NORGES BANK

Annual Report on Payment Systems

2010

May 2011

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NORGES BANK

Norges Bank's responsibility and annual reporting

Norges Bank's responsibility in the payments area

Norges Bank is responsible for promoting robust and efficient payment systems. The Norges Bank Act states that Norges Bank shall promote an efficient payment system in Norway and vis-à-vis other countries. Norges Bank primarily does this in three ways:

- By providing secure and efficient settlement of interbank payments in banks' accounts in Norges Bank.
- By supplying banknotes and coins in a manner that promotes an efficient payment system and provides assurance against counterfeiting. This also ensures the supply of payment instruments in situations where other payment instruments are not available.
- By monitoring important trends in the payment system and examining ways to make it more robust and efficient.

The Payment Systems Act gives Norges Bank responsibility for the authorisation and supervision of systems for clearing and settlement of interbank money transfers (interbank systems). Interbank systems are to be designed and operated to support the stability of the financial system. Norges Bank monitors compliance with licence terms and may impose additional requirements to system owners if necessary.

Norges Bank's work on payment systems complements that of Finanstilsynet (Financial Supervisory Authority of Norway). Norges Bank has the primary responsibility for ensuring that interbank system operations comply with legislation and licence terms, whereas Finanstilsynet has the primary responsibility for monitoring systems for retail payment services. Therefore Finanstilsynet supervises the technical security and operational security of systems for payment services. Each year Finanstilsynet publishes an analysis of risk and vulnerability and highlights important issues in the use of ICT in the financial sector. Norges Bank and Finanstilsynet are in regular contact and share information.

Annual Report on Payment Systems

This report is published as part of the work to promote robust and efficient payment systems. The report consists of two main parts. Part 1 discusses developments in retail payment systems, while Part 2 addresses interbank systems. The two parts reflect Norges Bank's various responsibilities in the two areas:

- Part 1 analyses developments in retail payment systems and assesses whether and how they can be made more efficient. Except for work on cash payments, Norges Bank has no instruments focusing on systems for payment services other than publishing analyses and giving advice.
- Part 2 reflects Norges Bank's tasks and instruments for monitoring and overseeing interbank systems and other financial infrastructure. This work focuses on security and impacts on financial stability. Part 2 provides an account of oversight activities and security assessments, which makes it an important supplement to the Financial Stability report.

Norges Bank hopes that the report will be useful for other government authorities, owners and operators of payment systems, financial institutions and their industry organisations, enterprises, the media, academia and students of economics. To contribute to empirical knowledge on payments and payment systems, statistics are being made available in machine-readable format.

International evaluation of the annual report

In 2010 Norges Bank asked an international panel of experts to assess the report of 2009 and provide recommendations for possible improvements. Their report is available on the Norges Bank website, and many of the recommendations in the report have been followed up here.

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Oslo 2011

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Editorial

Swifter payment settlement

In 2010 the number of daily interbank net settlements in Norway increased from two to three. More daily settlements allow for more efficient use of liquidity for all activities in the country. All parties to processes where large sums of money change hands ought to take the opportunity to develop better products. Norges Bank endorses banks' plans to further enhance the efficiency of settlement systems ahead. The Bank hopes that other participants will make use of the opportunities now available for further reducing the costs of transferring funds.

The efficiency of payments and accounting in the business and government sectors can also be improved by better utilisation of electronic data interchange. The government's requirement for electronic invoicing to be adopted by government agencies by 1 July 2012 and by the rest of the public sector by 1 July 2013 will contribute to realising this potential.

Banks should bolster their cost coverage for cash services by raising fees and operating more efficiently. This approach is preferable to reducing the availability of cash to customers. Today Norges Bank supplies banks with cash, while banks are responsible for distribution to the public. This arrangement will continue.

