary pay-in schedule is issued to the banks
- 06:30 - Final deadline for bilateral cancellation of a transaction
- 06:30 - Final pay-in schedule is issued to the banks
- 07:00 - Settlement starts
- 08:00 - Final deadline for first pay-in to the CLSB
- 09:00 - Settlement executed
- 12:00 - Pay-ins to be completed
- 12:10 - Pay-outs to be completed

This schedule presupposes that all the participants meet their payment obligations at the right time and that there are no operational problems.

CLS implies a closer link between the settlement systems in the participating countries. This means that any problems with regard to liquidity or operational stability in one settlement system can easily spread to other countries. Work to prepare for CLS has to a great extent focused on identifying and reducing this risk. An important element in identifying the level of liquidity risk linked to the system is CLS' own simulations of the liquidity-related consequences of CLS, based on the current pattern of transactions. These simulations show both liquidity needs associated with CLS and what the consequences may be if a bank does not honour its payment obligations.

CLS calculates a bank's payment obligations on the basis of submitted transactions. For settlements to be carried out, the following must be in place: i) a bank's accounts in the CLSB must have a positive balance, taking all currencies into account, ii) a bank's lack of paid-in funds in a currency must not exceed a specified limit, known as the "short position limit", and iii) the sum of a bank's lack of paid-in funds in all currencies where the bank has a negative balance must not exceed a specified limit, known as the "aggregate short position limit". CLS only requires the banks to have a positive balance overall – and not in each currency – so as to minimize the need for liquidity in connection with CLS settlements. However, the banks have to complete their pay-in in each currency in the course of the CLSB's core opening hours (7:00-12:00 CET). Banks that do not meet this requirement may be subject to strict sanctions, and the CLSB will hold back pay-outs owed to these banks.

If a bank does not have the funds to make its pay-ins, the CLSB may not be able to settle submitted transactions or make payments for transactions that have already been settled. The risk of banks not being able to meet their payment obligations has been reduced by the introduction of so-called in/out swaps. This means that banks can reduce the amount they are due to pay by swapping currency within the CLSB, while the currency swap is reversed outside CLS the same day. This reduces banks' liquidity needs in CLS, but reintroduces a measure of credit risk since one leg of the transaction is settled outside the system.

Even though CLS has allowed for the use of in/out swaps, there may be cases where a bank does not meet its payment obligations. In these cases, the CLSB will issue a "pay-in call for account value", requesting the bank to make the necessary payments. If the bank still cannot fulfil its obligations, transactions involving this bank cannot be settled through the CLSB. This may mean that the bank's counterparties will lack cover, even though they have paid in sufficient amounts according to their own pay-in schedules. The CLSB will issue a "pay-in call for settlement" to the relevant counterparties to ensure that as many transactions as possible are settled.

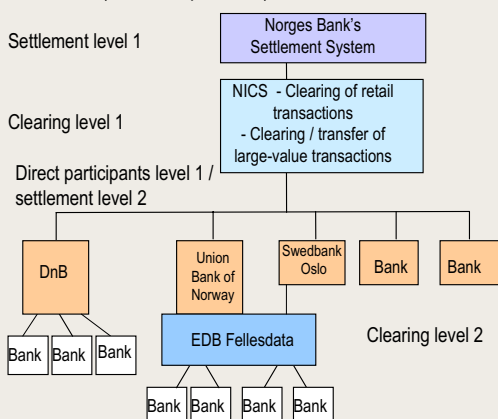
If the transactions have been settled, but the CLSB has not received sufficient payment in an individual currency to be able to make pay-outs, the CLSB will issue a "pay-in

call for currency close” to those banks that have paid in too little in the relevant currency. If the banks do not increase their payments, the CLSB will contact a liquidity provider. Liquidity providers are banks that have made a commitment to provide CLS with liquidity at short notice if the CLSB does not have sufficient liquidity to pay out for completed transactions in a particular currency. This can be done by means of a swap or by the CLSB purchasing liquidity from one of these banks.

CLS requires both participating banks and settlement systems in participating countries to show operational stability. All participating banks must also show that their solutions and procedures are efficient enough for them to participate in CLS. In addition to this, CLS invests extensive effort in safeguarding operational stability in its own solutions. Until CLS is put into commercial operation, these solutions will be tested with both normal and abnormal situations in mind.

In Norway, the banking industry and Norges Bank have worked in close cooperation to prepare for the inclusion of the Norwegian krone in CLS. This work includes issues related to liquidity, operating patterns and technical solutions. Preliminary assessments indicate that liquidity in Norwegian kroner is sufficient to include the krone in CLS. However, banks’ operating patterns may change when CLS commences operation, and this may affect banks’ liquidity. Efforts to find ways of improving liquidity in Norwegian kroner are therefore continuing. One relevant measure may be to alter operating patterns in the NBO (Norges Bank’s settlement system) so that other settlements do not take place during periods when the CLSB requires most liquidity. This will help to ensure that most of the liquidity in the NBO is available for pay-ins to the CLSB. In addition, more efficient solutions for cross-border collateral in the Scandinavian countries are being considered, so that banks that participate in settlements in more than one of these countries may more easily adjust their liquidity as needed in each currency.

**Chart 2.3** Clearing and settlement systems in Norway (from 12 April 2002)



Source: Norges Bank

## 2.2 Domestic regulation and infrastructure

### *Norges Bank’s oversight of interbank systems*

Act no. 95 of 17 December 1999 relating to payment systems, etc., entered into force on 14 April 2000. The Act provides Norges Bank with authorising and supervisory authority vis-à-vis the interbank systems in Norway. The term interbank system refers to systems based on common agreements for clearing, settlement or transfer of funds between credit institutions.

In 2001, Norges Bank’s enforcement of the Act has mainly consisted of processing applications for authorisation, ensuring that the authorised systems have satisfied the terms of authorisation as regards improvements, and following up particular incidents affecting the authorisation.

In 2001, Norges Bank processed a total of three applications for authorisation and four applications for exemption from

the authorisation requirement. All the applications were approved. The Operator Office for the Norwegian Interbank Clearing System (NICS), Den norske Bank (DnB) and the Union Bank of Norway were granted authorisation. The authorised systems are subject to supervision by Norges Bank. The smaller settlement systems operated by Swedbank Oslo, Sparebank1 Midt-Norge and SpareBank1 Vest, and the associated clearing system operated by Fellesdata were granted exemption from the authorisation requirement. DnB was granted authorisation for a new interbank system which will handle settlement for the majority of small Norwegian savings banks. These banks were phased into DnB's settlement system in the period 15 February to 12 April 2002. In the course of the authorisation process for the Union Bank of Norway, DnB and NICS systems, certain inadequacies were discovered, for example in the agreements between participants. Authorisation for these systems was granted on condition that these inadequacies were rectified. Notification to the EFTA Surveillance Authority, ESA, which is a condition for legal protection of transactions if a bank is placed under public administration, will only take place when these inadequacies have been rectified.

Analyses in connection with the authorisation process showed that the credit and liquidity risk associated with the various settlement systems is limited. However, the systems may change with regard to both participation and risk, which in turn may have implications for financial stability. As a basis for these analyses, Norges Bank requires reports on turnover, participation and exposures, as well as on testing of emergency solutions in the event of an interruption in operation. The NICS Operator Office and the Union Bank of Norway have submitted their reports. These reports show that neither the systems nor their use have developed in such a way as to require action by Norges Bank.

On the basis of information supplied in the authorisation applications and in subsequent correspondence, Norges Bank concluded that the interbank systems were suitably designed to deal with unexpected operational interruptions. Subsequent events have nonetheless revealed operational flaws in the systems. The operational failure at EDB Fellesdata on 2 August 2001 was of particular concern. It affected clearing and settlement functions included in the authorisation granted to the Union Bank of Norway, which are carried out by EDB Fellesdata on behalf of the bank. A week passed before the systems were fully operational again. As a result of this, follow-up measures were put into effect by the authorities and the banking industry to reduce the risk of serious interruptions in operations in the future. Norges Bank has, for example, instructed the relevant interbank systems to submit quarterly reports on interruptions in operation and the remedial measures implemented. In August 2001, the Banking, Insurance and Securities Commission and Norges Bank jointly initiated an inspection process to identify the underlying

#### **Conclusions of the Banking, Insurance and Securities Commission after the inspection of EDB Fellesdata and EDB Teamco AS:**

The operational failure on 2 August 2001 affected IT services in 114 savings and commercial banks. This shows that EDB Fellesdata (FD) and EDB Teamco AS (TC), owned by EDB Business Partner ASA (EDB BP), have taken on a central role as IT operators for Norwegian banks.

The Banking, Insurance and Securities Commission's comments with respect to FD and TC are mainly focused on certain shortcomings in these companies' primary objectives, management, control and coordination of activities. EDB BP admitted that the comments made by the Banking, Insurance and Securities Commission are relevant, and the company will be taking action to rectify the situation.

The Commissions' comments with respect to the banks affected by the operational failure concern the banks' control of agreements entered into in connection with outsourcing of important IT operations. Banks should in particular be careful to have the agreements, resources and qualified personnel that are required to manage the risk associated with outsourced activities.

## Box 2.3: Assessment of the Norwegian payment system against the BIS Core Principles for Systemically Important Payment Systems

The Group of Ten Committee on Payment and Settlement Systems (CPSS) under the Bank for International Settlements (BIS) has established ten main principles with which all systemically important payment systems in a country should comply. These principles are known as the BIS Core Principles. The Norwegian Act of 1999 relating to payment systems etc. has given Norges Bank the responsibility for authorisation and supervision in order to ensure stability in the most important Norwegian payment systems. Norges Bank considers the systemically important payment systems in Norway to be the banking industry's joint clearing system (NICS), the central bank's own settlement system (NBO) and the two private settlement systems operated by Den norske Bank (DnB) and the Union Bank of Norway. In light of its responsibility for authorisation, Norges Bank has assessed these systems against the BIS Core Principles. The main conclusions of this assessment are as follows:

- 1) Overall, Norway compares well with other countries with regard to the appropriate regulation of payment systems. Norges Bank considers Norwegian payment systems to have a well-founded legal basis in keeping with Core Principle I.
- 2) Participation in the systemically important systems in Norway is regulated by agreements between the participants and the operator responsible for the system. The agreements describe the rights and obligations participation involves. In keeping with Core Principle II, the individual participant is considered to have a clear understanding of the financial risk connected with participation in the system.
- 3) The interbank systems in Norway have developed procedures and arrangements to manage and contain the risk one participant can create for other participants or for the system. This is in keeping with Core Principle III. This principle states that the system should have clearly defined procedures for the management of credit 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) All the interbank systems in Norway provide prompt final settlement on the day of value, in keeping with Core Principle IV.
- 5) All systemically important payment systems have procedures and arrangements to ensure that settlement is completed even in the event that one or more participants with large single settlement obligations are unable to meet their obligations. This is in keeping with Core principle V.
- 6) Most of the transactions in NICS are settled through accounts in Norges Bank. Settlement risk in the two private settlement systems (Union Bank of Norway and DnB) is considered to be low. This is in keeping with Core Principle VI on limiting settlement risk in payment systems.
- 7) All four systemically important systems in Norway submitted documentation of contingency solutions designed to ensure completion of daily settlement when the main system is out of operation, in keeping with Core Principle VII.
- 8) Comparisons with other countries show that the means of making payments provided by the Norwegian payment system are efficient and user-friendly. This complies with Core Principle VIII, which states that systems should provide means of making payments that are practical and efficient.
- 9) The Payment Systems Act establishes the principle of transparency in access criteria for banks. The Act also states that banks entitled to operate in Norway have the right to participate in interbank systems and to use such systems in accordance with established charges and ordinary commercial conditions. This is in keeping with Core Principle IX on fair and open access to payment systems.
- 10) The interbank systems in Norway comply with Core Principle X, which states that these systems should be organised in an effective, accountable and transparent way.

*Reference:* Watne, Kjetil (2001) "Do Norwegian payment systems satisfy the new BIS recommendations?" *Economic Bulletin* 2/2001, pp. 91-98.



reasons for the operational failure at EDB Fellesdata. The Banking, Insurance and Securities Commission published its conclusions in February 2002. In addition, the banking industry has taken the initiative to improve stability in the interbank systems by imposing stricter requirements on testing, information about interruptions in operations and contingency planning for abnormal situations. When the results of this work are available, Norges Bank will assess whether further measures are required.

Under the Payment Systems Act, Norges Bank is required to notify the EFTA Surveillance Authority, ESA, of systems that fall within the scope of the Act. In this context, Norges Bank has so far notified the ESA of Norges Bank's settlement system (NBO) and the Union Bank of Norway and DnB settlement systems. In addition, Norges Bank notified the ESA of the securities settlement system (in NOK) and the Norwegian derivatives settlement system after these systems had been approved by the Banking, Insurance and Securities Commission.

In 2000, the Norwegian Central Securities Depository entered into an agreement with DnB regarding the establishment of a securities settlement system for securities quoted 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. There are at the moment no securities quoted in euros on the Oslo Stock Exchange, and consequently no transactions in the system. At year-end 2001, there were three participants in this system in addition to the Norwegian Central Securities Depository. The Banking, Insurance and Securities Commission authorised the Norwegian Central Securities Depository's new settlement system for transactions of securities quoted in euros in December 2001. Norges Bank notified the ESA of this system in January 2002.

### *Changes in Norwegian clearing and settlement systems*

Banks are exposed to credit risk in connection with payment systems when banks credit customers before settlement has taken place. For ordinary customer payments (giro transfers), this risk was eliminated when banks began crediting customers after settlement in summer 2000. In addition, banks changed over from so-called "T-copying" to "Y-copying" for payments sent using the SWIFT format (both gross transactions and transactions included in NICS-SWIFT netting) on 25 February 2002. This means that banks only receive information about a payment after it has been settled in the settlement bank, which allows customers to be credited after settlement so that the credit risk related to these payments is also eliminated. This changeover entails a major reduction in settlement risk, since this format is mainly used for sending large payments.

#### **Key concepts:**

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

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

**RTGS** (Real-Time Gross Settlement): Real-time gross settlement in which SWIFT transactions and specially marked transactions are settled immediately one by one in Norges Bank.

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

**SWIFT netting:** Medium-sized SWIFT payments (less than NOK 100m) are cleared in NICS and settled in Norges Bank six times daily.

**NICS retail netting:** Mainly ordinary bank customers' giro, card and cheque transactions, settled twice daily in Norges Bank.

**Securities settlement:** Clearing from the Norwegian Central Securities Depository (VPS) is settled once a day in Norges Bank (cash leg) and in the VPS (securities).

**T-copying** means that the payer's bank simultaneously notifies the clearing house and the payee's bank that payment is on the way. The payee's bank can thus make the amount available to the payee before the bank has received the remittance. This is a source of credit risk for the payee's bank. With **Y-copying**, the payer's bank does not notify the payee's bank. Notification comes from the clearing house at the same time as the money is transferred to the payee's bank. The credit risk is thus eliminated.



Norges Bank's own settlement risk has been reduced by the removal of loans without collateral (E-borrowing) to banks for retail and securities settlements. These loans involved a credit risk for Norges Bank and were in conflict with the principle that banks should have cover for their drawings on settlement accounts. This borrowing facility was therefore discontinued for these settlements when Norges Bank concluded that there was no longer any need for them. However, the E-borrowing facility was continued with lower limits for cash settlement and no limits for settlement linked to Norges Bank's own transactions. In order to ensure that the E-borrowing limits were adhered to, Norges Bank has introduced a maximum limit for withdrawals of cash outside NBO's opening hours. This limit is equivalent to the banks' E-borrowing limit and will not restrict normal withdrawals of cash. Introducing withdrawal limits contains the risk to which Norges Bank is exposed without reducing efficiency in the distribution of banknotes and coins.

To promote more efficient use of settlement services, Norges Bank introduced prices for these services as from 1 July 2001. There are three price elements: a connection fee for new participants, annual fees for account maintenance and participation in the net settlements in Norges Bank (infrastructure fee), and transaction prices. Discounts for high-volume transactions were introduced from 1 January 2002. With this pricing system, Norges Bank is on a par with other central banks as regards price structure and price level. Cost absorption is, however, still lower than in other central banks.

In March 2002, the Ministry of Finance tabled a bill on the registration of financial instruments, which proposes replacing the Norwegian Central Securities Depository's exclusive right to register securities in Norway by an authorisation that, if required, could be granted to several operators. The Act is expected to enter into force in early 2003. In the interests of financial stability, Norges Bank wishes to contribute to low risk and high efficiency in securities settlement. Norges Bank and the Norwegian Central Securities Depository are cooperating on a joint project to develop technical solutions that will enable several net settlements to be carried out daily. Introducing several secure settlements daily (i.e. settlements where debit positions have been controlled for cover) enhances the security and efficiency of securities settlement. The risk associated with securities settlement can be further reduced by the introduction of systems to ensure delivery versus payment (DvP) between brokers and between brokers and investors. Today's securities settlement has DvP between brokers, but not between brokers and investors. Consequently, operators in the industry have considered the possibility of establishing DvP at the investor level in Norway. This solution would eliminate risk between brokers and investors, and would consequently contribute to overall risk reduction in Norwegian securities settlement. The matter is currently being considered by the Norwegian Central Securities Depository and the banking industry.

In August 2001, a major project to modernise Norges Bank's settlement system (NBO) and increase efficiency was approved by the Executive Board of Norges Bank. Rapid developments in this field require settlement systems to be flexible, so that new technical and organisational requirements can be implemented into the systems quickly and easily. Settlement systems in Norway must be adapted to these developments. Future settlement systems must also allow Norges Bank to promote stability and efficiency in the payment system. In this connection, an extensive project has been launched to assess the organisation of clearing and settlement in the Norwegian infrastructure on a broad basis. A review has also been conducted of the central bank's responsibilities and tasks in the payment system area. Concentrating on core tasks and increasing efficiency in their execution are strategic goals for Norges Bank. Two important central bank tasks in the payment system involve being able to offer banks settlement in a risk-free payment instrument, i.e. claims on Norges Bank, and ensuring sufficient liquidity in the interbank market to prevent disruptions in clearing and settlement. The latter is accomplished by providing banks access to collateralised loans from Norges Bank. These primary tasks can be carried out without extensive involvement by Norges Bank in the operations and development of the settlement system. Norges Bank has therefore invited the banking industry to participate in a project to analyse alternatives to the present division of tasks in the Norwegian clearing and settlement system. The aim is to establish a division of tasks between the banking sector and Norges Bank that allows Norges Bank to concentrate on its core activities. It is assumed that the review will identify potential synergy gains that over time will reduce overall costs in the clearing and settlement system.

### *Contingency planning in the financial infrastructure*

Operational risk in the payment system has been the focus of increased attention both in Norway and abroad. Systematic contingency work, including exercises, is necessary in order to reveal flaws, decide on measures and understand how operational risk can be reduced in the payment system. In Norway, this work has been coordinated by the Contingency Committee for Financial Infrastructure (BFI). The BFI is a joint contingency body for the financial sector, established by a decision by Norges Bank's Executive Board in October 2000, after consultation with the Ministry of Finance and key participants in the financial sector. In 2001, the BFI established working routines for issuing warnings and providing information about actual and potential problems in the financial infrastructure, and discussed what part the committee should play in handling problems of this nature. The Contingency Committee has thus played a coordinating

role in the handling of individual problems that have arisen in the financial infrastructure, and the committee has been involved in a number of contingency exercises in the financial sector. The committee has also had a coordinating role since the terrorist attacks in the US in September 2001, both in charting the immediate effects and in following up the contingency measures initiated by the authorities in accordance with the Civil Defence and Emergency Planning System.

In recent years, a number of financial institutions in the Nordic countries have expanded their cross-border services, established branches in other Nordic countries and made acquisitions and formed financial conglomerates consisting of institutions in several countries. Examples are Danske Bank's takeover of Norway's Fokus Bank and the formation of the financial conglomerate Nordea, which includes the former Christiania Bank. To enable central banks to fulfil their responsibility to promote financial stability in an appropriate manner in this situation, the central banks and supervisory authorities in the Nordic countries have cooperated more closely to deal with issues such as contingency.

### 2.3 Important developments in the Norwegian market

Developing new products and services is important with a view to enhancing efficiency in the payment system in the long term. Consequently, keeping abreast of innovations in the market is important. Internet banking is now firmly established in Norway. There was a substantial increase in Internet banking in 2001, as there was in 2000. International surveys show that Norway is a world leader as far as Internet access is concerned. This promotes the use of the Internet for payment transfers and other banking services. Mobile phone density is also high in Norway compared with most other countries. The use of Internet services via mobile phones (WAP services), which has been available since 1999, is still limited.

The Norwegian Competition Authority's decision to prohibit exclusivity agreements for electronic bill presentment and payment (EBPP) was perhaps the most important event in the field of payment services in 2001. EBPP was introduced in Norway by the Banks' Payment and Central Clearing House (BBS) and EDB Fellesdata respectively in cooperation with various groups of banks and a number of enterprises. EBPP is an expansion of the services offered by banks to Internet banking customers, and came into general operation in Norway in spring 2001. This new solution offers enterprises a more efficient way of sending bills. Electronic bill payment is also considerably more user-friendly than other giro services for customers who use the Internet banking services. The reason for the Norwegian Competition Authority's decision was the exclusivity clause in the cooperation agreement between BBS and a large number of banks. According to the clause, banks that cooperate with

#### Use of the Internet in different countries

A survey conducted in 36 countries put Norway at the top of the list with the highest percentage of Internet users. Approximately 63 per cent of the 589 Norwegian respondents said they had used the Internet at least once over the past month. This survey was conducted in Norway in the period 23-26 April 2001. The other Scandinavian countries also figured high on the list, scoring higher than countries such as the US.

Source: Taylor Nelson Sofres (TNS), *Global eCommerce Report 2001*.

BBS were not allowed to present payment claims in their Internet banking solutions that had not been mediated by BBS. In the view of the Norwegian Competition Authority, the exclusivity agreement restricted competition in the market for the electronic presentment of payment claims in Norway's Internet banks, and the agreement was prohibited under section 3-10 of the Competition Act. No appeals have been filed against the decision and it will be valid until 1 January 2006.

In cooperation with DnB, Telenor Mobile has developed a new payment service based on digital media under the name of SmartPay. With SmartPay, products and services from SmartPay's suppliers may be paid for via a mobile phone. Users can either pay using a pre-filled e-purse, or by transferring funds directly from their own bank accounts or credit cards. Customers in banks other than DnB must sign direct debit agreements so that their bank accounts can be used in connection with SmartPay services. In addition, customers need a mobile telephone subscription and an individual agreement with another company (ZebSign AS), which regulates the use of an electronic ID in connection with SmartPay. The service has been in operation since September 2001 and can be used in parking meters, to pay for cinema tickets, in vending machines, etc.

In April 2002, the Norwegian National Lottery launched a new payment service for online games. Use of the service requires an electronic purse (Mondex), using a microchip embedded in a card (smart card), and a card reader linked to a PC. Customers can transfer funds online from their bank accounts to the smart card and visa versa. However, the amount stored on the card cannot exceed NOK 1500.

Canal Digital's pilot project involving Proton e-purse cards on decoders linked to satellite television, referred to in last year's report, is in progress, although it may take time before this service is launched in the market.

#### **EU directives relating to electronic money:**

In September 2000, the EU adopted two directives relating to electronic money (e-money) (European Parliament and Council Directives 2000/46/EC and 2000/28/EC) that regulate the taking up, pursuit of and prudential supervision of the business of electronic money institutions. The EU countries have until 27 April 2002 to incorporate these directives into domestic legislation. Both directives were included in the EEA Agreement in March 2001 and will be incorporated into Norwegian law as a separate Act. The Ministry of Finance presented a bill relating to electronic money institutions to the Storting on 14 June 2002 (Proposition No. 92 (2001-2002) to the Odelsting). For further details on the two directives, see Norges Bank's *Report on Payment Systems 2000*.

# 3 | Regulation of the Norwegian payment system

## Acts affecting the financial services industry

In addition to general legislation within company law, there are a number of Acts affecting Norwegian financial institutions. The following is a selection of some important Acts:\*

- Law of 27 May 1932 on bills of exchange and promissory notes
- Law of 27 May 1932 on cheques
- Lov om gjeldsbrev (Act of 17 February 1939 relating to debt instruments)
- Act of 17 February 1939 relating to the right to deposit an item of debt
- Act of 7 December 1956 on the supervision of credit institutions, insurance companies and securities trading etc.
- Act of 24 May 1961 on savings banks
- Act of 24 May 1961 on commercial banks
- Act of 12 June 1981 on Securities Funds
- Act of 24 May 1985 on Norges Bank and the monetary system
- Act of 14 June 1985 relating to the Norwegian securities registry (Norwegian Central Securities Depository)\*\*
- Lov om inkassovirksomhet og annen inndrivning av forfalte pengekrav (Act of 13 May 1988 relating to debt collection and other debt recovery)
- Act of 10 June 1988 on financing activity and financial institutions
- Act of 6 December 1996 on Guarantee Schemes for Banks and Public Administration etc., of Financial Institutions
- Act of 19 June 1997 on securities trading
- Act of 25 June 1999 on financial contracts and financial assignments
- Act of 17 December 1999 relating to payment systems etc.
- Act of 17 November 2000 relating to stock exchange activities

\*On 14 June 2002, a bill relating to the issue of electronic money was presented to the Storting (Proposition No. 92 (2001-2002) to the Odelsting). The bill is consistent with the EEA rules derived from Directive 2000/46/EC of the European Parliament and of the Council of 18 September 2000 on the taking up, pursuit of and prudential supervision of the business of electronic money institutions and Directive 2000/28/EC of the European Parliament and of the Council of 18 September 2000 amending Directive 2000/12/EC relating to the taking up and pursuit of the business of credit institutions.

\*\* A proposal has been tabled for a new Act on the registration of financial instruments (in Proposition No. 39 (2001-2002) to the Odelsting): This Act will replace the current Act relating to the Norwegian securities registry.

This chapter contains an overview of legislation and agreements in the Norwegian payment system. The payment system includes everything that happens from the moment a customer initiates a payment until the money is available to the payee. A more detailed description of the Norwegian payment system can be found in the Payment Systems Report for 2000.

Norges Bank bases its work in this field on section 1 of the Norges Bank Act: “(Norges Bank shall) issue banknotes and coin, promote an efficient payment system domestically as well as vis-à-vis other countries (...)”. The legal authority for the Bank’s role as a settlement bank is laid down in section 20 of the same Act: “The Bank accepts deposits from commercial banks and savings banks on terms laid down by the Bank”.

Several Acts regulate the activities of participants in the payment system and protect bank customers. The banks have also established an extensive range of agreements on the payment system that supplement and elaborate on these Acts. The various Acts and the self-regulation exercised by the banking industry provides a sound basis for the payment system in Norway to function satisfactorily and efficiently over time, with efficiency and in a way that promotes financial stability. Nonetheless, considerable effort is devoted to improving and renewing existing legislation and agreements, primarily in the Banking Law Commission, the Ministry of Finance, Norges Bank, the Banking, Insurance and Securities Commission and the banking associations.

## 3.1 Regulation of retail payment services

Banking activities and the relationship between banks and users of the banks’ payment services are subject to the Norges Bank Act (1985), the Financial Institutions Act (1988) and the two relatively new Acts, the Financial Contracts Act and the Payment Systems Act (both 1999). The banking industry itself also contributes to regulation through several different agreements.

In Norway, the use of cash has always been subject to the Norges Bank Act. The Act on Norges Bank and the Monetary System gives Norges Bank the responsibility for promoting an efficient payment system and the exclusive right to issue banknotes and coins. An amendment to section 13 from 1999 gives Norges Bank the right to draw up agreements with other companies for the production of banknotes and coins. These companies may be established by Norges Bank under section 8a of the Norges Bank Act. Such an agreement was concluded when the Royal Mint became a separate limited company (wholly owned by Norges Bank) in 2001. The Bank’s notes and coins are legal tender in Norway. The Act establishes the krone as the monetary unit.

The cheque was the first payment instrument that gave



bank customers easy access to the money in their accounts. Use of the cheque is regulated in the 1932 Law on Cheques. In Norway, the cheque is the only payment instrument that is subject to a separate Act. The Act regulates all aspects related to the use and issue of cheques, including design and shape, presentation and payment, validity, obligations and rights for issuers, banks and payees. Acts governing the use of cheques also exist in many other countries.

The use of bank accounts and payment orders are subject to the Act on financial contracts and financial assignments (Financial Contracts Act). This Act is in accordance with Annex XIX, 3 a (Directive 97/7/EC) of the EEA Agreement. Framework conditions governing the formulation of agreements on the use of payment instruments that give access to an account (giros, payment cards and cheques) are laid down in this Act. The Act applies to agreements and assignments related to financial services between customers and financial or similar institutions. The Act regulates agreements between customers and banks on bank accounts and the use of deposits. Under the Act, these agreements are required to be in writing and deviations from the Act are not permitted if they are to the consumer's disadvantage. The Act contains rules for calculating interest in connection with crediting and debiting of accounts that remove float. The Act includes rules on changing the interest rate and the associated reporting requirement. Responsibility for the misuse of payment cards and fraud is also laid down in the Act. The Act also deals with several aspects that are not directly related to the payment system.

Payment cards and other forms of electronic systems used to transfer deposits are subject to the Act relating to Payment Systems etc. According to the Act, systems for payment services are defined as systems for the transfer of funds from or between customer accounts by using payment cards, numeric codes or any other form of independent user identification issued to an unrestricted range of customers. Examples are payment cards and Internet banking. The systems shall be "...organised and operated in a way that promotes secure and efficient payment and effective and co-ordinated execution of payment services". In its preparatory work on the Act, the Ministry of Finance acted on the assumption that other systems where identification is provided by means of signature would also be included. The Banking, Insurance and Securities Commission must be notified when payment systems are established or are in operation. The notification shall include information on a) agreements between participating institutions with respect to the transfer or withdrawal of funds, b) agreements regarding the linkage of payment terminals, c) agreements between systems for payment services, and d) use of payment cards, numeric codes or other forms of independent user identification utilized in connection with payments. As of 1 March 2001, all the savings banks, commercial banks and finance companies in Norway had given notification of their systems, 187 in all, to the Banking, Insurance and Securities Commission.

**Deposits** refers to deposits in bank accounts. Deposits are a means of payment. The public has access to deposits in connection with the use of payment instruments such as giros, payment cards or cheques.

**Cash** refers to banknotes printed at Norges Bank or coins minted at the Royal Mint. The public has access to cash through ATMs, over the counter at banks or post offices, or via cashback at Point of Sale terminals in connection with payment card use. Cash is both a means of payment and a payment instrument.

**Float** means that an amount transferred from one account to another – for example via the giro system – is not interest-bearing for payer or payee for a certain period.

**Payment cards** in Norway comprise three different types of cards:

The **debit card** is directly tied to the user's bank account and allows the user to draw on the money available in the account. The amount of money available may also include an overdraft facility connected to the account or to the card agreement. The withdrawal is debited the user's account immediately.

The **charge card** is not linked to an account. The user receives an invoice showing use of the card (for example over the previous month) which is then paid by giro (which can be based on a direct debit agreement). Because payment is deferred, the user is allowed a certain amount of credit, while the payee receives settlement from the card company.

The **credit card** is not linked to an account either, and the user is granted credit up to a certain amount. This credit is repaid according to an agreed repayment plan.



## Box 3.1: Institutions involved in the regulation of and agreements for the Norwegian payment system

*The Ministry of Finance* submits bills to the Storting related to the entire financial services field, including the payment system, and issues regulations within these areas.

*The Ministry of Justice* is responsible for the Financial Contracts Act, including revision and enforcement, and for issuing regulations.

*The Banking Law Commission* formulates drafts of bills relating to the financial services field, including the payment system.

*Norges Bank* issues licences and supervises the operation of interbank systems pursuant to the Act relating to Payment Systems etc. and is responsible for overall surveillance of interbank settlements to promote financial stability and overall surveillance of retail payment systems to promote efficiency. The Bank is also involved in the operational management of Norges Bank's Settlement System (NBO).

*The Banking, Insurance and Securities Commission* is responsible for ensuring that retail payment systems and securities settlement systems are organised in accordance with the Act relating to Payment Systems etc. and enforces a large portion of the legislation in the area of financial services.

*The Norwegian Competition Authority* aims to ensure that the country's resources are put to efficient use by promoting active competition. The Norwegian Competition Authority and the Banking, Insurance and Securities Commission have adopted guidelines for coordinating matters affecting the competitive environment in the financial market.

The *Norwegian Financial Services Association* (business organisation for the commercial banks) and the *Norwegian Savings Banks Association* (business organisation for the savings banks) have established the *Joint Payment System Committee*. Through their respective bureaus, these organisations have established the *Banks' Standardisation Office*. The Joint Committee and the Standardisation Office are responsible for drawing up agreements between banks with regard to the payment system. Cooperation between the organisations is an important driving force in drawing up the extensive agreements that the banking industry has established for the payment system. The organisations are jointly involved in the operation of the NICS operator office, which is responsible for operating the banks' joint clearing system, NICS.

The *Complaints Board for Consumers in Banking and Finance Matters* was established by the banking associations, the Association of Norwegian Finance Houses and the Consumer Council of Norway to deal with disputes relating to contracts between consumers and banks, finance companies or mortgage companies.

A provision on payment cards is also included in Chapter 3 of the Financial Institutions Act, which concerns the regulation of credit cards. Following a judgment in Oslo city court in 1987, it was established that the Act also applies to financial undertakings and their activities involving bank cards or credit cards (credit facilities). Because of this Act, the international card companies Visa, Master Card and American Express have a different form of settlement in Norway than in other countries. With the form of settlement used in Norway, these companies do not provide credit and thereby fall outside the scope of the Act. Following this judgment, Diners Club is the only international card company whose activities are subject to the Act. Consequently, the Regulations concerning the credit card activities of financial undertakings were laid down to regulate credit and charge cards in more detail. These regulations included restrictions on, for example, credit companies' right to charge a POS commission. The industry has subsequently drawn up agreements to set a maximum limit for this kind of commission.

## 3.2 Regulating the interbank system

The relationship between the banks and the banks' clearing and settlement systems is subject to the Act relating to Payment Systems etc. The EEA Directive "Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems" has been incorporated into Chapter 4 of the Act.

The Payment Systems Act is consistent with the core principles for systemically important payment systems and recommendations regarding the responsibility of central banks in this context established at the Bank of International Settlements (BIS). The Act is intended to supplement the industry's self-regulation in this area and has played a role in promoting formalised agreements on the operation of interbank systems for banks.

Under the Payment Systems Act, Norges Bank is the responsible authority for authorising and supervising systems for interbank services. The systems must be designed so as to promote financial stability. Financial legislation sets limits on the amount a bank may lend any one of its customers. These limits do not apply to interbank exposures in the payment system, where the amounts may be very large, both because of large single transactions and because banks have little control over total exposure to an individual counterparty. These exposures arise in connection with payment transactions and other activities such as foreign exchange transactions and interbank lending. To enable the participants to manage the risk involved, the responsibilities of each of the participants must be clearly defined and the clearing process and interbank settlements must be well organised. The authorisation procedure is intended to clarify these issues (see section 2.2). Three systems were authorised in 2001. Notification of this was given in circulars from Norges Bank to the financial sector and was further discussed in Economic Bulletin 3/2001.<sup>6</sup> Norges Bank itself is exempt from the authorisation requirement.

According to the Act, responsibility for payment systems is shared between the Banking, Insurance and Securities Commission and Norges Bank. The Commission is responsible for systems for payment services, while Norges Bank is the authorising and supervisory authority for interbank systems. As the various tasks these institutions are required to execute may fall within the responsibility of both institutions, Norges Bank and the Commission cooperate so as to safeguard all aspects of the payment system. Their cooperation includes regular meetings between the management of the two institutions to review the economic situation and developments in financial institutions. Norges Bank is represented by an observer on the Board of the Commission.

**Interbank systems** are defined as systems based on common rules for clearing, settlement or transfer of funds between credit institutions.

**Systems for payment services** are systems that can transfer deposits using payment cards, numeric codes or other forms of independent user identification issued to an unrestricted range of customers.

<sup>6</sup> Circulars no. 5/17 April 2000 (available in English), no. 1/23 March 2001 and no. 5/6 June 2001 (Norwegian only) from Norges Bank to financial institutions. Watne (2001).

**The EEA Agreement** concerns the four freedoms – the free movement of goods, persons, services and capital. When the EEA Agreement was concluded in 1994, Norway became a part of the single market, and legislation in Norway, including financial sector legislation, was adapted to EU legislation. The free movement of capital means that in principle the financial services industry competes for customers in an EEA arena (18 countries). The most important directives affecting payment systems are contained in Annex IX of the Agreement:

- Directive 2000/12/EC of the European Parliament and of the Council of 20 March 2000 relating to the taking up and pursuit of the business of credit institutions
- Directive 2000/28/EC of the European Parliament and of the Council of 18 September 2000 amending Directive 2000/12/EC
- Directive 2000/46/EC of the European Parliament and of the Council of 18 September 2000 on the taking up, pursuit of and prudential supervision of the business of electronic money institutions
- Directive 97/5/EC of the European Parliament and of the Council of 27 January 1997 on cross-border credit transfers
- Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems
- Council Directive 91/308/EEC of 10 June 1991 on prevention of the use of the financial system for the purpose of money laundering (anti-Money Laundering -Directive)
- Directive 94/19/EC of the European Parliament and of the Council of 30 May 1994 on deposit-guarantee schemes

14 June 2002, a bill implementing Directive 2000/46/EC and 2000/28/EC of the European Parliament and of the Council of 18 September 2000 on the taking up, pursuit of and prudential supervision of the business of electronic money institutions in Norwegian law was presented to the Storting by the Ministry of Finance.

Regulation (EC) No 2560/2001 of the European parliament and of the Council of 19 December 2001 on cross-border payments in euro is relevant for the EEA, and the Ministry of Finance is evaluating the regulation's implementation and scope in Norway.

### 3.3 Agreements in the banking sector

The Norwegian Financial Services Association and the Norwegian Savings Banks Association cooperate on developing the banks' common infrastructure including 1) a common policy, 2) agreements and regulations, 3) standards and specific rules for the use of standards, and 4) systems and procedures for clearing and settlement. As part of this cooperation, the banking associations' Joint Payment System Committee was established in 1997. Its purpose is to be an advisory committee on payment system policy for the boards of the Norwegian Financial Services Association and the Norwegian Savings Banks Association and to function as the board of the Banks' Standardisation Office (established in 1994).

Underlying the aim of a common policy is the clear ambition that the banking industry itself will define the overall framework for the development of bank payment services. This means that the banks have access to their joint infrastructure, in order to compete with each other in a common arena, to cooperate on the development of systems and to limit competition from other market participants that are subject to other operating conditions.

Agreements and regulations include both general agreements that apply to all payment transactions and agreements on the individual payment system services. Examples of general agreements are agreements to specify terms for new banks' access to the banks' common infrastructure and agreements enabling transactions involving payment services such as giros, payment cards and cheques between customers in different banks. The banks have also drawn up rules on, for example, identity checks, balance checks, interbank charges and procedures for clearing and settlement. Important general interbank agreements include:

- general rules concerning interbank transactions in connection with domestic payments;
- rules for the clearing and settlement of transactions included in retail clearing handled by the Norwegian Interbank Clearing System (NICS).

Another general agreement is the "Bax" agreement ("Rules for the issue and processing of Bank Asept-cards in ATMs and Point of Sale terminals"). It contains the only mechanism for distributing loss between banks in Norway. This mechanism comes into effect either in the event of a loss due to the issue of false cards (section 10.5) or loss due to insolvency in one or more banks (section 11). The loss distribution mechanism is necessary because payees are guaranteed settlement when card transactions are made online, so that there is a certain credit risk involved for the bank responsible for the payment in relation to other banks. The transition to crediting after settlement has removed the credit risk connected with settlements of other payment transactions.

The Banks' Standardisation Office is responsible for establishing and maintaining standards and rules for the use of these standards in the banking industry's common infrastructure. As a rule, the Office is responsible for incorporating international standards into Norwegian systems. As the networks used by the banks to provide their services become more open, the Banks' Standardisation Office will take on an increasingly central role.

The banks have developed and established a joint system for clearing and liquidity information (NICS) to meet the banks' need for clearing, liquidity information, transfer of clearing transactions and individual transactions for settlement in Norges Bank, and settlement in private institutions. The account maintenance and settlement agreement between the banks and Norges Bank contains rules for opening and using settlement accounts and payment settlements. The Norwegian Financial Services Bureau, the Norwegian Savings Banks Association and Norges Bank jointly established NICS/NBO Liquidity Information so that banks could obtain relevant information from NBO via NICS. The above description of the agreements concerning the systems and the participation of parties to the agreements is not exhaustive.