The financial crisis was a wake-up call for market participants and governments in many countries. It also revealed the importance of robust systems for the ability of financial markets and financial institutions to function in periods of stress. International efforts aimed at secure and efficient infrastructure for financial settlement have now reached the stage where new standards and rules are being adopted. A committee under the Bank for International Settlements (BIS) has circulated for comment drafts of new international recommendations aimed at ensuring the efficiency and security of the financial infrastructure. The proposals from the BIS are not likely to present Norwegian participants with particular challenges. The EU is working on a number of proposals to regulate institutions and activities with the aim of harmonizing and tightening rules for the entire EEA. These efforts may improve the security of clearing and settlement systems worldwide.

Øystein Olsen

26 May 2011

1. Systems for payment services

Efficient payments are essential to a well functioning economy. It should be possible to execute payments swiftly, securely and at low cost. Measured by these criteria, Norwegian payment services compare well internationally. Collaboration takes advantage of economies of scale, while developing the core infrastructure. There are now several daily interbank settlements, expediting payments and reducing liquidity costs. Given that there have been few system disruptions, there is reason on the whole to be satisfied with the payment system in Norway.

Payment methods differ considerably with regard to cost. Costs to society can be reduced by increasing the use of the least expensive services and by making better use of automation. Some examples:

- Electronic data interchange (EDI) systems can be used to improve the efficiency of payments and accounting in Norwegian enterprises. There is a considerable potential here for efficiency gains. In Norges Bank's view, the government's requirement for electronic invoicing to be adopted by government agencies by 1 July 2012 and by the rest of the public sector by 1 July 2013 will contribute to realising this potential.

- Cash services are priced too low. Rather than reducing the scope of cash services, banks should bolster their cost coverage by raising fees and operating more efficiently. Norges Bank would argue that cost-based pricing, together with competition among service providers, will result in a correct level of the use of cash and other payment instruments in terms of the economy as a whole.

- The considerable difference in costs payees (retail outlets) incur to accept payments depends on the solution the customers choose (cash, various payment cards). The fear of losing customers is one reason few payees exercise the right they have to charge payers for costs incurred. Norges Bank points out that payees that price the acceptance of payments in accordance with the specific costs payees incur help to make the economy as a whole more efficient.[1]

[1] This is discussed in Norges Bank (2010c) and by Nilssen (2011).

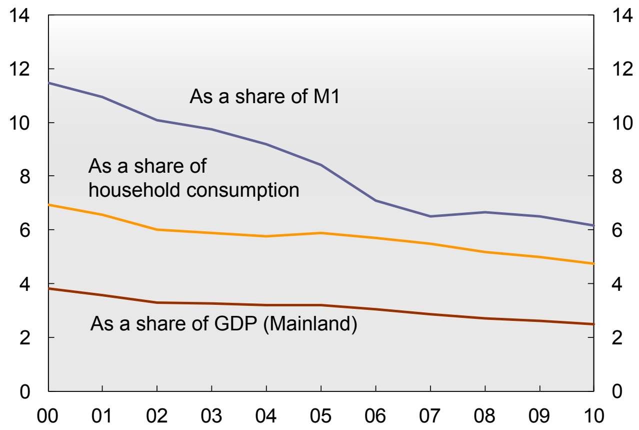
Secure and stable IT operations are an important task for participants in the payment system. Many new electronic services involve lengthy automated processes between payers and payees. This increases complexity and the risk of errors that result in delays or in payments not being made. At the same time, most people expect round-the-clock availability of payment services. System owners are the ones responsible for ensuring that users are provided with secure and efficient solutions. It is important for the public and for providers to be aware of the situation and challenges regarding security. This will increase the chances that good solutions will succeed in the market. An important contribution in this regard is Finanstilsynet's analyses of risk and vulnerability. The card problems in April 2011 revealed faulty technical routines among important participants in the systems, at the same time as there were shortcomings in their procedures for correcting errors that already had arisen. Neither the original problem nor the ensuing error would have occurred, if each of the participants had met its obligation to provide robust systems with reliable backup solutions at all times.