### 3.4 Developments in infrastructure

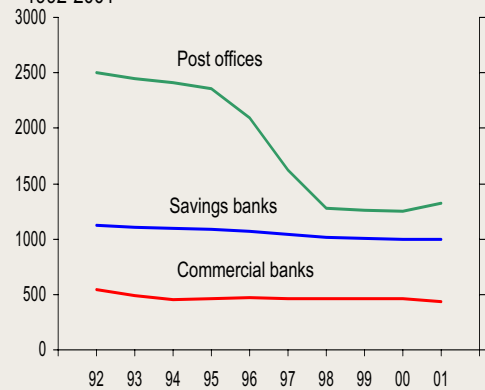
#### *Access to cash*

As a result of a decision made by the Executive Board of Norges Bank on 6 September 2000, five of the Bank's 13 regional branches and one cashier's office were closed down in 2001. The eight remaining branches have been transferred to NOKAS (Norsk Kontanthåndtering AS), a company responsible for distributing cash between Norges Bank and banks and post offices in Norway. NOKAS is owned by Norges Bank and private banks.

Chart 3.1 shows developments in the number of bank branches and post offices that offer over-the-counter cash services in Norway. There were 144 banks and 8 branches of foreign-owned banks in Norway in 2001. The reorganisation of Norway Post has resulted in a considerable decline in the number of post offices in the period 1995-1999. The numbers have since levelled off, increasing slightly in 2001 to 2 760 post offices and banks offering banking services. The reason for the increase is that Norway Post opened PostShop outlets more quickly than the pace at which post offices were being closed down. Cash may also be withdrawn from approximately 2 400 rural postmen. Developments in Internet banking have meant that it became more common to see fewer cashiers in banks' branches in 2000 and 2001. A number of banks have also opened unstaffed "bank offices" with deposit machines, ATMs and the possibility of paying giros electronically.

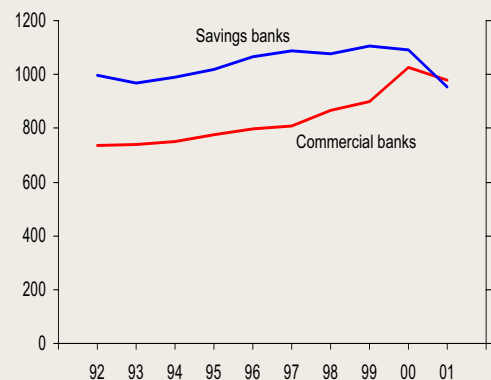
The number of ATMs rose slightly until 2000, but declined again in 2001 (Chart 3.2). At the end of 2001, a total of

**Chart 3.1** Number of bank and post office branches 1992-2001



Source: Norges Bank

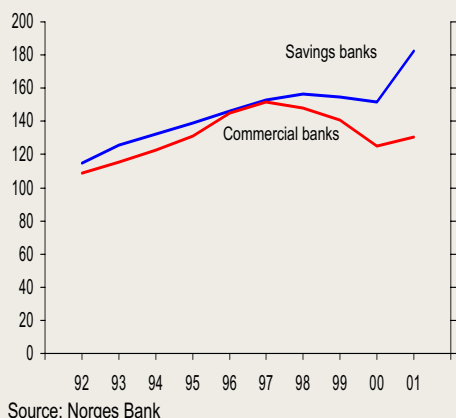
**Chart 3.2** Number of ATMs 1992-2001



Source: Norges Bank

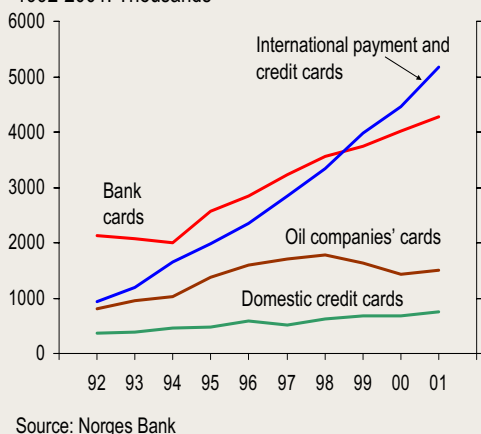


**Chart 3.3** Average number of withdrawals per ATM per day 1992-2001



**A bank account** is used by the great majority of Norwegians. In 2000, there was a total of 11 534 617 bank accounts in Norway, an increase of 0.3% since 1995. Half of these accounts were in savings banks in 2000, an increase since 1995, when four out of ten accounts were in savings banks. There were deposits totalling NOK 849.5bn in these accounts in 2000, an increase of 47% since 1995 (in nominal values). 3.4% of the accounts hold 76.1% of the total amount. 0.3 % of the accounts had deposits exceeding NOK 2m. Amounts exceeding NOK 2m are not covered by the banks' deposit guarantees, cf. the Act on Guarantee Schemes for Banks and Public Administration etc. of Financial Institutions. Consequently, there is a certain risk attached to depositing large sums in an account. Deposits exceeding NOK 2m have increased by 9% in the period 1995-2000.

**Chart 3.4** Number of issued payment cards at year-end 1992-2001. Thousands



1 934 ATMs were in operation, a reduction of 12% since 2000. Commercial banks owned 979 ATMs, for the first time more than the number owned by savings banks, which was 955 in 2001. The Norwegian ATM system is based on a common infrastructure, so that all bank customers can use all ATMs. This coordination reduces the need for further expansion of the ATM network. The emergence of payment terminals that allow for cash withdrawals in connection with goods purchases also reduces the need for additional ATMs. Chart 3.3 shows that the number of withdrawals per ATM has increased in 2001. This is due to the removal over the past year of the ATMs that were used least.

### Access to deposits

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 Internet banking. In principle, no agreement is required to use a giro.

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. There were 2.7m mail giro agreements in 2001, a decline of 13% on 2000. To use electronically initiated giro services, the customer must have a separate agreement with the bank. In 2001, 1.35m agreements were concluded for using Internet banking, a rise of nearly 44% on the previous year. The number of direct debit agreements increased by 16% to approximately 4m in 2001.

The bank card is the most widely used payment card in Norway, with 4.3m issued cards at the end of 2001 (Chart 3.4). This represents an increase of 6% in 2001. Bank cards are online debit cards with automatic cover and authorisation checks. Most of these cards are combined cards, in other words they have another function in addition to their bank card function, such as international credit cards. The four international card companies that are active in Norway, Diners Club Norway AS, Europay Norge AS, VISA Norge AS and DnB Kort AS (issues the American Express card), have issued a total of 5.2m cards in Norway, with a 16% increase in 2001. Domestic credit card companies had issued 760 000 cards, a rise of 6% in 2001. These cards are issued primarily by GE Capital Bank, DnB Kort AS and Gjensidige NOR Savings Bank (Union Bank of Norway). The oil companies were the first to issue payment cards in Norway, but these cards can only be used in the individual oil company's payment terminals. By the end of 2001, 1.5m of these cards had been issued in Norway, an increase of 4% on 2000.

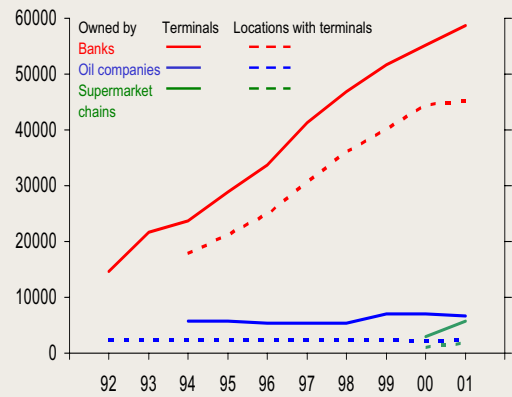
Bank cards may be used in 71 345 terminals at 48 751 locations (Chart 3.5). These numbers have increased by 9% and 3% respectively in 2001. Most terminals are owned by banks. Banks' terminals usually accept international payment and credit cards and domestic credit cards in

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 some terminals, which are primarily located in restaurants, cafés and taxis. These terminals accept VISA cards and most other international cards. The VISA terminals are not included in Norges Bank's statistics. The oil companies' terminals are still used more often than banks' payment terminals (Chart 3.6).<sup>7</sup>

Using cheques does not require that agreements are concluded by the payer or the payee and may consequently be used for payments between private individuals that require immediate settlement, as opposed to payment cards and giros where settlement is deferred or where terminals or other forms of infrastructure are needed.

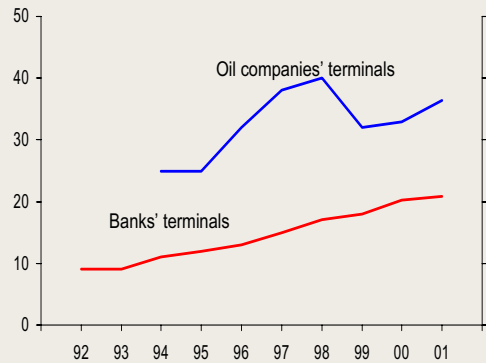
SWIFT (Society for Worldwide Interbank Financial Telecommunications) is an electronic (system of) network(s) and standard format for transmitting messages. SWIFT operates worldwide and is the most important messaging system for financial transactions. The SWIFT format is used both for transfers on behalf of customers and for interbank transactions both through and outside the SWIFT network. In 2001, SWIFT had 2 241 members and 7 199 users worldwide. In Norway, SWIFT has 21 members as well as 8 branches of foreign-owned banks that are members through the parent bank. In addition, five Norwegian institutions are registered as users, making a total of 34 SWIFT users in Norway.

**Chart 3.5** Number of payment terminals and locations with terminals 1992-2001.



Source: Norges Bank

**Chart 3.6** Average number of transactions per payment terminal per day 1992-2001



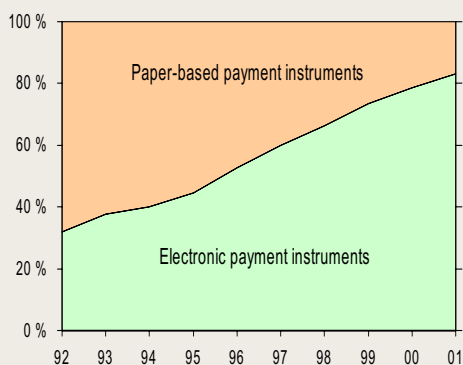
Source: Norges Bank

<sup>7</sup> These figures are based on 270 user days per year for bank's terminals and 360 user days per year for the oil companies' terminals.



## 4 | Transactions and turnover in the payment system

**Chart 4.1** Use of paper-based and electronic payment instruments 1992-2001. As a percentage of total transactions



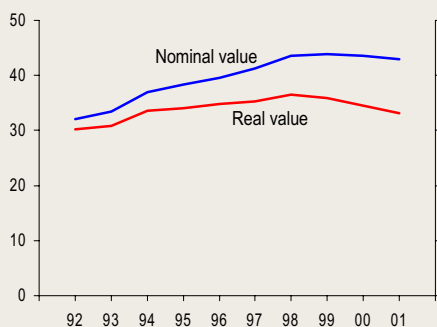
Source: Norges Bank

### Norges Bank's responsibilities in cash handling:

- **Obligation to supply:** Obligation to issue notes and coins to the extent required and to ensure that notes and coins are available to society to a sufficient extent.
- **Obligation to renew:** Obligation to receive worn and damaged notes and coins for destruction and supply notes and coins of circulation quality to replace them.
- **Obligation to redeem:** Obligation to redeem notes and coins for a period of 10 years after they have been taken out of circulation
- **Deposit-taking obligation:** Obligation to receive deposits from banks.

Only Norges Bank can issue notes and coins, i.e. is debtor for issued notes and coins. The other functions may be performed by others in accordance with the requirements stipulated by the central bank.

**Chart 4.2** Nominal and real value (constant 1990-NOK) of notes and coins in circulation 1992-2001. Annual average in billions of NOK



Source: Norges Bank

The sharp growth in electronic transactions continued in 2001 in pace with developments from earlier years. The number of giros paid via the Internet doubled for the second consecutive year, and the use of payment cards continued to show pronounced growth. At the same time, the number of mail giros continued to fall. The main trends are discussed in this chapter, while tables in the statistical annex contain more detailed information.

### 4.1 Use of cash

Considerable changes in the organisation of the cash supply in Norway have taken place over the last two years. A new company, Norsk Kontantservice AS (NOKAS) was established in summer 2001 in order to execute tasks linked to the handling of notes and coins for Norges Bank and private banks. The company is owned by Norges Bank and private banks. Norges Bank's objective in establishing the new company is more efficient cash handling. There are both economies of scale and economies of scope in cash handling because a high portion of note processing can be performed by high-speed machines that execute several tasks simultaneously. The establishment of NOKAS provides a good opportunity to exploit these economies of scale and scope.<sup>8</sup>

Notes and coins are used to make payments 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. The demand for notes and coins for transaction purposes is governed by developments in household consumption, costs associated with the acquisition of cash and costs associated with the use of competing means of payment. New payment solutions and other technological changes in the payment system may also affect the demand for cash for transaction purposes. The storage of wealth in cash is governed in part by developments in inflation and interest rates. Tax evasion and criminal activity probably also require large cash holdings. Cash is often used as a means of payment for transactions that people wish to conceal and for the storage of gains from these transactions. The above-mentioned factors help to explain developments in cash holdings and how cash is used in relation to deposits.

### Notes and coins

The value of cash in circulation increased every year from 1980 to 1999. However, the value of cash holdings fell marginally in 2000 for the first time in 20 years. The decline was more noticeable in 2001, from NOK 43.6bn on average in 2000 to NOK 42.9bn in 2001. Continued growth in the use of payment cards may be one reason for the decline in the

<sup>8</sup> For further information, see Eklund and Veggum, to be published in Economic Bulletin 2/2002.

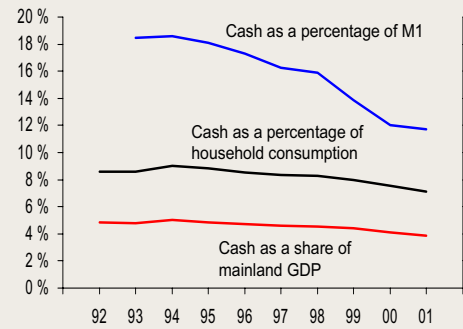
value of cash holdings after 1999. It is uncertain, however, whether the decline in cash holdings is due to permanent changes in the demand for cash. Other reasons, such as the replacement of the 1000-krone note and very large cash holdings around the turn of the millennium may also have contributed to the decline over the past two years.

The value of cash holdings in 2001 was about 35% higher than in 1992. In constant 1990-NOK, the value of cash holdings rose by about 10% from 1992 to 2001 (Chart 4.2). The value of cash holdings as a share of mainland GDP and private consumption has fallen slightly since 1992 (Chart 4.3). As a share of mainland GDP, it fell from 4.8% in 1992 to 3.9% in 2001, and as a share of private consumption it declined from 8.6% in 1992 to 7.1% in 2001. This may indicate that cash is now being used less frequently for transaction purposes than in the early 1990s. This can be confirmed by the sizeable fall in cash as a share of the money supply (i.e. the sum of cash in circulation and deposits on transaction accounts in Norwegian banks and in branches of foreign banks in Norway), from 18.4% in 1992 to 11.7% in 2001. However, the sharp drop in the cash share of the money supply (particularly from 1998 to 2000) levelled off in 2001.

The composition of cash holdings has changed since 1992. Coins have increased their share of the value of outstanding cash, particularly since 1995. In 2001, notes accounted for 91% of the value of holdings and coins for 9% (Chart 4.4). The different denominations' share of the value of cash holdings has also changed considerably in the period 1992-2001 (Chart 4.5). The most pronounced changes included the decline in the 100-krone note and the increase in the 500-krone and 200-krone notes. The value of 100-krone notes in circulation has dropped by about 70% in ten years. The 200-krone note was introduced in 1994, and in 2001 the average value of 200-krone notes in circulation was NOK 4.4bn. The average value of 500-krone notes in circulation rose from a good NOK 1.3bn in 1992 to NOK 6.9bn in 2001. Norges Bank has encouraged increased use of 200-krone and 500-krone notes in ATMs instead of 100-krone notes in order to reduce the number of notes necessary to meet the demand for cash. With a 1.4% share in 2001, 50-krone notes account for a small, but stable share of the notes in circulation. The 1000-krone note accounts for the highest share by value of notes in circulation, although the share declined from 67% in 1998 to 63% in 2001. The 1000-krone note's high share is probably related to the extensive use of this denomination for storing wealth and for transactions in the unregistered sector of the economy.

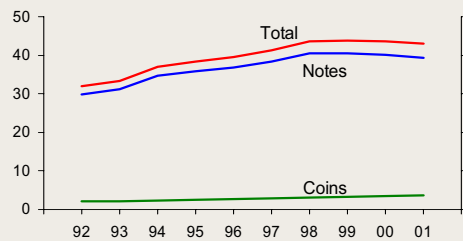
The value of coins in circulation has increased steadily each year for the last 20 years. The average annual value of coins in circulation was just under NOK 3.7bn in 2001, an increase of a good 6% compared with 2000. The 20-krone coin, which was introduced in 1994, is primarily responsible for the increase in coins in circulation (Chart 4.6).

**Chart 4.3** Value of notes and coins in circulation as a percentage of M1, household consumption and mainland GDP 1992-2001. Per cent



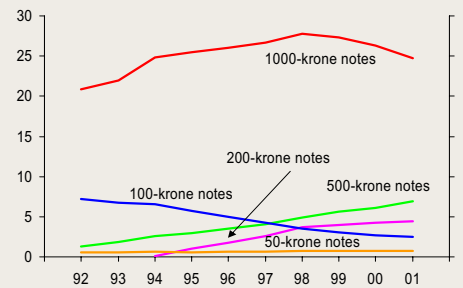
Source: Statistics Norway and Norges Bank  
Preliminary figures for household consumption and GDP in 2000 and 2001.

**Chart 4.4** Cash in circulation 1992-2001. Annual average in billions of NOK



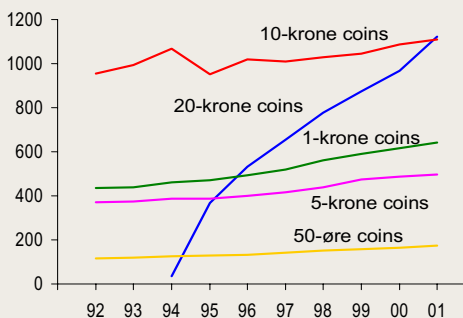
Source: Norges Bank

**Chart 4.5** Banknotes in circulation by denomination 1992-2001. Annual average in billions of NOK



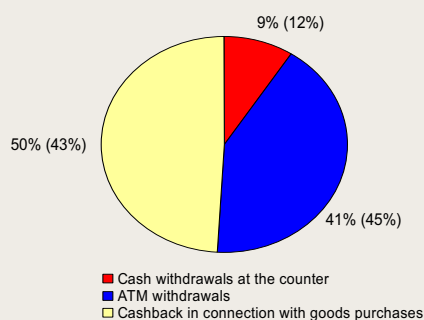
Source: Norges Bank

**Chart 4.6** Coins in circulation by denomination 1992-2001. Annual average in millions of NOK



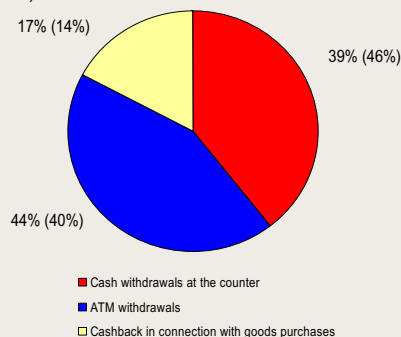
Source: Norges Bank

**Chart 4.7** Number of cash withdrawals in Norway in 2001. Figures for 2000 in brackets. Total number in 2001: 262.9 (236.6) million withdrawals



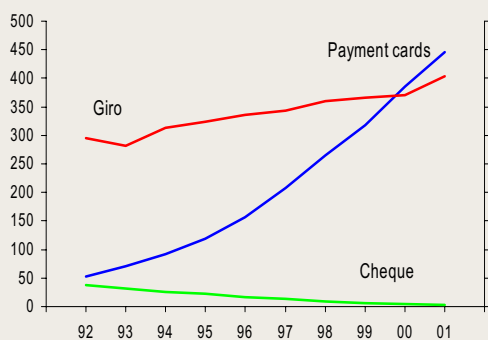
Source: Norges Bank

**Chart 4.8** Value of cash withdrawals in Norway in 2001. Figures for 2000 in brackets. Total value in 2001: NOK 266.6 (263.9) billion



Source: Norges Bank

**Chart 4.9** Payment instruments 1992-2001. In millions of transactions



Source: Norges Bank

## Acquisition of cash

In 2001, about 263m cash withdrawals were registered. This represented an increase of 11% on 2000 (Chart 4.7). The number of cash withdrawals in connection with goods purchases rose by 25% in 2001 and accounted for about 50% of all cash withdrawals in Norway. In the course of only a few years, cashback in connection with goods purchases has become the most widely used channel for acquiring cash in Norway. The number of ATM withdrawals rose marginally from 106m withdrawals in 2000 to 109m in 2001, while ATM withdrawals as a share of all cash withdrawals fell from 45% in 2000 to 41% in 2001. However, the number of at-the-counter cash withdrawals fell considerably from 2000 to 2001, from 28m (or 14% of the total) in 2000 to a good 24m (9%) in 2001.

The value of cash withdrawals rose marginally from NOK 264bn in 2000 to NOK 267bn in 2001 (Chart 4.8). The substantial increase in the number of cash withdrawals has thus not resulted in an increase in the total value of withdrawals. The value of cash withdrawals was equivalent to 44% of household consumption in 2001.

The largest value was acquired through ATMs in 2001, while withdrawals at the counter were highest in 2000. NOK 116bn was withdrawn from ATMs in 2001. This accounted for 43% of the total value of withdrawals. ATMs are used for medium-sized withdrawals. The average value for ATM withdrawals rose from about NOK 1 050 in 2000 to NOK 1 140 in 2001. The value of cash withdrawals at the counter fell by 14%, from about NOK 121bn in 2000 to about NOK 104bn in 2001. Cash is withdrawn at the counter less frequently, but these withdrawals are sizeable. The average value of cash withdrawals at the counter came to NOK 4 260 in 2001, which was about NOK 80 lower than in the previous year. The value of cash withdrawals in connection with goods purchases was a little less than NOK 46bn in 2001, which is an increase of 26% on 2000. Cashback in connection with goods purchases are used to withdraw small amounts and the average value came to about NOK 360 in both 2001 and 2000.

## 4.2 Use of deposits

### Giro

Giro payments account for 96% of the total amount that passes through the payment system, i.e. NOK 6 806bn, which is equivalent to 4.5 times GDP. 47% of all non-cash payments are made by giro. Paper-based giros have become less popular in recent years, and this trend was more pronounced from 2000 to 2001. This is presumably because both the public and banks find that electronic solutions are faster, easier to use and less expensive than paper-based services. Chart 4.10 shows that the share of electronic giro payments has increased steadily over the years, reaching 67% in 2001. The shift increases the efficiency of the payment system since electronic transactions require fewer resources

and are deemed to be less subject to errors and problems than paper-based transactions. The electronic giro services include the use of terminals in businesses, institutions and households, as well as telephone giros and direct debit agreements. The number of electronic giro payments rose by 23%, to 271m transactions in 2001. The value increased by 9%, to NOK 6 298bn.

The most striking development in 2001 was the increase in the number of payments made via the Internet. Giro payments via the Internet account for a fourth of all electronic giro payments. The number of Internet banking payments rose by 90%, to 66m payments, in 2001. The number of transactions through Internet banking will probably continue to increase. All in all, 1.35m Norwegians had an Internet banking agreement at the end of 2001, an increase of 44% on the previous year. Surveys conducted by Norsk Gallup indicate that there are about 100 000 more users of Internet banking than the number of agreements signed. Norsk Gallup estimates that about another quarter million people will start using Internet banking in 2002. The number of payments made by phone has been stable at around 28m since 1999.

The number of direct debit agreements rose by 16% in 2001, while the number of transactions increased by 13%, to 33m transactions. The average value of giros paid by direct debit is fairly high. This is peculiar to Norway, since direct debits are used to pay small-value invoices in other countries. In 2001, the average amount was NOK 5 630.

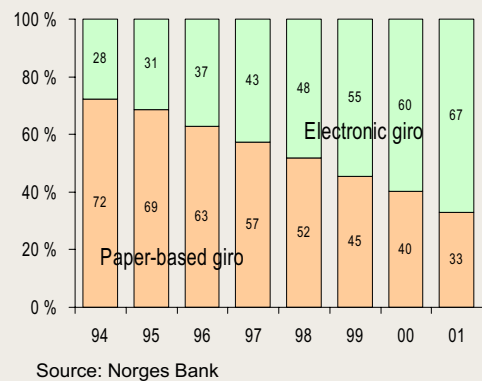
Terminal payments account for the largest share of electronic payments. These terminals communicate via closed networks with relatively high fixed costs. Large and medium-sized businesses are therefore the primary users of this transaction method. More than half of the electronic giro transactions, or 144m transactions, were sent from business terminals. Terminal payments accounted for 93% of the value of electronic giro transactions in 2001.

Electronic giro payment turnover (Chart 4.13) rose from NOK 5 793bn in 2000 to NOK 6 298bn in 2001. The value of payments over the Internet is increasing fastest, by 119%, but turnover via terminals and phone also rose by 7% and 10% respectively. Turnover for direct debits was reduced by 9% as a result of the decline in the size of the average transaction. There is some uncertainty attached to the turnover figures. Due to changes in the basis for reporting, there is a break from 1999 to 2000 in the time series relating to terminal payments.

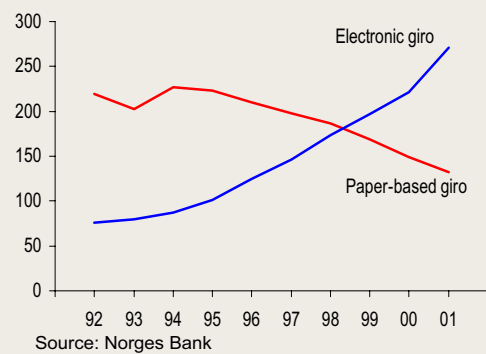
Paper-based giro services include giros sent by mail and giros delivered at the counter (in banks or post offices) (Chart 4.14). In 2001, 33% of all giro transactions were paper-based, while the share was 40% in 2000. Banks' higher charges for paper-based services and the development of user-friendly electronic giro services are part of the reason for this trend.

The number of mail giros declined by 18% from 2000 to 2001. This service is considered an efficient paper-

**Chart 4.10** Giro services 1994-2001. Transactions as percentage share

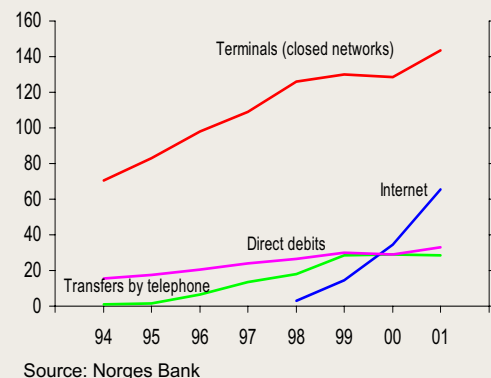


**Chart 4.11** Giro, paper-based and electronic. 1992-2001. In millions of transactions



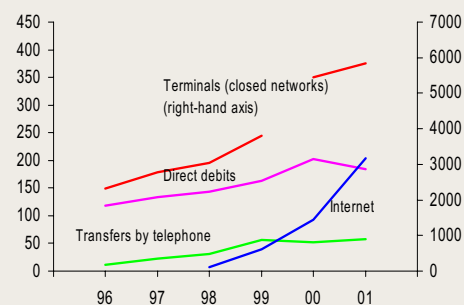
**Closed networks** mean that no one other than the bank and user of the terminal can have access to lines that transmit information. A special technical interface and dedicated terminals that are installed at the individual user and at the bank are required. Information that is sent is encrypted. This is also referred to as a closed system. **Open networks** characterise open systems, such as the Internet or the telephone. Information that is transmitted in open systems can also be encrypted.

**Chart 4.12** Use of electronic giro services. 1994-2001. In millions of transactions



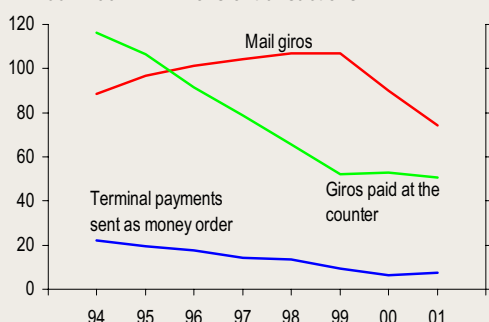


**Chart 4.13** Use of electronic giro services 1996-2001. In billions of NOK



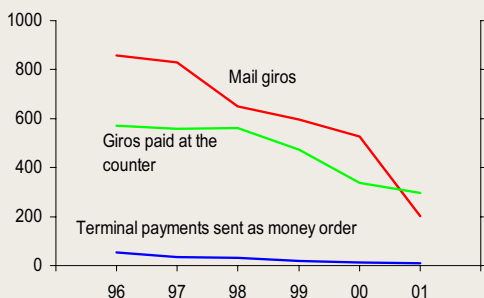
Source: Norges Bank

**Chart 4.14** Use of paper-based giro services 1994-2001. In millions of transactions



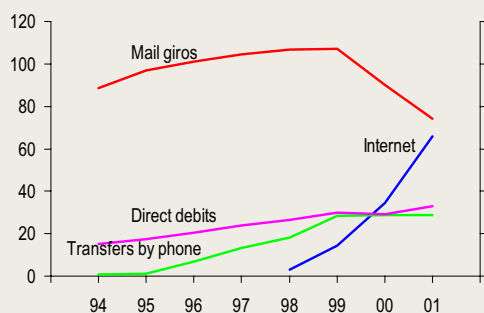
Source: Norges Bank

**Chart 4.15** Use of paper-based giro services 1996-2001. In billions of NOK



Source: Norges Bank

**Chart 4.16** Use of "home banking" services 1994-2001. In millions of transactions



Source: Norges Bank

based solution but is considered less efficient than electronic alternatives. In 2001, there were 1.1 mail giro payments for every Internet payment (Chart 4.16). In 2000, the figure was 2.5 mail giro payments for every Internet payment. It is likely that the number of mail giro payments will be lower than Internet payments in 2002.

Paper-based giros delivered at the counter include both cash payments and account debits. The number of cash payments fell by 40% from 2000 to 2001. At the same time, the number of account debits rose by 16%. All in all, the number of giros delivered at the counter showed a reduction of 4% (Chart 4.14). The number of terminal giros sent as money orders rose by 18% from 2000 to 2001. These now account for 6% of paper-based giro payments and 2% of turnover.

Turnover for all paper-based giro services in 2001 was NOK 508bn, a 42% decline compared with 2000. The value of mail giro payments fell as much as 62%, partly because some customers with high turnover switched from using mail giros to payments via terminals. Turnover for cash payments and account debits fell by 25% and 11% respectively. Turnover for terminal payments sent as money orders declined by 20%.

Chart 4.17 shows how payments were received in 2001 by notification format. The chart only shows payments 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 considered paper-based if notification is received in the mail (a paper copy of the giro stating that the payment has been made and received via bank/computer centre). The giros are considered electronic if the payment is made without notification, by e-giro or with a customer identification number (CID). When the payment has been completed and the amount is credited to the payee's account, BBS sends out confirmations that the accounts have been updated. For payments made with a CID number or with notification, confirmations usually come in paper-based form. It is also possible to send confirmations electronically, for example by e-mail. The e-giro service can cover all types of payments. Paper-based transactions are converted automatically to electronic transactions, all reporting takes place electronically and the service can also handle SWIFT payments. Many companies use this solution.

Since a payment may be initiated in paper-based form (e.g. as a mail giro or at the counter) and subsequently received electronically, giros received electronically outnumber giros initiated electronically. 93% of all giros were received electronically, while only 67% were initiated electronically. In order to promote an efficient payment system, it is desirable that as many giro payments as possible are initiated (and received) electronically.



## Payment cards

Payment cards are the most popular payment instrument in Norway. Four of five card transactions related to purchases of goods and services in 2001. In 2001, 446m purchases of goods and services were completed by payment card, 16% higher than 2000. This represented 52% of all non-cash payments in Norway. The value of these transactions amounted to NOK 181bn, a rise of 11% on 2000. The use of payment cards has shown sharp growth for several consecutive years.

A special feature of payment card use in Norway is that the bulk of payments are made with debit cards. One of three cards in circulation is a credit card or charge card. However, the public seldom makes use of credit, and in 2001 credit cards or charge cards only accounted for about 5% of card transactions in Norway, a share that was unchanged compared with 2000 (Chart 4.18). The same cards account for about 10% of turnover, which is also the same share as in 2000. In other countries, credit cards dominate the market to a greater extent than in Norway. The average amount for pure credit card transactions, NOK 1 400, is higher than the average amounts for charge cards (NOK 1 230) and debit cards (NOK 600), reflecting that these cards are used in different situations.

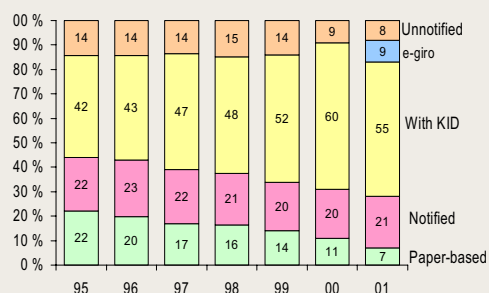
Another main distinction is between the use of payment cards with electronic debiting and those with manual debiting of the account. Electronic debiting requires a terminal that can check whether the card has been blocked, and for debit cards, whether there is cover in the account. In Norway, these terminals are EFTPOS terminals and ATMs. About 98% of all card payments were made electronically in 2001.

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 88% share in 2001. Domestic credit cards generated 0.5% of the transactions. The share for payment cards issued by or in cooperation with international card companies edged up to 11.5% in 2001.

Goods purchases are dominated by the use of bank cards, and it appears that bank cards cover the public's transaction requirements in everyday life. The average bank card purchase came to NOK 350 in 2001, 4% lower than in 2000. In Norway, card companies and banks issue payment cards from four international companies: VISA, Europay, American Express and Diners Club (Chart 4.21). These four companies account for 16% of turnover. The average purchase made by international payment card was NOK 760 in 2001, a reduction of 8% on 2000. The remaining transactions are made via domestic credit cards for which the three most important companies are GE Capital Finans AS, DnB Kort AS and Union Bank of Norway. The average amount was NOK 3 170, which is 9% lower than in 2000.

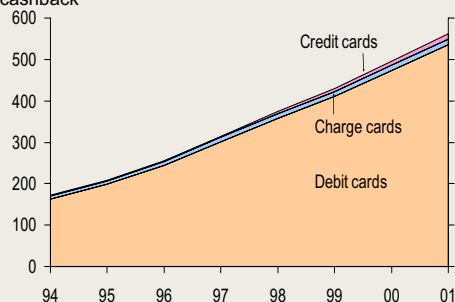
From 2000 to 2001, turnover in connection with the use of Norwegian payment cards for goods purchases,

**Chart 4.17** Giro services 1995-2001. Receipt of giros. Transactions as percentage share.



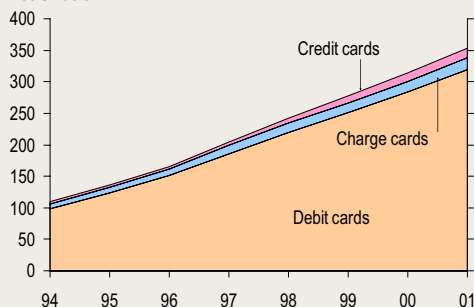
Source: The Banks' Payment and Central Clearing House (BBS) and Postbanken

**Chart 4.18** Payment cards 1994-2001. Millions of transactions by transaction type. Goods purchases and cashback



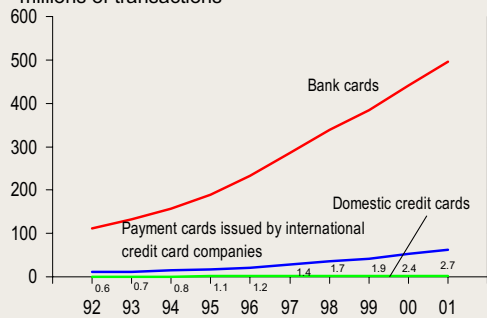
Source: Norges Bank

**Chart 4.19** Payment cards 1994-2001. In billions of NOK by transaction type. Goods purchases and cashback



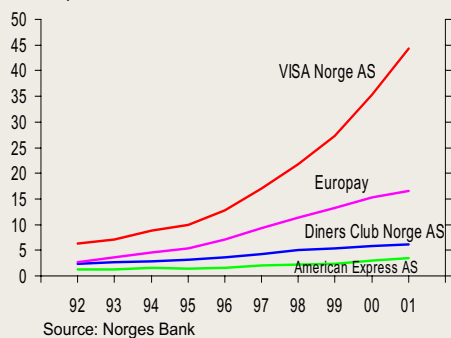
Source: Norges Bank

**Chart 4.20** Use of Norwegian payment cards 1992-2001. Goods purchases and ATM withdrawals. In millions of transactions

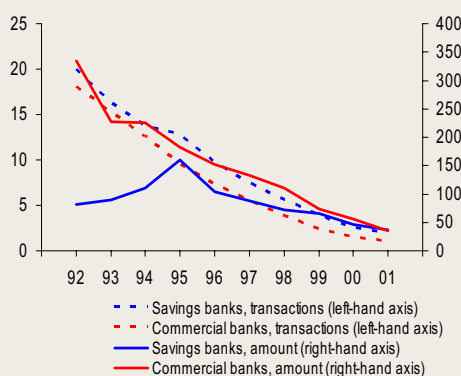


Source: Norges Bank

**Chart 4.21** Use of payment cards issued by international card companies 1992-2001. In millions of transactions



**Chart 4.22** Use of cheques 1992-2001. In millions of transactions and billions of NOK



**Netting** is the offsetting of positions between two (bilateral) or several (multilateral) participants (banks) to arrive at a total net obligation or net claim.

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

**Net settlement** is the transfer of funds or financial instruments after netting has taken place.

**Gross settlement** is the transfer of funds or financial instruments without prior netting. The entire amount is transferred.

cashback and cash withdrawals in ATMs rose by 12% to a total of NOK 354bn. Bank cards dominated with 88% of turnover, unchanged from the previous year. Payment cards issued by international companies increased their share of turnover at the expense of domestic credit cards.

### Cheques

Cheque use dropped to only 0.3% of the total number of payment transactions in 2001, and the number of cheques drawn fell by 28% compared with 2000. The few transactions that are made by cheque are primarily related to large-value transactions by private individuals and some businesses. The average cheque amount is also relatively high. In 2001, the average amount was NOK 25 160, a slight increase on the previous year. 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.

### 4.3 Clearing and settlement

When payer and payee have accounts in the same bank, the settlement can take place locally through direct account debiting and crediting. However, transactions using bank cards and giros paid by mail or over the Internet and terminals will normally go through a clearing house even if the payer and payee have accounts in the same bank. When payer and payee have different banks, Norwegian banks always use a clearing house and settlement bank to execute the settlement on behalf of payer and payee.

In principle, all of the 20 commercial banks and 129 savings banks with accounts in Norges Bank have access to Norges Bank's settlement system (NBO), which offers final settlement of payment transactions. 116 of the banks that have an account in Norges Bank do not participate in settlements and only use the account for deposits and cash withdrawals. Banks' accounts are current accounts and give banks the right to borrow from the central bank against full collateral (both intraday and overnight). Norges Bank pays interest on overnight deposits. Stockbroking firms have a transaction account in the central bank that must balance at zero every day. There are no drawing/borrowing rights linked to a transaction account and each broker therefore has a bank guarantee that gives Norges Bank the right to draw on the guarantee bank's current account. This guarantee shall cover brokers' net debit positions in the securities settlement. In the cash settlement it is thus the guarantee bank's current account that is credited or debited for brokers' daily net positions.

Account maintenance agreements were revised in 2001. The revision was carried out in accordance with the Act relating to payment systems, etc. and the EU's Settlement Finality Directive's (Directive 98/26EC) provisions concerning legal

protection for netting and/or settlement agreements to ensure that account holders have the right to legal protection in connection with netting and settlement. The revision also meant that account maintenance agreements and settlement agreements were combined.

Most ordinary customer transactions (giro, payment card and ATM transactions as well as some other customer transactions) are settled by means of retail netting. This is multilateral netting in which all claims between banks are reduced to one set of positions from participating banks. Thirty-one banks participate in the retail settlement (NICS retail). The retail settlement is carried out twice daily in Norges Bank. The figures in Table 4.1 show that there are many transactions of relatively modest size in the retail settlement and that netting reduces the amount that is settled by about 75%.