The level of payment fraud is low in Norway compared with other countries, but the risk environment is constantly changing. Thus, banks are constantly facing challenges related to providing adequate security. New payment solutions cannot become popular unless users feel confident about using them. That is why advances in efficiency must always go hand in hand with adequate security.

Compared with other countries, payments are executed swiftly in Norway. Expectations about how swiftly a payment can be executed are rising and require further improvements in the payment system. As from 2010 a third daily interbank settlement for retail payments was introduced. Three daily settlements expedite payments, make liquidity utilisation more efficient and facilitate competition.

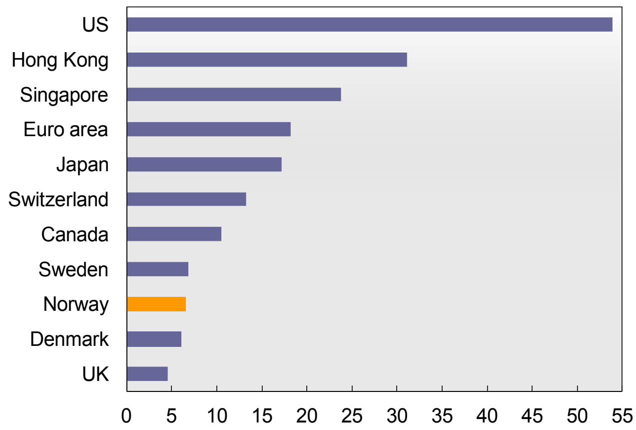
This change is in part a consequence of new Norwegian and international regulations and market developments. The participation of banks in Norway in the work on common European payment solutions is a welcome development elsewhere. As a result, the solutions for pay-

Chart 1.1 Value of cash in circulation as a share of means of payment (M1), houshold consumption and mainland GDP. Per cent. 2000–2010



Source: Statistics Norway and Norges Bank

Chart 1.2 Cash as a share of means of payment (M1) in selected countries. Per cent. 2009



Sources: Norges Bank, ECB and BIS/CPSS Red Book

ments in euros available to Norwegian business and retail customers are as efficient as those available to their competitors in other countries.

In recent decades, three trends have boosted the efficiency and security of payment services in Norway:

- Online banking, which arrived in the 1990s and has supplanted paper-based giros.
- Card payment has largely replaced checks and cash.
- The transition to payment cards with an embedded microchip, which is nearly completed.

Going forward, increased use of electronic communication for payments between businesses may also prove to yield substantial gains for the economy as a whole.

1.1 Use of cash

Demand for cash is determined by users, who use cash to the extent that meets their needs. One reason to use cash is that final settlement can be made without access to electronic devices. For that reason cash also has a role as a payment instrument when other societal functions are out of operation.

It is important for the choice of payment instrument to be made on the proper basis, which requires that the use and withdrawal of cash is priced correctly. The price ought to reflect the costs banks and others incur for ensuring that cash is available to the public. This will result in a more efficient economy.

Norges Bank's role and activities in the area of cash handling are discussed in detail in Eklund, Nygård and Veggum (2010). The division of labour in the area of cash handling, where Norges Bank supplies banks with cash and banks then distribute cash to the public, will continue.

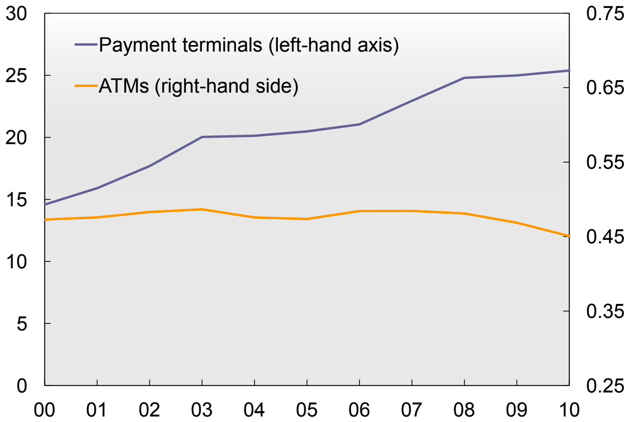
Statistics show a continued reduction in cash in circulation as a share of means of payment (M1). At end-2010, the share of cash was 6.2%, down from 6.5% the previous year (see Chart 1.1).

The share of means of payment that cash represents is lower in Norway than in most other countries (see Chart 1.2).

Users can obtain cash at bank branches, from ATMs and at many point-of-sale terminals. Over the past decades, the number of traditional bank branches has fallen. In 2010 banks had 1 157 outlets[2], a decline of 300 since the

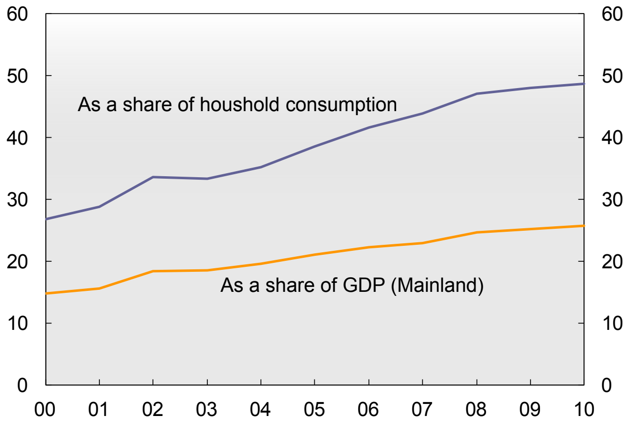
[2] Finance Norway (FNO) is the source for the number of outlets. Some outlets do not accept payments or offer withdrawals of cash.

Chart 1.3 Number of payment terminals at merchants and number of ATMs. Per thousand inhabitants. 2000–2010



Source: Norges Bank

Chart 1.4 Value of goods purchases using payment cards. As a share of houshold consumption and mainland GDP. Per cent. 2000–2010



Source: Norges Bank

year 2000. The number of ATMs has changed little in the past decade and was highest at end-2008. The number of withdrawals from ATMs was highest in 2001 and has declined by 24% since the peak. At the same time, the number of point-of-sale terminals where customers can withdraw cash has increased. The number of withdrawals at point-of-sale outlets is also decreasing.

The reduction in cash's share of means of payment and decline in withdrawals from ATMs and point-of-sale outlets suggest that the use of cash for payments is falling.[3]

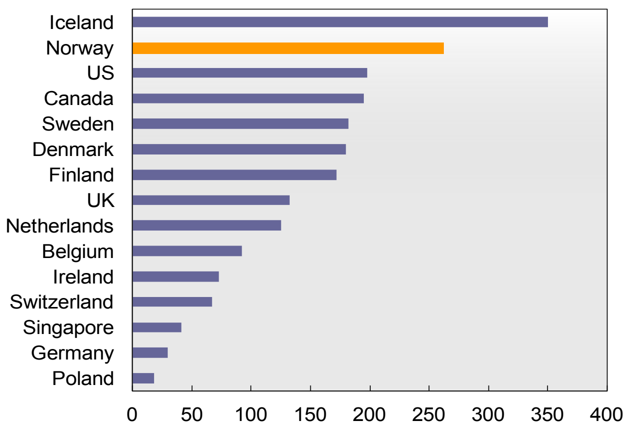
At end-2010, 123 500 point-of-sale terminals were located at 97 700 different sites, that is, in shops and on the premises of other payees.[4] The market may soon be nearing saturation, since the increase in the number of installed terminals has been moderate in the past few years (see Chart 1.3).

1.2 Card payments

In 2010, an average of 3.2m card payments were made every day in Norway. The increase since last year is over 8% and well over 50% over the past five years. As a result, the value of card payments corresponds to nearly half of total private consumption in Norway (see Chart 1.4).