NICS also transfers accounting information, i.e. information concerning who has paid what amount to whom, reference number/customer identification number (CID), etc. from the payer's banks, through the computer centre to the payee's bank. Interbank transactions are settled through NICS-SWIFT net settlement or in SWIFT-RTGS, which is a real-time gross settlement system. Most SWIFT payments under NOK 100m (this can also include some customer transactions) are settled through NICS-SWIFT netting, in which multilateral netting takes place six times a day, with the net settlement taking place in Norges Bank. On average, NOK 16bn is cleared each day, while the amount that is settled is about NOK 5.3bn daily. Twenty banks participate in SWIFT-RTGS. SWIFT payments of more than NOK 100m and other specially earmarked transactions are settled immediately and on an individual basis in Norges Bank. In practice, only interbank transactions are included in this settlement, and on average about NOK 156bn is transferred daily in this settlement.

Trades in securities and options are settled in the Norwegian Central Securities Depository (VPS), while the cash leg of the settlement takes place in Norges Bank. Nineteen banks and 24 stockbroking firms participate in the securities settlement. VPS registers and clears transactions and positions for the settlement of securities trading, i.e. equities and primary capital certificates, bonds and short-term paper. In addition, VPS clears options trades on behalf of the Norwegian Futures and Options Clearing House (NOS) in which 7 banks and 17 stockbroking firms participate. VPS is responsible for both the securities portion and the cash portion of the settlement. Norges Bank executes three different settlements daily for NOS.

#### 4.4 International payment transactions

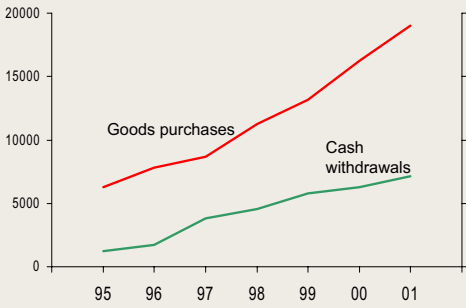
Private individuals' cross-border payments to and from Norway are dominated by the use of payment cards abroad. Growth in Norwegians' use of payment cards abroad is assumed to be related to increased travel and greater

**Table 4.1** Main aggregates in the various payment settlements, 2001 (2000 figures in parentheses)\*

	SWIFT-RTGS	SWIFT-netting	NICS-retail netting
No. of transactions per day, average	303 [282]	4 179 [4 344]	2-3 m [2-3 m]
Amount per day before netting (NOK bn)	156 [123]	16 [17]	30-35 [20-25]
Amount per day after netting (NOK bn)	156 [123]	5.3 [4]	4.5-5.5 [4-5]
Average amount per transaction (1000s of NOK)	498,350 [436,000]	3,400 [3,900]	13 [10]
*In addition, about NOK 2bn goes daily to securities settlement in Norges Bank.			
Source: Norges Bank, NICS, VPS			

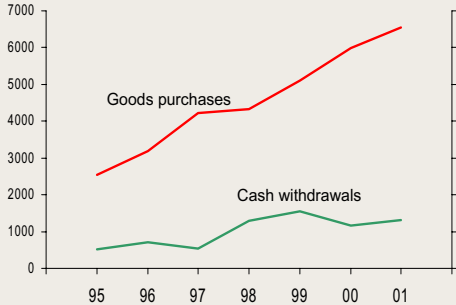
**Legal protection**, pursuant to the Act relating to Payment Systems, means that netting and settlement can be implemented even if a participant is insolvent if the transfer order has been entered into the system before the opening of insolvency proceedings. This means that the insolvent estate's general right to choose the agreements to be fulfilled is restricted inasmuch as the netting and/or settlement agreement *must* be fulfilled. When legal protection has not been established, the netting will be reversed and executed again without the insolvent participant bank.

**Chart 4.23** Norwegian card transactions abroad broken down by goods purchases and cash withdrawals. In thousands. 1995-2001



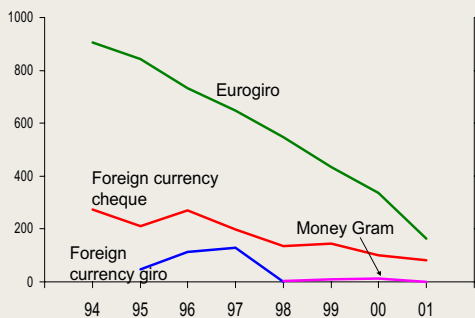
Source: Norges Bank

**Chart 4.24** Non-residents' card transactions in Norway broken down by goods purchases and cash withdrawals. In thousands. 1995-2001



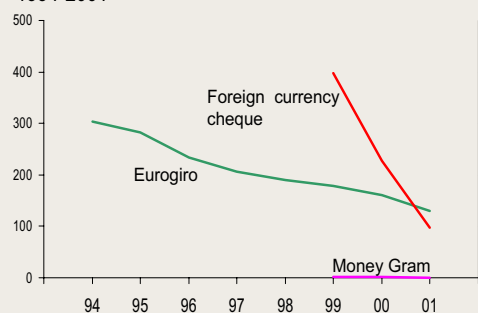
Source: Norges Bank

**Chart 4.25** Transfers from Norway. In thousands. 1994-2001



Source: Norges Bank

**Chart 4.26** Transfers to Norway. In thousands 1994-2001



Source: Norges Bank

opportunities to use 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 Norwegians' purchases in Internet shops based in other countries, where international cards are often used as a means of settlement.

Chart 4.23 shows that Norwegians' use of payment cards abroad has risen by 16%, reaching 26m transactions in 2001. Card use abroad has more than doubled in the last five years. Withdrawal of cash accounted for approximately one-third of transactions abroad in 2001. The value of Norwegians' card transactions abroad came to NOK 25.5bn in 2001, an increase of 10% on the previous year. Cash withdrawals abroad accounted for 41% of the total value of Norwegians' payment card use abroad. The average amount of each goods purchase was NOK 790, while the average cash withdrawal was NOK 1 490.

Foreigners use payment cards in Norway much less frequently. Transactions in 2001 numbered just under 7.8m, an increase of 10% on the previous year (Chart 4.24). About 17% of all foreign card transactions in Norway were cash withdrawals. The total value of foreigners' card use in Norway amounted to NOK 5.8bn in 2001, a rise of 8% on the previous year. The value of cash withdrawals accounted for 29% of total card use. Foreigners' goods purchases in Norway averaged NOK 630, while ATM withdrawals were more than twice as high at NOK 1 300.

SWIFT is the most extensively used network for cross-border transfers, both for interbank transactions and for customer payments. A total of 10.5m messages were sent from Norwegian to foreign banks in 2001, an increase of 14% on the previous year. About 80% of these messages are related to payments. However, since one payment may generate two to three messages, it is difficult to estimate reliably the number of payments on the basis of number of messages. Moreover, information about payment transactions broken down by customer transactions and interbank transactions is not available. Norwegian banks received 8.2m messages from foreign banks in 2001, an increase of 18% on the previous year. On a global basis, the number of messages rose by 20% from 2000 to 2001. About 60% of all messages worldwide are related to payments.

The number of cheque and giro transfers abroad has declined for a number of years, and from 2000 to 2001 the number fell by 46%, to 246 000 transfers. Eurogiro is the service that has declined most rapidly (Chart 4.25). Other instruments for cross-border transfers include foreign currency cheques and MoneyGram.

The number of transfers to Norway fell by nearly 42% in 2001. Chart 4.26 shows that Eurogiro is the most widely used instrument for transfers to Norway, accounting for six of ten transfers. In 2000, the situation was the reverse when foreign currency cheques had a market share of 60%.



## 5 | Prices and income in the payment system

Prices for payment services affect the public's use of these services and are therefore important for the efficiency of the payment system (see section 1.1 for more information). Norges Bank has gathered statistics on price trends in the payment system since 1989. The price statistics currently cover nine commercial and 18 savings banks, which at end-2001 accounted for 91% and 76% respectively of the two bank groups' sight deposits in NOK. Price information for all years has been gathered at the beginning of the year. For 2002, this information was collected during the first week of January. Most banks publish price lists for payment services on their websites.

### *The main picture*

To show price trends over time Norges Bank calculates average prices for all payment services every year. Prices for electronic payment services are unchanged or slightly lower in 2002 compared with prices in 2001. Prices for personal or business cheques rose moderately, while prices for paper-based giro transfers showed the largest increase in five years.

The main trend is that prices for payment services have generally increased substantially in the last 10 years. This trend should, however, be seen in the light of a gradual reduction of the interest margin (difference between banks' lending and deposit rates, Chart 5.1), a development which has benefited customers, and changes in the public's payment habits. Direct pricing of payment services combined with higher deposit rates and lower lending rates has reduced subsidisation of payment service users.

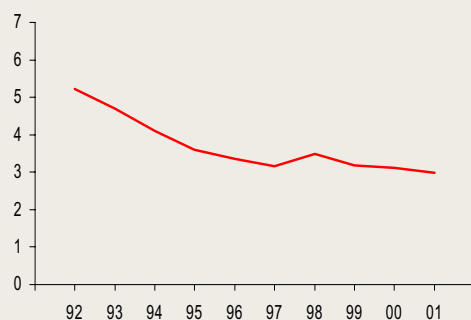
Despite the increases in prices for payment services, the public's average cost per transaction is lower this year than six years ago. This is due to the change in payment habits, from paper-based to electronic services (Chapter 4). By multiplying the average price for each individual payment service by its 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 indicates what the public pays on average for transactions that go through their bank accounts and takes into account the change in the public's payment habits. The weighted average price fell from NOK 4.56 in 1994 to NOK 4.21 in 2001. In 1994 prices, the public paid on average about one krone less per transaction in 2001 than in 1994. Growth in the use of payment cards in particular has reduced average prices for all transactions.

Norwegians pay bills almost exclusively by giro. Therefore, we have used the same calculation method to find the weighted average price for giro services alone (the

### **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 two bank group's average prices by their market shares, measured by number of transactions.

**Chart 5.1: Banks' interest rate margins<sup>1)</sup> in Norway 1992 - 2001. Percentage points**

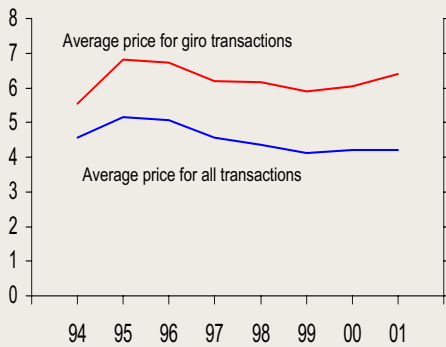


<sup>1)</sup> The difference between banks' lending and deposit rates as at 31 December

Source: Norges Bank



**Chart 5.2:** Average price per transaction and average price per giro transaction in Norway 1994 - 2001. Prices in NOK.



Source: Norges Bank

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 declined steadily until 1999. The average price has increased somewhat in the last two years, however, and in 2001 each giro payment cost on average NOK 6.39. The reason for this increase is that some paper-based giro services have become considerably more expensive during the period and the public has not shifted to less expensive giro services fast enough to reduce the weighted average price. Nevertheless, the inflation-adjusted average price for giro services has dropped by about 15% since 1994.

The decline in the average price per transaction reflects only one aspect of society's gains due to the development of the payment system. New ways of performing payment services and an increasing degree of self-service have reduced customers' needs to visit banks during opening hours and have also reduced time and travel costs related to payment services.

## 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 (i.e. other than where the customer has an account) are also possible in Norway. 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 cashback in connection with goods purchases other than the fee connected to the actual goods purchase.

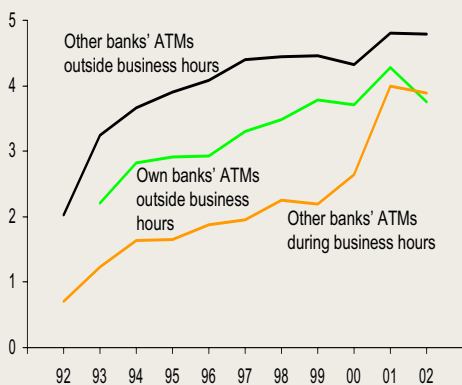
### *ATM withdrawals*

The average 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 it is made during or outside the bank's business hours.

Average prices for ATM withdrawals have increased considerably most years from 1992 to 2001, but from 2001 to 2002 prices fell somewhat. Withdrawals from one's own bank's ATMs during business hours are usually free, while withdrawals outside business hours cost on average NOK 3.76 in 2002. The average price for this service dropped 13% from 2001 to 2002 after one large bank reduced the price from NOK 5 to NOK 0. The average price for withdrawals from other banks' ATMs during and outside banks' business hours was NOK 3.89 and NOK 4.79 respectively, virtually unchanged compared with last year.

Interbank fees for ATM services spread the costs of a coordinated ATM system among the banks. The interbank fee is paid by the cardholder's bank to the bank that owns the ATM terminal where the withdrawal is made. From 1995 to 2001, this fee was NOK 4.50, unless two or more banks mutually agreed otherwise. The fee was increased to NOK 6.50 in January 2002. The average price for withdrawals from other banks' ATMs outside business hours was

**Chart 5.3** Prices for ATM withdrawals 1992-2002. Average for all banks. Prices in NOK



Source: Norges Bank

approximately the same as the interbank fee from 1997 to 2001. The average price for withdrawals from other banks' ATMs during business hours has previously been considerably less than NOK 4.50. In 2001, however, the average price for this service rose considerably and converged toward the level of the interbank fee.

## 5.2 Domestic payment services

### *Electronic payment services*

Average prices for the most important electronic services for the retail market have shown only moderate variations in the last five years (Chart 5.4). The average price for goods purchases at payment terminals (EFTPOS) fell by about 7%, while prices for giro payments via the Internet and for telephone giros are virtually unchanged compared with last year.

Average prices for electronic services for the corporate market, however, have increased in the last five years up to and including 2001 (Chart 5.5). There was a reversal of this trend in 2002. Notified remittance was the only corporate service that increased appreciably in price in 2002, with a 12% increase compared with 2001. Average prices for the other electronic services either declined, as for example the price for direct debits, or remained virtually unchanged compared with the year before.

When special notification is sent to the payee, the payer's bank is charged an interbank fee of NOK 2 by the payee's bank. Services with notification are therefore more expensive for the public than the same payment services without notification, but the price difference is generally less than NOK 2. Services that employ customer identification numbers (CID) are also less expensive than comparable services without notification. The charge for sending payment confirmation is usually higher at large banks than at small banks.

### *Paper-based services*

A substantial price increase on giro services at the counter and a moderate increase otherwise (Chart 5.6) have influenced average prices for paper-based services for retail customers. Increases in prices for giro services at the counter were the highest in five years. Average prices for giros paid by account debits initiated at the counter and giros paid in cash rose by about 35% from 2001 to 2002. The average price for a mail giro also increased, but more moderately (10%) to NOK 5.67 in 2002. Mail giros are the most cost-effective of all paper-based services and this is reflected in the price for this service, which is the lowest of all paper-based services. The last three years' pronounced increase in the average price of personal cheques levelled off in 2002 however.

Chart 5.7 shows developments in average prices for paper-based services for the corporate sector. The price of

### **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 (i.e. a closed communication channel between the company and the bank/BBS). This service is used for individual payments, retail payments, account adjustments etc. Remittances may include a CID, with or without notification.

**Company terminal giro:** A collective term for company terminal payment solutions that were established by someone other than the BBS.

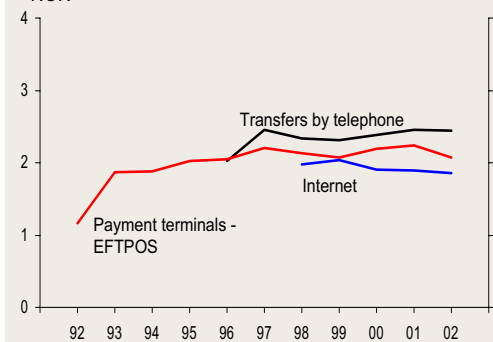
**OCR:** A paper-based giro with a special code that makes it possible to register the amount and allows the payee to demand payment electronically.

**OCR file:** The bank keeps the form.

**OCR return:** The form is returned to the payee.

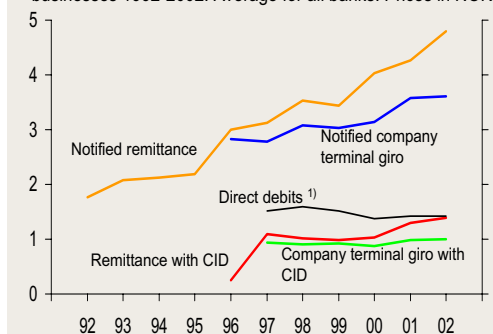
**Money order:** A paper-based giro without the payee's account number which must be presented in the bank in order to receive payment.

**Chart 5.4** Prices for electronic payment services for retail customers 1992-2002. Average for all banks. Prices in NOK



Source: Norges Bank

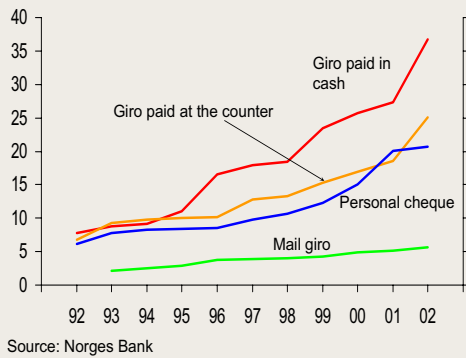
**Chart 5.5** Prices for selected electronic giro services for businesses 1992-2002. Average for all banks. Prices in NOK.



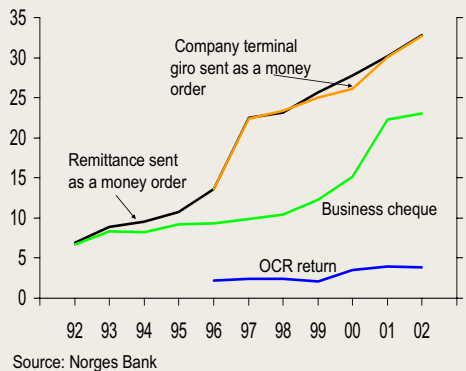
<sup>1)</sup>Prices for direct debits apply to the payee (invoice issuer)

Source: Norges Bank

**Chart 5.6** Prices for paper-based payment services for retail customers 1992-2002. Average for all banks. Prices in NOK.



**Chart 5.7** Prices for paper-based payment services for businesses 1992-2002. Average for all banks. Prices in NOK.



**Banks discount schemes:**

Pensioners receive moderate discounts or price exemptions for a given number of paper-based and electronic transactions.

Other customer groups receive discounts or price exemptions, but in general these only apply to electronic payment services. Such discounts often require a certain minimum deposit balance or loan.

Discounts on the use of expensive paper-based services at the counter have been reduced considerably.

corporate cheques rose by 5% to NOK 23.08 in 2002. This is a slight increase compared with the price increases in the five previous years, which varied between 18% and 46%. There was a marginal decline in average prices for OCR-archive and OCR-return services in 2002. Average prices for both company terminal giros with notification and remittances with notification increased by about 8%, roughly the same as in the five previous years.

*Discounts, annual fees and start-up fees*

Banks tend to publicise their customer benefit programmes and discount schemes more often than before. Most banks in the survey have customer benefit programmes and offer reduced prices or price exemptions for special account or customer groups. Price reductions or exemptions are most frequently offered to pensioners and young people aged 13 to 18. 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 retail and corporate customers annual fees or start-up fees in connection with a number of electronic services. Annual and start-up fees cover access to individual payment services. This sort of pricing is normal for products and services that require substantial investment before production can begin, while the unit price is low.

The average annual fee for a combined payment card (a card with both BankAxept and VISA or Master Card functionality) increased by about 13%, from NOK 205 in 2001 to NOK 232 in 2002. A joint agreement among the banks stipulates that newly established banks shall pay a one-time fee (interbank fee) of NOK 250 for each new card issued. This fee is designed to cover banks' joint costs for development and adaptation of a common infrastructure for payment cards. Fifteen of the 27 banks in the survey charge an annual fee for combined cards that is exactly the same as the one-time fee. With the exception of one bank, the other banks in the survey charge a lower annual fee for combined cards.

The annual fee for using the security calculator that provides access to Internet banking services (Digipass) fell on average from NOK 82 in 2001 to NOK 66 in 2002. In 2002, 15 banks in the survey provided free access to Internet banking services, compared with nine banks in 2001. Some banks also offer other security card solutions that are less expensive than Digipass. In 2002, three banks in the survey charged a start-up fee for providing customers access to the Internet banking services, compared with eight banks in 2001. The start-up fee dropped on average from NOK 56 in 2001 to NOK 27 in 2002, an indication that this start-up fee will soon disappear. The rapid fall in annual and start-up fees for Internet services in the last two years may be a sign of intensified competition in the market for Internet banking services.

### 5.3 Price spread

Average prices for payment services can conceal large variations in actual prices between banks. Below we consider the price spread on payment services for the retail market in relation to the banks' size and category. 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.

#### Main trend <sup>9</sup>

There have been minor changes in the price spread for payment services for retail customers in the last five years. Therefore, we will focus on the spread in prices in 2002. Prices for ATM withdrawals vary widely. Withdrawals from customers' own ATMs during business hours are free at all banks but one. Two banks in the survey impose no charge for withdrawals from other banks' ATMs outside business hours, while the remaining banks charge an average of NOK 4.30 for this service. Prices for other kinds of ATM withdrawals vary widely. At eight banks in the survey, customers can make withdrawals from their banks' ATMs outside of business hours free of charge, while the other banks charge an average of NOK 3.60 (Chart 5.8). Ten banks allow customers to make withdrawals from other banks' ATMs during business hours free of charge, while the other banks charge an average of NOK 4.50 (Chart 5.9).

The price spread for electronic services is narrower than the price spread for ATM withdrawals, but wider than the price spread for paper-based services. There is little variation in prices for payment card use in connection with goods purchases. An increasing number of banks charge NOK 2 for this service. The price spread is wider for giros paid over the Internet (Chart 5.11) than for payment card use in connection with goods purchases. One reason for this is that four banks in the survey provide this service free of charge. Among the banks that charge for this service, two have increased the price while one has reduced the price in 2002. The price spread is particularly narrow for all paper-based services for retail customers (Chart 5.12). All banks in the survey seem to have the same pricing policy (and price trends) with regard to these services, although prices may vary somewhat from one bank to another.

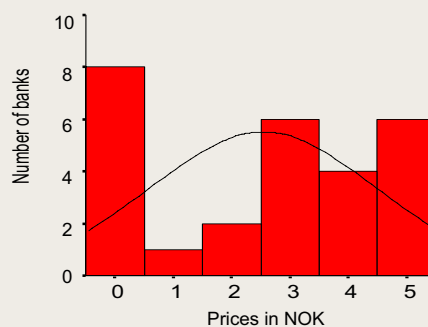
#### Price spread between commercial and savings banks<sup>10</sup>

An analysis of commercial banks' and savings banks' prices for payment services shows that on average prices for

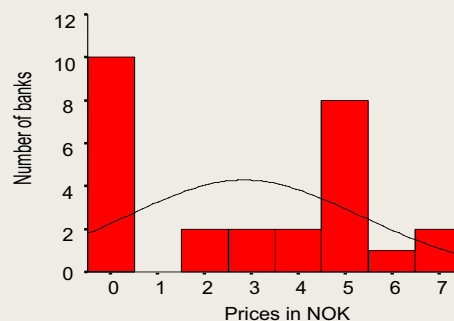
<sup>9</sup> In contrast to section 5.1 and 5.2, all references to average figures in this section apply to unweighted average prices.

<sup>10</sup> Tests of the significance of price differences between commercial and savings banks and between large and small banks are based on a level of significance equal to 0.05.

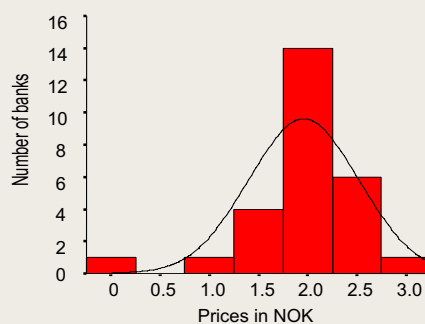
**Chart 5.8** Price spread for withdrawals from customers' own banks' ATMs outside business hours. Prices in NOK. 2002.



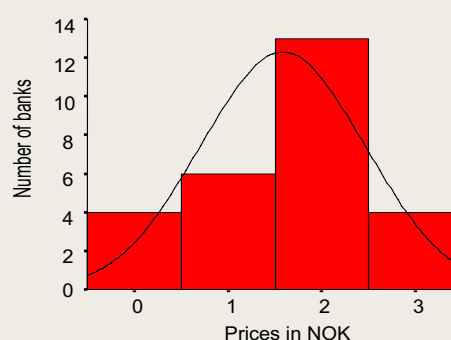
**Chart 5.9** Price spread for withdrawals from other banks' ATMs during business hours. Prices in NOK. 2002.



**Chart 5.10** Price spread for use of payment cards in payment terminals (EFTPOS). Prices in NOK. 2002.

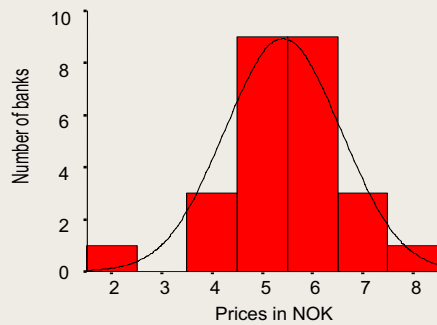


**Chart 5.11** Price spread for giros paid via the Internet. Prices in NOK. 2002.





**Chart 5.12** Price spread for mail giros. Prices in NOK. 2002.



Charts 5.8 - 5.12

The shape of the curves in Charts 5.8 - 5.12 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.

**Criteria for grouping banks by size**

If both the share of the bank's total assets and the share of total deposits in NOK are greater than or equal to 2%, the bank is considered **large**.

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

many payment services are higher in commercial banks than in savings banks. This is in line with previous years. Commercial banks as a group cannot be said to charge significantly higher prices than savings banks, taking into account the small price differences. However, in 2002, commercial banks as a group charge significantly more for electronic payments services with notification for corporate customers.

*Price spread and banks' size*

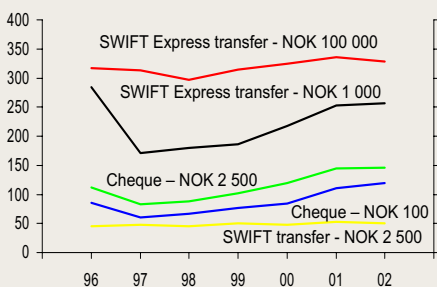
For most of the payment services in the statistics there seems to be a clear connection between price level and banks' size. Banks included in the survey have been divided into two categories according to size (see information about criteria in the margin). The relationship between these two categories and price level for all payment services has been investigated. Large banks as a group tend to charge higher fees than small banks. The survey shows that the large banks as a group charge higher prices than the small banks for all paper-based payment services for the retail market and for all ATM services. Large banks as a group also charge significantly higher fees than small banks for electronic payments services for the retail market. The annual fee for using payment cards is also higher at large banks as a group than at small banks. The difference in price for card use in connection with goods purchases is not large enough, however, to maintain that large banks as a group charge significantly more for this service.

5.4 Transfers abroad

Prices for international payments have received increased attention in recent years. This is due to work to prepare for an integrated money market in the EU and especially to the EU's regulation on cross-border payments in euro issued in 2001. The regulation stipulates that prices for domestic and cross-border payments in euro shall be the same within the internal market (see Chapter 2).

Prices for cross-border transfers depend on the amount to be transferred and whether the transaction is paper-based or electronic (Charts 5.13 and 5.14). Paper-based payment services are usually more expensive than similar electronic services. Compared with prices for domestic payment services in Norway, prices for cross-border payments are between 10 and 100 times higher. The main reason for this is the lack of payment systems which can effectively handle cross-border retail payments. Therefore, banks use expensive solutions that involve one or more correspondent banks and considerable manual labour to execute a payment transfer abroad. 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 in connection with cross-border payments may

**Chart 5.13** Prices for cross-border payments<sup>1)</sup>. Electronic transfers. Prices in NOK.



<sup>1)</sup> Unweighted average of prices in 27 banks

Source: Norges Bank



therefore be higher than the prices on which the charts are based.

Statistics show that the unweighted average prices for cross-border transfers in 2002 are generally the same as in 2001. The price spread is widest for paper-based and electronic SWIFT Express transfers of amounts in excess of NOK 1m (not included in the charts). The price spread for other cross-border payment services has generally been narrow throughout the period 1996-2002. One exception is the price for electronic and paper-based SWIFT Express transfers of amounts between NOK 100 000 and NOK 1m. After a number of years with considerable variations, the spread in prices for these services has narrowed during the last two years. Large banks usually charge more for foreign cheques and ordinary SWIFT transfers, while small banks charge more for all kinds of SWIFT Express transfers. However, these differences are insignificant.

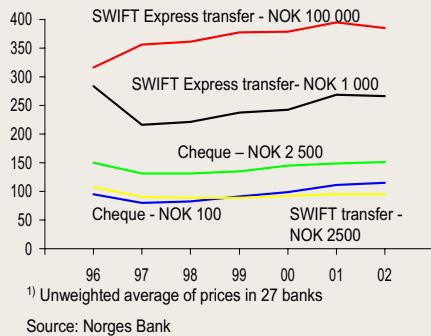
## 5.5 Banks' income from payment services

The banking industry reported approximately NOK 5.3bn as income from payment services in 2001. Income from domestic payment services was NOK 4.1bn, spread more or less evenly between commercial and savings banks. Income from cross-border transfers was roughly NOK 0.7bn, while income from other services (interbank transactions, letters of credit and collection services) was about NOK 0.5bn in 2001.

A closer study of income distribution by various payment services shows that the public's use of payment cards is a substantial source of income. Income from this service accounts for nearly half of banks' total income from payment services (Chart 5.16). This reflects the extensive use of payment cards in Norway and the significance of annual fees for payment cards as a source of income. Card abuse is a source of banks' losses and should be seen in connection with banks' income from card use. Such losses are low, however, partly because debit cards are normally used with on-line authorisation and balance checks in Norway. Income from electronic giros constitutes only 15% of total income. Income from paper-based giros amounts to 23% of banks' total income from payment services. Due to relatively high prices for the paper-based payment services, banks' income from these kinds of services is larger than the paper-based services' share of all transactions, which was 14% in 2001.

Bank's income from payment services has more than doubled since 1994. This is a substantial increase, but must be seen in connection with developments in banks' costs related to the production of payment services and the reduction in the interest margin. Norges Bank is conducting a survey of banks' costs in connection with payment services. The results of this survey will be published in the second half of 2002.

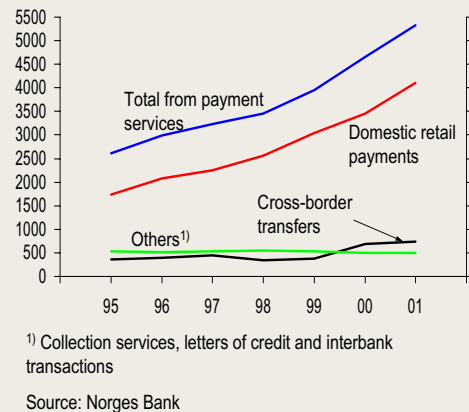
**Chart 5.14** Prices for cross-border payments<sup>1)</sup>. Paper-based transfers. Prices in NOK



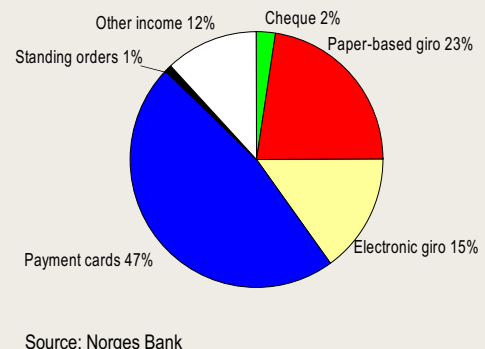
### Nordic survey of prices for cross-border payments:

In 2001, Foreningen Norden conducted a survey of prices for cross-border payments at a number of banks in the Nordic countries. The survey showed that Norwegian banks usually executed cross-border transfers more quickly but charged a higher fee than banks in the other Nordic countries. Fees for cross-border payment services are many times higher than fees for similar domestic payments at all banks in the survey.

**Chart 5.15** Banks' income from payment services 1995-2001. In millions of NOK.



**Chart 5.16:** Income from retail payment services by payment service in 2001. Percent.



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## A General data

Table 1: Basic statistical data: Norway

	1995	1996	1997	1998	1999	2000	2001
Population (million)	4.35	4.37	4.39	4.42	4.45	4.50	4.50
GDP current prices (million NOK)	928,745	1,016,589	1,096,170	1,114,827	1,197,457	1,423,864	1,472,038
Mainland GDP, market value (billion NOK)	790,070	832,953	893,614	962,546	998,473	1,054,476	1,107,416
GDP pr capita (NOK)	213,583	232,631	249,543	252,360	269,374	316,178	327,120
1 USD in NOK (at year-end)	6.35	6.35	7.25	7.59	8.01	9.07	9.01
1 Ecu/euro in NOK (at year-end. Euro from 1999)	8.29	8.09	8.06	8.90	8.10	8.13	7.97

Table 2: Technological infrastructure in Norway

	1993	1994	1995	1996	1997	1998	1999	2000
<b>Fixed network telephone subscribers</b>	<b>2,334,836</b>	<b>2,394,303</b>	<b>2,443,585</b>	<b>2,484,173</b>	<b>2,474,964</b>	<b>2,475,490</b>	<b>2,445,734</b>	<b>2,386,446</b>
PSTN	2,334,836	2,392,042	2,431,271	2,440,185	2,325,010	2,165,530	1,913,657	1,682,603
ISDN 2B+D		2,087	11,580	41,819	146,005	304,636	524,999	696,289
ISDN 30B+D		174	734	2,169	3,949	5,324	7,078	7,554
<b>Mobile telephone subscribers</b>	<b>371,403</b>	<b>588,478</b>	<b>981,305</b>	<b>1,261,445</b>	<b>1,676,763</b>	<b>2,106,414</b>	<b>2,744,793</b>	<b>3,367,763</b>
NMT	362,500	460,009	488,528	444,614	387,751	310,582	216,272	133,272
GSM	8,903	128,469	492,777	816,831	1,289,012	1,795,832	2,528,521	3,234,491
<b>Internet subscribers</b>						<b>381,342</b>	<b>715,922</b>	<b>1,176,552</b>
<b>Cable TV</b>	<b>626,451</b>	<b>664,179</b>	<b>677,186</b>	<b>664,852</b>	<b>705,125</b>	<b>774,607</b>	<b>788,722</b>	<b>823,320</b>
Fixed network penetration-subscribers (%)	54	55	56	57	56	56	55	53
Fixed network penetration-channels (%)	54	55	57	59	62	66	71	73
Mobile telephone penetration (%)	9	14	22	29	38	48	62	75

## 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	2001
Notes and coins	39,076	39,865	42,217	42,142	43,365	42,524	42,038
Deposits in transaction accounts	178,690	208,072	227,382	237,046	300,131	328,816	337,363
Narrow money supply (M1)	217,766	247,937	269,599	279,188	343,496	371,340	379,401
Other deposits	296,778	294,741	278,741	292,820	295,822	326,351	376,694
Certificates of deposit	15,731	21,686	30,200	33,321	30,803	34,152	38,982
M1 + other short-term deposits (M2)	530,275	564,364	578,540	605,329	670,121	731,843	795,077

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

	1995	1996	1997	1998	1999	2000	2001
Banks' cash holdings	3,340	3,893	4,240	4,395	5,116	4,879	5,290
Cash holdings, annual average	3,095	3,568	3,835	3,940	4,519	4,431	4,817
Banks' site deposits in the central bank	1,498	9,597	8,139	4,716	18,330	11,540	17,438
Site deposits (annual average)	2,809	4,826	8,463	6,986	8,016	11,079	14,164
Banks' fixed-rate deposits in the central bank (F-deposits)	0	11,173	1,928	0	0	0	0
Central bank lending (F-loans + D-loans)	8,312	98	547	6,918	13,600	14,160	12,443
Lending (F-loans + D-loans), annual average	4,626	6,351	790	1,225	4,385	5,104	13,356
Banks' deposits from the money-holding sector	7,442	14,153	14,828	13,421	13,594	15,774	16,633
Deposits from the money-holding sector, annual average	11,097	15,595	16,107	15,830	18,538	18,173	20,420

Table 5: Notes and coins. Annual average (in millions of NOK)

	1995	1996	1997	1998	1999	2000	2001
<b>Total notes and coins outstanding</b>	<b>38,359.1</b>	<b>39,588.4</b>	<b>41,220.9</b>	<b>43,577.7</b>	<b>43,837.2</b>	<b>43,571.3</b>	<b>42,946.9</b>
<i>Denomination of banknotes:</i>							
1000-krone	25,522.1	25,985.4	26,711.4	27,772.9	27,290.5	26,336.4	24,713.2
500-krone	2,991.7	3,465.2	4,068.0	4,875.1	5,588.1	6,106.5	6,920.6
200-krone	1,025.1	1,771.2	2,629.7	3,649.5	3,949.2	4,274.7	4,446.4
100-krone	5,727.5	4,961.6	4,245.8	3,473.3	3,026.7	2,684.4	2,463.6
50-krone	584.7	628.8	628.6	716.6	711.9	717.3	727.1
<i>Denomination of coins</i>							
20-krone	368.6	531.8	655.1	778.7	873.4	966.3	1,124.0
10-krone	951.6	1,019.5	1,009.5	1,029.5	1,046.3	1,086.8	1,110.9
5-krone	387.8	400.8	415.2	440.3	473.9	486.8	496.8
1-krone	471.9	492.0	518.4	561.0	590.2	617.2	640.8
0.5-krone	128.1	133.8	142.1	150.3	157.2	165.2	174.0
0.25-krone	40.4	40.3	40.3	:	:	:	:
0.10-krone	134.0	132.4	131.2	130.5	130.0	129.7	129.5
Copper	25.6	25.6	25.6	:	:	:	:



## C Institutional framework

**Table 6: Institutional infrastructure**

	1995	1996	1997	1998	1999	2000	2001
<b>Norges Bank</b>							
Number of branches/NOKAS branches from 2001	13	13	13	13	13	13	11
Number of accounts	:	:	:	:	:	320	299
<b>All banks (including Norway Post)</b>							
Number of institutions	:	148	146	146	144	143	144
Number of foreign banks' branches	:	3	6	6	8	9	8
Number of bank branches	1,568	1,553	1,515	1,492	1,483	1,472	1,440
Number of branches (Norway Post)	2,356	2,091	1,618	1,280	1,257	1,261	1,320
Number of accounts in all banks	11,494,535					11,534,617	

**Table 7: Average daily turnover in NBO (in millions of NOK)**

	1999	2000	2001
<b>Total (approximately)</b>	<b>148,000</b>	<b>143,000</b>	<b>175,000</b>
VPO	2,429	2,224	2,224
NICS retail transactions	4,000-5,000	4,000-5,000	4,500-5,500
NICS SWIFT	5,201	3,796	5,305
Total gross/RTGS	135,602	132,516	163,348
<i>Of which</i>			
SWIFT gross/RTGS	127,276	123,249	156,369
Other gross/RTGS	8,326	9,267	6,979

**Table 8: Average daily turnover in NICS (number of transactions)**

	1999	2000	2001
<b>SWIFT Total</b>	<b>4,589</b>	<b>4,626</b>	<b>5,022</b>
SWIFT gross/RTGS	331	282	303
SWIFT net settlement	4,258	4,344	4,719
NICS retail transactions (in millions)	2-3	2-3	2-3

**Table 9: Average daily turnover in NICS (in billions of NOK)**

	1999	2000	2001
<b>SWIFT Total</b>	<b>145</b>	<b>140</b>	<b>167</b>
SWIFT gross/RTGS	127	123	151
SWIFT net settlement	18	17	16
NICS retail transactions	20-25	20-25	30-35
<b>NICS total (approximately)</b>	<b>165-170</b>	<b>160-165</b>	<b>197-202</b>

**Table 10: Participation in SWIFT**

	2000		2001	
	Norwegian	Foreign	Norwegian	Foreign
Members	17	2,307	21	2,241
Sub-members/domestic users covered by members abroad	9	3,036	8	3,027
Participants	5	1,949	5	1,931
<b>Total</b>	<b>31</b>	<b>7,292</b>	<b>34</b>	<b>7,199</b>

**Table 11: SWIFT message traffic to/from Norway (in thousands of transactions)**

	1999	2000	2001
Total messages sent	8,124	9,238	10,521
Total messages received	6,051	6,920	8,163
Global SWIFT traffic	1,058,836	1,273,913	1,533,906

Table 12: Number of ATMs

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>1,735</b>	<b>1,707</b>	<b>1,741</b>	<b>1,792</b>	<b>1,861</b>	<b>1,896</b>	<b>1,944</b>	<b>2,007</b>	<b>2,119</b>	<b>1,934</b>
Commercial banks	737	738	750	775	796	808	867	900	1,026	979
Savings banks	998	969	991	1,017	1,065	1,088	1,077	1,107	1,093	955