In 2010, cards issued in Norway were used for 1.37bn payments and cash withdrawals. This is an increase of 9% on the previous year. Every inhabitant used payment cards an average of 281 times in Norway or abroad. An international comparison in 2009 places Norway among the world leaders in card use (see Chart 1.5). Judging by the increase in Norwegian card use in 2010 it is likely that this holds true also in 2010.

Chart 1.5 Number of card transactions per inhabitant. 2009



Sources: Norges Bank, ECB, BIS/CPSS Red Book and the Central Bank of Iceland

3 Gresvik and Haare (2008) found that around 25% of payments were made in cash in 2007. This figure is uncertain, and different calculation methods may yield different results. The total costs connected with cash use mostly depend on distribution costs, which are affected to a limited extend by the number of cash transactions.

4 In addition to these are terminals in taxis, at some hotels, etc., that do not accept BankAxept cards. These terminals are not included in the statistics.

How does BankAxept work?

Card payments can be made by debit card, charge card or credit card:

- With a debit card, the amount is debited from the payer's account when the card is used.
- With a charge card, users receive a monthly bill, payable in full, for purchases made.
- With a credit card, users can draw on a line of credit to a specified limit. Users must pay all or part by the due date, with interest calculated on credit utilised in accordance with the card's rules.

In Norway and in most European countries, most card payments are made by debit card. For example, debit cards are used for between 73% and 93% of card payments in Belgium, Denmark, Sweden, the Netherlands and the UK. In Norway, BankAxept is the domestic system for card transactions. Eight out of ten card payments in Norway are made using a BankAxept card. The vast majority of these payments are categorised as debit card transactions. Most BankAxept cards also have an alternative payment solution. Nevertheless, BankAxept is the default option in most POS terminals unless the user actively selects a different payment solution.

BankAxept interconnects participating banks' systems, enabling users to pay by card in stores. The system of agreements for BankAxept is administered by Finance Norway. Security standards are set by the Banks' Standardisation Office (BSK).

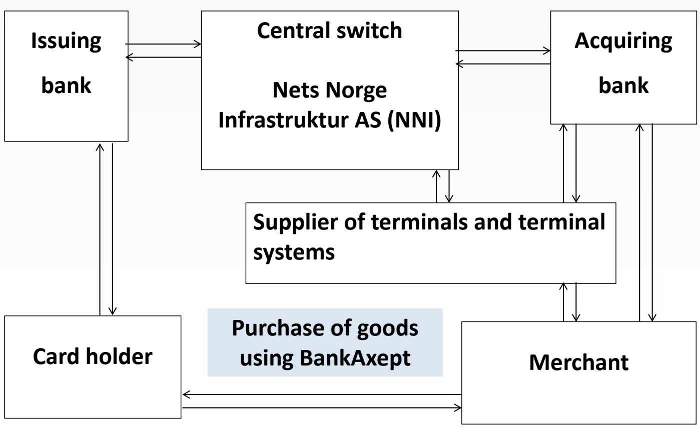
Agreements and fees

To accept payments using BankAxept, the retailer (merchant) must have an agreement with a bank to acquire card transactions. Acquiring involves crediting the merchant account for all payments made by BankAxept on POS terminals over a period. Terminals that the retailer needs can either be rented or purchased from banks or other suppliers. Payers need to have concluded an agreement with a bank to link a BankAxept card to their accounts.

Ordinarily, both payers and merchants pay for the use of these services. The consumer pays an annual fee for each card and a fee for each transaction (the fee may be zero). The merchant pays a fee for the terminals, a fee for each transaction completed and a fee for each settlement. The transaction fee does not depend on whether cash is withdrawn from the POS terminal or not. Settlement fees can depend on the number of terminals, merchants, logical terminals[1] or a combination. Some banks have set one or more of these fees at zero, for payers as well as merchants. This applies especially to fees for each transaction.[2]

What happens when a payment is made?

When the customer uses the card, card data are recorded in the POS terminal. The customer is requested to enter a PIN code, which generates a request to authorise payment. The request is transmitted to a central payment switch,[3] which verifies whether the correct PIN code was entered and whether the transaction can be processed and comes from a genuine terminal on the premises of a real merchant. The central switch forwards the authorisation request to the issuing (cardholder) bank (see diagram).



[1] More than one merchant can use the same physical terminal. Each merchant is then assigned his own logical terminal. This may be the case when several small retailers in a shopping centre share a terminal.

[2] The market for payment cards is an example of a two-sided market, which provides incentives to different pricing behaviour from ordinary one-sided markets. Such markets are discussed in Norges Bank (2008) and by Vale (2010).

[3] Banks have concluded service agreements for all BankAxept transactions to be routed through a central switch supplied by Nets Norge Infrastruktur AS (NNI). NNI is a subsidiary of Nets (formerly BBS).

The issuing bank verifies whether the conditions for authorising the transaction are satisfied: that the card has not been blocked and that there are sufficient funds available to cover the transaction. The issuing bank sends a reply (yes or no) back to the central switch, which then forwards the information to the merchant terminal, where the result appears on the display. All this normally takes place in under half a second.

NNI then compiles transaction data (transaction amounts), which are transmitted to NICS[4] for interbank clearing and settlement. Clearing and settlement of these transactions take place three times every weekday, and a hold in the authorised amount is placed on the payer's account until settlement to prevent the amount from being utilised again. After settlement, NICS transmits these transaction data to the acquiring bank (merchant bank) for crediting to the merchant's account and to the issuing bank for debiting the payer's account.

[4] NICS: Norwegian Interbank Clearing System.

Banks in Norway jointly operate a Norwegian card system, BankAxept (see box on page 8). BankAxept is the predominant card system in Norway (see Chart 1.6). BankAxept's share of the total use of Norwegian cards fell by one percentage point over the past year.

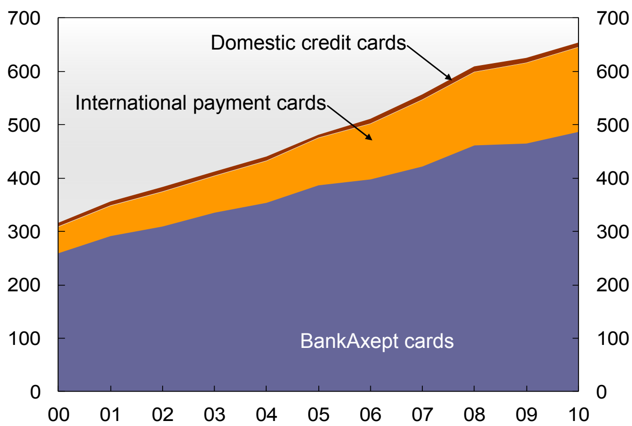
While the total use of cards issued in Norway increased by 9% from 2009 to 2010, the use of Norwegian cards outside Norway increased by 20%. Use abroad is now 7½% of the total use of Norwegian cards.

At end-2010, 12.1m payment cards had been issued in Norway, an increase of just over 4% on the previous year. Many cards have more than one payment function, i.e. a single card can provide access to more than one card system. For example, BankAxept and VISA are often combined in a single card. On cards like these it is BankAxept that is most often used in Norway. Abroad it is VISA that is used most, since BankAxept can only be used in some places where Norwegians frequently shop (for example, in Strömstad in Sweden).

1.3 Credit transfers and direct debits

A total of 372m online banking payments were made in 2010, an increase of over 6% on the previous year. This is 66% of all credit transfers and direct debits. The number of paper-based giros from companies and private individuals fell by 25% from 2009 and 2010 and now account for close to 4½% of credit transfers and direct debits.