Table 13: Use of ATMs (in millions of transactions)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>70.1</b>	<b>74.6</b>	<b>80.3</b>	<b>87.4</b>	<b>97.6</b>	<b>103.9</b>	<b>107.1</b>	<b>107.3</b>	<b>106.0</b>	<b>108.8</b>
<i>Of which:</i>										
Withdrawals from other banks' ATMs	:	:	:	:	:	50.5	52.1	51.3	40.4	40.3
<b>Commercial banks' ATMs, total</b>	<b>28.8</b>	<b>30.7</b>	<b>33.1</b>	<b>36.6</b>	<b>41.5</b>	<b>44.1</b>	<b>46.3</b>	<b>45.7</b>	<b>46.2</b>	<b>46.1</b>
Bank cards	:	:	:	35.4	39.7	41.9	43.6	42.5	42.1	42.1
Domestic credit cards	:	:	:	0.3	0.5	0.6	0.7	0.8	0.7	0.7
Payment cards issued by international credit card companies	:	:	:	0.9	1.3	1.6	2.0	2.4	3.4	3.3
<b>Savings banks' ATMs, total</b>	<b>41.3</b>	<b>43.9</b>	<b>47.2</b>	<b>50.8</b>	<b>56.1</b>	<b>59.8</b>	<b>60.8</b>	<b>61.6</b>	<b>59.8</b>	<b>62.8</b>
Bank cards	:	:	:	50.6	55.5	59.0	59.6	59.8	56.4	59.9
Domestic credit cards	-	-	-	-	-	-	-	0.0	0.2	0.3
Payment cards issued by international credit card companies	:	:	:	0.3	0.6	0.8	1.2	1.8	3.2	2.5

Table 14: Use of ATMs (in billions of NOK)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>56.2</b>	<b>60.2</b>	<b>67.2</b>	<b>74.9</b>	<b>84.6</b>	<b>94.5</b>	<b>102.1</b>	<b>105.5</b>	<b>106.1</b>	<b>115.8</b>
<i>Of which:</i>										
Withdrawals from other banks' ATMs	:	:	:	:	:	46.0	47.6	48.1	47.5	47.5
<b>Commercial banks' ATMs, total</b>	<b>24.9</b>	<b>25.8</b>	<b>28.7</b>	<b>31.8</b>	<b>37.1</b>	<b>41.4</b>	<b>45.7</b>	<b>47.0</b>	<b>48.9</b>	<b>52.2</b>
Bank cards	:	:	:	30.3	34.9	38.5	42.2	42.9	43.7	47.0
Domestic credit cards	:	:	:	0.4	0.6	0.7	0.9	1.0	0.9	0.9
Payment cards issued by international credit card companies	:	:	:	1.1	1.7	2.2	2.6	3.1	4.3	4.3
<b>Savings banks' ATMs, total</b>	<b>31.3</b>	<b>34.4</b>	<b>38.5</b>	<b>43.1</b>	<b>47.4</b>	<b>53.1</b>	<b>56.4</b>	<b>58.5</b>	<b>57.2</b>	<b>63.6</b>
Bank cards	:	:	:	42.8	46.7	52.0	54.9	56.3	54.2	60.1
Domestic credit cards	-	-	-	-	-	-	-	0.0	0.3	0.5
Payment cards issued by international credit card companies	:	:	:	0.3	0.8	1.0	1.5	2.2	2.7	3.0

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

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Payment terminals, total</b>	<b>:</b>	<b>:</b>	<b>29,321</b>	<b>34,706</b>	<b>39,033</b>	<b>46,592</b>	<b>52,235</b>	<b>58,742</b>	<b>65,326</b>	<b>71,170</b>
Payment terminals owned by banks	14,595	21,727	23,668	28,897	33,679	41,299	46,849	51,618	55,208	58,666
Payment terminals owned by oil companies	:	:	5,653	5,809	5,354	5,293	5,386	7,124	7,093	6,752
Payment terminals owned by shops	:	:	:	:	:	:	:	:	3,025	5,752
<b>Locations with payment terminals, total</b>	<b>:</b>	<b>:</b>	<b>19,996</b>	<b>23,239</b>	<b>27,048</b>	<b>32,761</b>	<b>38,029</b>	<b>42,164</b>	<b>47,434</b>	<b>48,814</b>
With payment terminals owned by banks	:	:	17,827	21,081	24,841	30,607	35,861	39,978	44,468	45,055
With payment terminals owned by oil companies	2,137	2,136	2,169	2,158	2,207	2,154	2,168	2,186	2,050	2,133
With payment terminals owned by shops	:	:	:	:	:	:	:	:	916	1,626

**Table 16: Use of payment terminals (EFTPOS) (in millions of transactions)**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>76.6</b>	<b>97.4</b>	<b>123.1</b>	<b>143.4</b>	<b>182.5</b>	<b>234.7</b>	<b>288.6</b>	<b>338.8</b>	<b>391.6</b>	<b>444.5</b>
<b>Banks' payment terminals, total</b>	<b>36.0</b>	<b>51.8</b>	<b>72.3</b>	<b>90.2</b>	<b>120.6</b>	<b>162.7</b>	<b>210.7</b>	<b>254.7</b>	<b>302.4</b>	<b>329.1</b>
Bank cards	:	:	:	86.6	116.5	156.8	202.9	244.8	291.8	317.8
Domestic credit cards	:	:	:	0.2	0.4	0.7	1.0	1.3	0.6	0.6
Payment cards issued by international credit card companies	:	:	:	3.4	3.8	5.2	6.8	8.5	10.0	10.7
<b>Oil companies' payment terminals, total</b>	<b>40.6</b>	<b>45.6</b>	<b>50.8</b>	<b>53.2</b>	<b>61.9</b>	<b>72.0</b>	<b>77.9</b>	<b>82.6</b>	<b>84.1</b>	<b>90.3</b>
Bank cards	11.3	13.1	14.2	17.2	21.1	27.4	31.9	36.4	45.6	50.6
Domestic credit cards	-	-	-	-	-	-	-	-	-	-
Payment cards issued by international credit card companies	:	:	:	0.4	1.5	1.8	2.2	2.5	3.1	2.6
Oil companies' cards	29.3	32.5	36.6	35.6	39.3	42.8	43.8	43.8	35.4	37.1
<b>Use of bank cards in shops' terminals</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1.5</b>	<b>5</b>	<b>25</b>

**Table 17: Use of payment terminals (EFTPOS) (in billions of NOK)**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>22.4</b>	<b>31.7</b>	<b>43.0</b>	<b>55.9</b>	<b>75.4</b>	<b>100.8</b>	<b>127.1</b>	<b>155.0</b>	<b>187.0</b>	<b>210.2</b>
<b>Banks' payment terminals, total</b>	<b>14.1</b>	<b>21.8</b>	<b>33.2</b>	<b>41.8</b>	<b>58.6</b>	<b>81.0</b>	<b>105.5</b>	<b>129.9</b>	<b>153.2</b>	<b>167.7</b>
Bank cards	:	:	:	38.5	54.6	75.4	98.6	121.5	143.5	156.8
Domestic credit cards	:	:	:	0.4	0.5	0.8	0.8	0.9	0.7	0.8
Payment cards issued by international credit card companies	:	:	:	2.9	3.4	4.7	6.1	7.5	9.0	10.1
<b>Oil companies' payment terminals, total</b>	<b>8.2</b>	<b>9.8</b>	<b>9.8</b>	<b>14.0</b>	<b>16.9</b>	<b>19.9</b>	<b>21.6</b>	<b>23.6</b>	<b>29.1</b>	<b>29.1</b>
Bank cards	2.5	3.1	1.6	4.3	5.4	7.3	8.6	10.1	13.7	13.2
Domestic credit cards	-	-	-	-	-	-	-	-	-	-
Payment cards issued by international credit card companies	:	:	:	0.1	0.2	0.3	0.3	0.4	0.5	0.4
Oil companies' cards	5.8	6.7	8.2	9.6	11.3	12.3	12.6	13.1	14.9	14.2
<b>Use of bank cards in shops' terminals</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1.6</b>	<b>4.7</b>	<b>13.4</b>

**Table 18: Number of payment cards (thousands)**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>3,434</b>	<b>3,667</b>	<b>4,100</b>	<b>5,025</b>	<b>5,766</b>	<b>6,583</b>	<b>7,527</b>	<b>8,406</b>	<b>9,156</b>	<b>10,198</b>
Bank cards	2,121	2,082	1,999	2,561	2,835	3,227	3,561	3,734	4,020	4,271
Domestic credit cards	375	389	452	480	589	514	620	687	672	760
Payment cards issued by international credit card companies	938	1,196	1,649	1,984	2,343	2,842	3,346	3,985	4,464	5,167
Combined cards	:	:	1,041	1,597	1,879	2,287	2,759	3,186	3,497	4,083
<b>Number of cards minus combination cards counted twice</b>	<b>:</b>	<b>:</b>	<b>3,059</b>	<b>3,428</b>	<b>3,887</b>	<b>4,296</b>	<b>4,768</b>	<b>5,220</b>	<b>5,658</b>	<b>6,115</b>
<i>Of which:</i>										
Debit cards	:	:	:	2,630	2,912	3,320	3,563	3,733	4,020	4,271
Credit cards	:	:	:	798	976	976	1,205	1,487	1,638	1,844
Oil companies' cards	806	948	1,033	1,372	1,592	1,713	1,772	1,633	1,429	1,496

**Table 19: Number of agreements**

	2000	2001
E-banking agreements	933,335	1,340,661
Mail giro agreements	3,108,420	2,691,481
Number of direct debits	3,500,000	4,044,848
Number of direct debit beneficiaries	6,041	6,473
Direct debits where payees have power of attorney	558	541
Direct debits where payees have no power of attorney	616	659

## D Cash withdrawals in Norway

Table 20: Cash withdrawals (in millions of transactions)

	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	:	<b>126.3</b>	<b>128.6</b>	<b>129.0</b>	<b>144.7</b>	<b>236.6</b>	<b>262.9</b>
<b>Cash withdrawals at the counter</b>	:	<b>28.7</b>	<b>24.7</b>	<b>21.9</b>	<b>37.4</b>	<b>27.9</b>	<b>24.5</b>
Commercial banks	:	28.7	24.7	21.9	18.8	15.6	12.8
Savings banks	:	:	:	:	18.7	12.3	11.7
<b>ATM withdrawals</b>	<b>87.4</b>	<b>97.6</b>	<b>103.9</b>	<b>107.1</b>	<b>107.3</b>	<b>106.0</b>	<b>108.8</b>
Commercial banks	36.6	41.5	44.1	46.3	45.7	46.2	46.1
Savings banks	50.8	56.1	59.8	60.8	61.6	59.8	62.8
<b>Cash withdrawals at payment terminals (EFTPOS)</b>	:	:	:	:	:	<b>102.7</b>	<b>129.6</b>

Table 21: Cash withdrawals (in billions of NOK)

	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	:	<b>84.6</b>	<b>194.3</b>	<b>191.8</b>	<b>191.1</b>	<b>263.9</b>	<b>266.6</b>
<b>Cash withdrawals at the counter</b>	:	:	<b>99.8</b>	<b>89.7</b>	<b>85.6</b>	<b>120.9</b>	<b>104.4</b>
Commercial banks	:	118	100	90	86	72.3	59.1
Savings banks	:	:	:	:	:	48.6	45.2
<b>ATM withdrawals</b>	<b>74.9</b>	<b>84.6</b>	<b>94.5</b>	<b>102.1</b>	<b>105.5</b>	<b>106.1</b>	<b>115.8</b>
Commercial banks	31.8	37.1	41.4	45.7	47.0	48.8	52.2
Savings banks	43.1	47.4	53.1	56.4	58.5	57.2	63.6
<b>Cash withdrawals at payment terminals (EFTPOS)</b>	:	:	:	:	:	<b>36.9</b>	<b>46.4</b>

## E Use of payment instruments

Table 22: Use of Norwegian payment instruments (in millions of transactions)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>386.4</b>	<b>384.2</b>	<b>431.1</b>	<b>465.7</b>	<b>508.4</b>	<b>564.3</b>	<b>634.1</b>	<b>695.3</b>	<b>760.3</b>	<b>852.1</b>
<b>Giros total</b>	<b>295.7</b>	<b>282.2</b>	<b>313.5</b>	<b>324.5</b>	<b>335.2</b>	<b>343.9</b>	<b>360.0</b>	<b>371.3</b>	<b>370.4</b>	<b>403.4</b>
Electronic giros	76.1	79.7	86.7	101.7	125.1	146.5	173.9	202.7	221.0	270.9
Paper-based giros	219.6	202.5	226.7	222.9	210.1	197.4	186.2	168.5	149.3	132.5
<b>Payment cards total</b>	<b>52.6</b>	<b>70.4</b>	<b>91.3</b>	<b>118.8</b>	<b>156.1</b>	<b>207.5</b>	<b>264.6</b>	<b>317.7</b>	<b>385.9</b>	<b>445.8</b>
Electronic use	47.3	64.9	86.5	113.8	151.5	200.9	256.0	307.3	377.5	436.6
Manual/paper-based use	5.3	5.5	4.8	5.0	4.5	6.6	8.6	10.4	8.3	9.1
<b>Cheques total</b>	<b>38.1</b>	<b>31.6</b>	<b>26.3</b>	<b>22.4</b>	<b>17.1</b>	<b>12.9</b>	<b>9.4</b>	<b>6.3</b>	<b>4.0</b>	<b>2.9</b>

Table 23: Use of Norwegian payment instruments (in billions of NOK)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>2,221.9</b>	<b>1,885.4</b>	<b>2,237.2</b>	<b>2,474.5</b>	<b>4,257.4</b>	<b>4,683.4</b>	<b>4,781.9</b>	<b>5,837.0</b>	<b>6,933.6</b>	<b>7,059.0</b>
<b>Giros total</b>	<b>1,789.5</b>	<b>1,543.3</b>	<b>1,859.4</b>	<b>2,074.8</b>	<b>3,921.5</b>	<b>4,358.8</b>	<b>4,464.6</b>	<b>5,534.0</b>	<b>6,668.4</b>	<b>6,805.7</b>
Electronic giros	1,225.5	999.7	1,121.9	1,309.3	2,440.6	2,935.6	3,223.2	4,444.4	5,793.2	6,297.6
Paper-based giros	564.0	543.6	737.5	765.5	1,480.9	1,423.2	1,241.4	1,089.5	875.2	508.2
<b>Payment cards total</b>	<b>16.6</b>	<b>24.9</b>	<b>41.9</b>	<b>57.8</b>	<b>80.4</b>	<b>104.1</b>	<b>134.6</b>	<b>164.1</b>	<b>162.8</b>	<b>180.7</b>
Electronic use	16.6	24.9	34.8	49.3	74.6	97.4	125.3	151.2	153.9	171.0
Manual/paper-based use	:	:	7.1	8.4	5.8	6.7	9.3	12.9	8.9	9.7
<b>Cheques total</b>	<b>415.8</b>	<b>317.2</b>	<b>335.8</b>	<b>342.0</b>	<b>255.5</b>	<b>220.5</b>	<b>182.7</b>	<b>138.9</b>	<b>102.4</b>	<b>72.5</b>

Table 24: Giro services (in millions of transactions)

	1994	1995	1996	1997	1998	1999	2000	2001
<b>Giros total</b>	<b>313.6</b>	<b>324.6</b>	<b>335.1</b>	<b>343.9</b>	<b>360.0</b>	<b>371.3</b>	<b>370.4</b>	<b>403.4</b>
<b>Electronic giros total</b>	<b>86.7</b>	<b>101.7</b>	<b>125.1</b>	<b>146.5</b>	<b>173.9</b>	<b>202.7</b>	<b>221.0</b>	<b>270.9</b>
Terminal payments (closed network)	70.6	83.0	97.8	109.1	126.1	129.9	128.7	143.7
Payments via the Internet	-	-	:	:	3.2	14.5	34.6	65.7
Payments by phone	0.9	1.3	6.7	13.4	18.2	28.3	28.8	28.7
Direct debits	15.3	17.4	20.6	24.0	26.3	30.0	29.0	32.8
<b>Paper-based giros total</b>	<b>226.9</b>	<b>222.9</b>	<b>210.0</b>	<b>197.4</b>	<b>186.2</b>	<b>168.5</b>	<b>149.3</b>	<b>132.5</b>
Mail giros	88.6	96.9	101.1	104.3	106.9	107.0	90.2	74.3
Giros delivered at the counter	116.1	106.5	91.4	78.8	65.6	52.2	52.9	50.8
<i>Of which:</i>								
Cash payments	72.0	62.5	46.3	37.1	28.1	22.9	20.4	12.2
Account debits	25.0	25.0	27.1	27.4	24.5	29.2	32.4	37.7
Various giros registered in banks	19.1	19.1	18.1	14.2	13.0	-	0.0	0.8
Terminal payments sent as money orders	22.1	19.5	17.5	14.3	13.7	9.4	6.3	7.4

Table 25: Giro services (in billions of NOK)

	1994	1995	1996	1997	1998	1999	2000	2001
<b>Giros total</b>	<b>1,859.4</b>	<b>2,074.9</b>	<b>3,921.5</b>	<b>4,358.8</b>	<b>4,464.6</b>	<b>5,534.0</b>	<b>6,668.4</b>	<b>6,805.7</b>
<b>Electronic giros total</b>	<b>1,121.9</b>	<b>1,309.3</b>	<b>2,440.6</b>	<b>2,935.6</b>	<b>3,223.2</b>	<b>4,444.4</b>	<b>5,793.2</b>	<b>6,297.6</b>
Terminal payments (closed network)	1,051.7	1,233.6	2,310.6	2,779.2	3,041.1	4,185.7	5,445.4	5,851.3
Payments over the Internet	-	-	:	:	7.3	39.7	93.3	203.8
Payments by phone	1.5	2.1	11.3	22.8	31.0	55.6	52.5	57.6
Direct debits	68.7	73.6	118.7	133.6	143.8	163.5	202.0	184.8
<b>Paper-based giros total</b>	<b>737.5</b>	<b>765.6</b>	<b>1,480.9</b>	<b>1,423.2</b>	<b>1,241.4</b>	<b>1,089.5</b>	<b>875.2</b>	<b>508.2</b>
Mail giros	181.0	214.9	858.0	830.2	649.8	597.6	527.7	201.5
Giros delivered at the counter	549.0	544.6	569.7	557.2	561.0	473.9	336.1	297.5
<i>Of which:</i>								
Cash payments	183.4	175.4	188.4	179.1	126.5	143.8	111.5	83.9
Account debits	175.3	175.2	206.5	247.8	308.5	330.1	224.6	200.7
Various giros registered in banks	190.3	194.0	174.8	130.3	126.0	-	0.0	12.9
Terminal payments sent as money orders	7.5	6.1	53.2	35.8	30.6	18.1	11.4	9.2

Table 26: Total use of Norwegian payment cards. Cash withdrawals and goods payment (in millions of transactions)

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total card use</b>	<b>122.8</b>	<b>145.0</b>	<b>171.7</b>	<b>207.8</b>	<b>255.4</b>	<b>314.4</b>	<b>374.7</b>	<b>429.1</b>	<b>496.3</b>	<b>561.3</b>
<b>Banks</b>	<b>111.5</b>	<b>132.1</b>	<b>156.2</b>	<b>189.7</b>	<b>232.8</b>	<b>285.1</b>	<b>337.9</b>	<b>385.0</b>	<b>441.1</b>	<b>495.6</b>
<b>Domestic credit cards</b>	<b>0.6</b>	<b>0.7</b>	<b>0.8</b>	<b>1.1</b>	<b>1.2</b>	<b>1.4</b>	<b>1.7</b>	<b>1.9</b>	<b>2.4</b>	<b>2.7</b>
GE Capital Finans AS	:	:	:	:	:	:	:	0.7	0.8	0.9
DnB Kort AS	:	:	:	:	:	:	:	0.16	0.05	0.00
Gjensidige NOR (Union Bank of Norway)	:	:	:	:	:	:	:	1.0	1.5	1.8
<b>Payment cards issued by international credit card companies</b>	<b>10.6</b>	<b>12.3</b>	<b>14.7</b>	<b>16.9</b>	<b>21.4</b>	<b>27.9</b>	<b>35.1</b>	<b>42.2</b>	<b>52.8</b>	<b>63.0</b>

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

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total card use</b>	<b>14.9</b>	<b>17.1</b>	<b>109.2</b>	<b>135.8</b>	<b>166.4</b>	<b>204.6</b>	<b>242.6</b>	<b>277.1</b>	<b>314.6</b>	<b>353.7</b>
<b>Banks</b>	<b>:</b>	<b>:</b>	<b>92.1</b>	<b>116.0</b>	<b>141.5</b>	<b>173.3</b>	<b>204.4</b>	<b>232.3</b>	<b>259.8</b>	<b>291.8</b>
<b>Domestic credit cards</b>	<b>2.1</b>	<b>2.3</b>	<b>2.5</b>	<b>3.2</b>	<b>3.8</b>	<b>4.2</b>	<b>4.5</b>	<b>5.1</b>	<b>5.4</b>	<b>5.9</b>
GE Capital Finans AS	:	:	0.8	1.1	1.4	1.5	1.7	1.9	2.1	2.4
DnB Kort AS	:	:	0.2	0.3	0.3	0.4	0.4	0.4	0.1	0.0
Gjensidige NOR (Union Bank of Norway)	:	:	1.5	1.9	2.1	2.2	2.4	2.8	3.1	3.5
<b>Payment cards issued by international credit card companies</b>	<b>11.0</b>	<b>12.7</b>	<b>14.6</b>	<b>16.6</b>	<b>21.1</b>	<b>27.1</b>	<b>33.7</b>	<b>39.7</b>	<b>49.4</b>	<b>56.0</b>



**Table 28: Total use of payment cards issued by international credit card companies (in millions of transactions)**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total use of payment cards issued by international credit card companies</b>	<b>12.6</b>	<b>14.7</b>	<b>17.7</b>	<b>19.9</b>	<b>25.2</b>	<b>32.5</b>	<b>40.4</b>	<b>48.5</b>	<b>59.6</b>	<b>70.5</b>
American Express	1.2	1.3	1.6	1.4	1.6	2.0	2.2	2.4	3.0	3.4
Diners Club Norge AS	2.3	2.6	2.9	3.2	3.7	4.3	5.1	5.4	5.9	6.2
Europay Norge AS	2.8	3.6	4.5	5.4	7.1	9.3	11.4	13.3	15.3	16.5
VISA Norge AS	6.3	7.1	8.8	9.9	12.8	17.0	21.7	27.3	35.3	44.4
<i>Of which:</i>										
<b>Non-residents' use of payment cards issued by international credit card companies</b>	<b>2.0</b>	<b>2.4</b>	<b>3.0</b>	<b>3.0</b>	<b>3.8</b>	<b>4.6</b>	<b>5.3</b>	<b>6.2</b>	<b>6.7</b>	<b>7.5</b>
<b>Use of Norwegian payment cards issued by international credit card companies</b>	<b>10.6</b>	<b>12.3</b>	<b>14.7</b>	<b>16.9</b>	<b>21.4</b>	<b>27.9</b>	<b>35.1</b>	<b>42.2</b>	<b>52.8</b>	<b>63.0</b>

**Table 29: Total use of payment cards issued by international credit card companies (in billions of NOK)**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total use of payment cards issued by international credit card companies</b>	<b>12.8</b>	<b>14.8</b>	<b>17.1</b>	<b>19.1</b>	<b>24.3</b>	<b>30.9</b>	<b>38.1</b>	<b>45.2</b>	<b>54.8</b>	<b>61.9</b>
American Express	1.6	1.8	1.7	1.9	2.6	3.1	3.5	4.3	4.2	4.7
Diners Club Norge AS	2.7	3.0	3.4	3.7	4.1	4.8	5.6	6.0	6.8	7.1
Europay Norge AS	2.7	3.5	4.4	5.2	7.1	9.6	12.1	14.0	16.8	18.1
VISA Norge AS	5.8	6.5	7.6	8.3	10.5	13.4	16.9	20.8	27.0	32.0
<i>Of which:</i>										
<b>Non-residents' use of payment cards issued by international credit card companies</b>	<b>1.8</b>	<b>2.1</b>	<b>2.5</b>	<b>2.5</b>	<b>3.2</b>	<b>3.8</b>	<b>4.4</b>	<b>5.5</b>	<b>5.4</b>	<b>5.8</b>
<b>Use of Norwegian payment cards issued by international credit card companies</b>	<b>11.0</b>	<b>12.7</b>	<b>14.6</b>	<b>16.6</b>	<b>21.1</b>	<b>27.1</b>	<b>33.7</b>	<b>39.7</b>	<b>49.4</b>	<b>56.0</b>

**Table 30: Purchase of goods and services with Norwegian payment cards (in millions of transactions)**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Purchase of goods and services, total</b>	<b>:</b>	<b>:</b>	<b>:</b>	<b>118.8</b>	<b>156.1</b>	<b>207.5</b>	<b>264.6</b>	<b>317.7</b>	<b>385.9</b>	<b>445.8</b>
Bank cards	:	:	:	103.8	137.6	184.2	234.8	282.7	342.5	393.5
Domestic credit cards	:	:	0.3	0.4	0.5	0.4	0.7	0.8	0.9	1.2
Payment cards issued by international credit card companies	:	:	12.7	14.5	18.1	22.9	29.1	34.2	42.4	51.1

**Table 31: Purchase of goods and services with Norwegian payment cards (in billions of NOK)\***

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Payment of goods and services, total</b>	<b>:</b>	<b>:</b>	<b>:</b>	<b>57.8</b>	<b>80.4</b>	<b>104.1</b>	<b>134.6</b>	<b>164.1</b>	<b>162.8</b>	<b>180.7</b>
Bank cards	:	:	:	42.9	60.0	82.8	107.2	133.1	125.0	138.4
Domestic credit cards	:	:	1.4	1.8	2.1	1.9	3.1	3.5	3.3	3.7
Payment cards issued by international credit card companies	:	:	11.8	13.1	18.3	19.4	24.3	27.5	34.5	38.7

\* Figures up to 1999 include cashback at payment terminals

**Table 32: Cheques (in millions of transactions)**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total use of cheques</b>	<b>38.1</b>	<b>31.6</b>	<b>26.3</b>	<b>22.4</b>	<b>17.1</b>	<b>12.9</b>	<b>9.4</b>	<b>6.3</b>	<b>4.0</b>	<b>2.9</b>
Savings banks	20.0	16.3	13.7	12.8	9.8	7.4	5.6	3.9	2.5	1.9
Commercial banks	18.1	15.3	12.6	9.6	7.3	5.5	3.8	2.4	1.5	1.0

**Table 33: Cheques (in billions of NOK)**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total use of cheques</b>	<b>415.8</b>	<b>317.2</b>	<b>335.8</b>	<b>342.0</b>	<b>255.5</b>	<b>220.5</b>	<b>182.7</b>	<b>139.0</b>	<b>102.4</b>	<b>72.5</b>
Savings banks	81.5	90.3	110.5	159.4	103.9	87.8	72.6	65.9	47.1	37.1
Commercial banks	334.3	226.9	225.3	182.6	151.6	132.7	110.1	73.1	55.3	35.5

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

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>6,828</b>	<b>7,681</b>	<b>9,603</b>	<b>10,607</b>	<b>13,483</b>	<b>17,280</b>	<b>21,419</b>	<b>25,647</b>	<b>29,702</b>	<b>34,003</b>
<b>Use of Norwegian cards abroad</b>	<b>4,809</b>	<b>5,283</b>	<b>6,560</b>	<b>7,534</b>	<b>9,573</b>	<b>12,530</b>	<b>15,800</b>	<b>18,986</b>	<b>22,560</b>	<b>26,153</b>
Domestic credit cards	:	:	:	0	0	1	1	2	1	0
American Express AS	400	400	650	520	610	750	844	968	722	714
Diners Club Norge AS	560	584	629	669	725	816	899	900	927	893
Europay Norge AS	825	959	1176	1465	1936	2747	3,500	3,983	4,393	4,514
VISA Norge AS	3024	3340	4105	4782	6168	8042	10,326	12,805	16,132	19,638
Eufiserv				98	134	174	230	328	385	394
<i>Of which:</i>										
Cash withdrawals	:	:	:	1,244	1,752	3,845	4,528	5,806	6,286	7,129
<b>Use of non-residents' payment cards in Norway</b>	<b>2,019</b>	<b>2,398</b>	<b>3,043</b>	<b>3,073</b>	<b>3,910</b>	<b>4,750</b>	<b>5,618</b>	<b>6,661</b>	<b>7,142</b>	<b>7,850</b>
American Express	315	300	400	209	246	279	289	605	578	758
Diners Club	130	141	153	156	186	231	256	269	260	246
Europay	636	837	1,050	1,130	1,508	1,730	1,983	2,096	2,266	2,412
VISA	938	1,120	1,440	1,501	1,872	2,359	2,798	3,262	3,627	4,089
Eufiserv	:	:	:	77	98	151	293	429	411	345
<i>Of which</i>										
Non-residents' cash withdrawals in Norway	:	:	:	527	717	539	1,296	1,561	1,155	1,304

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

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>6,751</b>	<b>7,533</b>	<b>8,862</b>	<b>9,797</b>	<b>12,463</b>	<b>16,109</b>	<b>20,294</b>	<b>24,980</b>	<b>28,708</b>	<b>31,390</b>
<b>Use of Norwegian cards abroad</b>	<b>4,959</b>	<b>5,474</b>	<b>6,366</b>	<b>7,254</b>	<b>9,269</b>	<b>12,336</b>	<b>15,846</b>	<b>19,484</b>	<b>23,280</b>	<b>25,557</b>
Domestic credit cards	:	:	:	0	0	1	1	2	2	0
American Express AS	550	600	600	637	718	861	905	1,490	977	952
Diners Club Norge AS	600	611	661	708	769	892	1,033	1,038	1,135	1,095
Europay Norge AS	809	957	1,174	1,436	1,958	2,794	3,725	4,301	4,905	4,883
VISA Norge AS	3,000	3,306	3,931	4,473	5,824	7,788	10,182	12,653	16,261	18,627
<i>Of which:</i>										
Cash withdrawals	:	:	:	1,871	2,515	5,333	6,490	8,388	9,509	10,598
<b>Use of non-residents' payment cards in Norway</b>	<b>1,792</b>	<b>2,059</b>	<b>2,496</b>	<b>2,543</b>	<b>3,194</b>	<b>3,773</b>	<b>4,448</b>	<b>5,496</b>	<b>5,428</b>	<b>5,833</b>
American Express	400	400	450	420	467	513	560	1,159	594	623
Diners Club	120	117	121	122	141	170	187	201	198	186
Europay	522	646	803	860	1,196	1,387	1,615	1,694	1,928	2,078
VISA	750	896	1,122	1,141	1,390	1,703	2,086	2,442	2,708	2,946
<i>Of which</i>										
Non-residents' cash withdrawals in Norway	:	:	:	675	915	716	1,478	1,504	1,518	1,700

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

	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>1,177</b>	<b>1,101</b>	<b>1,116</b>	<b>976</b>	<b>688</b>	<b>588</b>	<b>452</b>	<b>246</b>
<b>Foreign currency cheques</b>	<b>272</b>	<b>210</b>	<b>271</b>	<b>198</b>	<b>136</b>	<b>144</b>	<b>101</b>	<b>81</b>
<b>Giros total</b>	<b>905</b>	<b>891</b>	<b>845</b>	<b>778</b>	<b>547</b>	<b>435</b>	<b>337</b>	<b>165</b>
Foreign currency giros (discontinued in 1998)	-	48	113	130	1	-	-	-
Eurogiro	905	843	732	648	546	435	337	165
<i>Of which:</i>								
Giros (account to account transactions)	541	488	419	341	287	194	135	119
Incoming and outgoing payments	364	355	313	307	259	242	202	46
<b>MoneyGrams</b>	<b>:</b>	<b>:</b>	<b>:</b>	<b>:</b>	<b>4</b>	<b>9</b>	<b>14</b>	<b>:</b>

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

	1994	1995	1996	1997	1998	1999	2000	2001
<b>Total</b>	<b>303</b>	<b>283</b>	<b>233</b>	<b>206</b>	<b>191</b>	<b>578</b>	<b>389</b>	<b>227</b>
<b>Foreign currency cheques</b>	<b>:</b>	<b>:</b>	<b>:</b>	<b>:</b>	<b>:</b>	<b>398</b>	<b>227</b>	<b>97</b>
<b>Eurogiro</b>	<b>303</b>	<b>283</b>	<b>233</b>	<b>206</b>	<b>191</b>	<b>179</b>	<b>161</b>	<b>130</b>
<i>Of which</i>								
Giros (account to account transactions)	178	174	180	136	115	102	88	68
Incoming and outgoing payments	125	109	53	70	76	77	73	62
<b>MoneyGrams</b>	<b>:</b>	<b>:</b>	<b>:</b>	<b>:</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>:</b>

F Prices in the payment system

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

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>Payment transactions</b>										
<b>Giros</b>										
<i>Electronic giro services</i>										
Phone giro	:	:	:	2.02	2.45	2.33	2.31	2.38	2.45	2.44
Internet	:	:	:	:	:	1.98	2.03	1.91	1.89	1.86
Direct debit	:	:	:	:	1.52	1.60	1.51	1.38	1.42	1.42
Unnotified remittance	0.89	0.92	0.93	1.34	1.62	1.64	1.59	2.14	2.82	2.97
Notified remittance	2.08	2.12	2.18	3.00	3.12	3.53	3.44	4.03	4.26	4.79
Remittance with customer identification	:	:	:	:	1.09	1.02	0.99	1.03	1.31	1.39
Unnotified company terminal giro	:	:	:	1.33	1.20	1.26	1.20	1.95	1.64	2.10
Notified company terminal giro	:	:	:	2.83	2.78	3.08	3.03	3.14	3.58	3.61
Company terminal giro with customer ident.	:	:	:	:	0.93	0.91	0.92	0.88	0.98	1.00
<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	5.67
Giro, account debits	9.30	9.74	9.98	10.14	12.73	13.30	15.28	16.92	18.59	25.13
Giro, cash payment	8.82	9.20	11.00	16.51	17.95	18.46	23.40	25.67	27.37	36.73
Remittance sent as a money order	8.91	9.55	10.77	13.57	22.52	23.12	25.72	27.78	30.17	32.82
Company terminal giro sent as a money order	:	:	:	13.57	22.35	23.41	25.01	26.06	30.11	32.73
Optical character recognition (OCR) - File	:	:	:	0.80	0.82	0.80	0.79	0.93	0.98	0.95
Optical character recognition (OCR) - Return	:	:	:	2.15	2.38	2.40	2.12	3.55	3.94	3.81
<b>Payment cards</b>										
Payment terminal (EFTPOS)	1.87	1.88	2.02	2.05	2.20	2.13	2.07	2.19	2.24	2.07
<b>Cheques</b>										
Personal cheques	7.73	8.24	8.40	8.50	9.79	10.72	12.30	15.00	20.07	20.71
Business cheques	8.37	8.19	9.23	9.28	9.82	10.46	12.31	15.13	22.05	23.08
<b>Cash withdrawals</b>										
<b>ATM withdrawals</b>										
Own bank's ATMs outside business hours	2.20	2.83	2.91	2.93	3.31	3.49	3.79	3.78	4.28	3.76
Other banks' ATMs during business hours	1.23	1.63	1.65	1.87	1.95	2.25	2.19	2.64	4.00	3.89
Other banks' ATMs outside business hours	3.25	3.66	3.91	4.08	4.40	4.44	4.46	4.32	4.81	4.79

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

	Paper-based		Electronic		Min. price electronic 01/01/2002	Max. price electronic 01/01/2002
	01/01/2001	01/01/2002	01/01/2001	01/01/2002		
<b>Cheques to other countries</b>						
NOK 100	140.75	144.03	123.30	144.83	10	200
NOK 2500	156.23	158.67	160.79	148.53	45	200
<b>SWIFT</b>						
<i>Ordinary transfer</i>						
NOK 100	103.82	102.66	53.10	52.46	25	60
NOK 2500	113.13	113.67	54.43	54.11	35	80
<i>Express transfer</i>						
NOK 1 000	255.75	226.18	288.27	288.29	40	425
NOK 100 000	379.17	356.57	313.64	313.02	40	540
NOK < 1 000 000	443.00	430.65	370.66	384.87	40	1655

## Guide to tables

### Background 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 owned 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), Nordea, 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 ASA, Esso Norge A/S, A/S Norske Shell, Hydro Texaco AS and Conoco Jet Norge A/S. Information about clearing and settlement has been obtained from Norges Bank, the Norwegian Central Securities Depository and the Norwegian Interbank Clearing system (NICS). The rest of the information has been obtained from Statistics Norway, the Norwegian Post and Telecommunications Authority and the Banking, Insurance and Securities Commission.

Information about the *price statistics* in Chapter 5 is based on a survey comprising 18 savings banks and nine commercial banks. The commercial and savings banks in the survey account for 91% and 76% respectively of the two bank groups' market shares measured by deposits in transaction accounts at 30.11.01. The prices obtained from the banks are standard prices in accordance with price lists as at 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, 01.01.01 and 01.01.02. 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. As from 2001, periodical fees (annual fees) in the retail market have also been included in the statistics in order to provide a more complete picture of the costs to retail customers of using payment services. However, 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 deposits in transaction accounts. 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 the ORBOF data base for bank statistics in Norges Bank and is thus based on the banks' official accounts.

### 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).

#### Giros:

*Mail giros:* These are sent directly from the payer to Postbanken/BBS for account debiting.

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

*Money orders:* Paper-based giros without the payee's account number which must be presented at a bank to receive payment.

*Internet:* E-banking services via the Internet.

*Transfers by telephone/teletanking:* Transfers from one account to another by telephone.

*Terminal payments* include direct remittance and company terminal giros. *Direct Remittance:*

A service established by BBS for transferring funds using a terminal to payees with or without a bank account. 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 Direct Remittance that have been established by someone (banks or data processing centres) other than BBS.

*Direct debits* include various agreement-based giros and various arrangements involving standing orders in DnB (Postbanken). 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:** Paper-based giros 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 returned 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:**

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

**Payment cards** are cards that may be used for payments 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 card is used to make payments from the funds available in the cardholder's account, including any overdraft facility. 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 during a certain period (e.g. the previous month). The invoice is then paid by means of another payment instrument, e.g. direct debit. The user has credit in the form of delayed payment, whereas the point of sale/payee receives settlement from the card company.

**Credit cards** are charge cards which grant a certain amount of credit to the user. This credit is repaid in instalments 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** are credit cards for domestic use that are issued by or in cooperation with DnB Kort A/S (up to 2000), GE Capital Bank and the 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 above card companies' international networks.

**Combined payment cards:** combine a bank card and a domestic credit card or a payment card from

an international credit card company, and have been established as a result of cooperation between the issuers of the individual cards (e.g. a combined bank and VISA card). 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, e.g. between banks, and for cross-border transfers.

**MoneyGram:** Network for cross-border payments. This service has been provided in Norway by DnB (Postbanken). MoneyGram was introduced by Postbanken in autumn 1997, but the service was taken over by American Express in March 2001.

**NBO:** Norges Bank's Settlement System

**NICS:** *Norwegian Interbank Clearing System.* A system for clearing and providing liquidity information that is jointly owned by the banks and operated by BBS.

**NOS:** Norwegian Futures and Options Clearing House

**VPS:** Norwegian Central Securities Depository

**VPO:** Securities settlement system.

### **Comments:**

**Tables 7 - 9. Average daily turnover in NBO and NICS:**

The 1999 figures cover the period May to December 1999. The figures for 2000 and 2001 refer to the entire year. 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. Terminals owned by VISA that only accept payment cards issued by international card companies are not included.

**Table 18. Number of payment cards:**

Through 1997, information about bank cards was unavailable from 8% of commercial banks measured by the banks' share of site deposits. Since



01.01.98, information has been unavailable from an insignificant number of banks (less than 1%).

*Tables 20 and 21. Cash withdrawals:*

*Cash withdrawals at the counter:* Commercial banks that provided information represented approximately 90% of the commercial bank market measured by sight deposits through 1999. From 2000, the information about the number of withdrawals refers to all commercial and savings banks, while the volume figures have been estimated by Norges Bank on the basis of information from a number of banks. *Cash withdrawals 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 and 2001 have in some cases been estimated by Norges Bank since data from some sources was unavailable.

*Tables 22 and 23. Use of Norwegian payment instruments; and Tables 24 and 25. Giro services:*

*Giros:* 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 01.01.1995 transactions that had been counted twice have been omitted, 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. Norges Bank has estimated some of the figures for turnover in electronic giros through 2000, including payments via terminals (closed telecommunication lines), and these figures are uncertain. The turnover figures for 2001, however, are based on registered data. *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 uncertain.

*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 26-31 refer to the

use of Norwegian payment cards in Norway and abroad. The tables also include the use of combined cards (e.g. combined bank/payment cards issued by international credit card companies). The use of combined cards is broken down according to 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 uncertain. 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 a certain extent, i.e. in less than 1% of cases, bank cards are also used in the EUFISERV network. A small number of domestic credit cards were also used abroad up to 2001 (Multikort in the CIRRUS network). 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.

Please cite Norges Bank as the source when referring to figures from this report.