Chart 1.6 Use of payment cards. NOK billions. 2000–2010



Source: Norges Bank

Direct debits (mostly AvtaleGiro) increased by nearly 11% compared to the previous year, yet account for barely 12% of all credit transfers and direct debits. In order to make direct debit payments (AvtaleGiro), both the payee and the payer must have an agreement with their bank. The remainder of the overall market, around 17%, includes payments from company terminals, electronic standing orders and cash payments.

At end-2010, 12 600 businesses all together had nearly 12m direct debit agreements with customers. This was an increase in the number of businesses and agreements of 6% and 11%, respectively, over 2009.

B2C, G2C, B2B and B2G[1] e-invoicing

The market for eFaktura (e-invoicing) today[1]

Approximately 500m bills and invoices are issued each year in Norway. Of these, 55 % are sent to retail customers or private citizens (B2C and G2C) and 45 % to business customers (B2B). Around 10 % of the bills to retail customers were sent as e-invoices from businesses and government agencies. These markets are experiencing strong growth.

B2G (business to government)

There will be solid growth in the B2G market ahead. On 8 June 2010 the Ministry of Finance amended its "Bestemmelser for økonomistyring i staten" (Regulations for government financial management) to require e-invoicing to and from government agencies. Government agencies (including health authorities and health trusts) were granted a transition period of just over one year to 1 July 2011, when the agencies are to be capable of receiving standard format e-invoices. The same transition period also applies to putting in place e-invoicing systems.

The Government's ambition is to establish a legal requirement from summer 2012 for suppliers to government agencies to invoice electronically. The Government stated previously that a dedicated web portal would be set up for suppliers without their own electronic solutions (see Government 2009). Another aim is for the same system to apply to local governments and other public administration from 1 July 2013.

Electronic procurement systems, especially use of eFaktura, are expected to result in substantial cost saving in the public sector. Savings from using eFaktura in government agencies including health authorities and health trusts have been estimated at more than NOK 1.1bn over the ten-year period 2009-2018. A similar estimate will be made of the potential saving in the local government sector.

B2B (business to business)

So far, volumes in the business market are low and customers are few. Bill payment between businesses largely takes place electronically today (by using business online banking and company terminal giro), while payees still ordinarily send a physical invoice to the payer. Thus, the payee incurs printing costs and postage, while the payer incurs higher costs than necessary for verification, authorisation, archiving, etc. A fully electronic solution will therefore reduce costs for payees and payers alike.

In Norway a network of major banks[2] has established a common solution eFaktura B2B. Network banks are cooperating to help customers by ensuring that issuers and recipients of e-invoices benefit fully from the technology. The infrastructure companies Nets and EDB ErgoGroup are important network partners.

Nets's partner programme manages and contracts with providers of accounting and technical systems for handling eFaktura B2B for the business market. The aim of the programme is to upgrade these providers' systems to make them compatible with banks' invoicing solutions. Providers may also request support and advice.

The core of the banks' solution is the transfer of file data that is tailored to businesses that send or receive invoices. A business with a solution from a system provider connected to the partner programme can receive e-invoices from other businesses with an e-invoicing agreement with their banks. No technical adaptations to each individual partner provider are necessary. All that is required are technical arrangements with the bank. The setup also includes some automatic short-term storage, a flexible feature with support for various file formats.

Business receiving a low volume of invoices that they wish to receive electronically may have them sent directly to their online bank. The solution is called "click and pay". The invoice is "opened" on the screen, the recipient needs to verify and, if necessary, change and approve the invoice before it is set for automatic payment by the online banking program. The issuer business must have an agreement for this with its bank.

[1] B2C – Business to consumers, G2C – Government to consumers, B2B – Business to business, B2G – Business to government.

[2] The network was formed in 2008, and its current members are the banks DnB NOR, Fokus Bank, Handelsbanken, Nordea, SEB, Sparebanken Møre, Sparebanken Vest, Sparebanken Sogn og Fjordane, Swedbank and the Terra and SpareBank1 bank alliances.

For businesses sending out a low volume of invoices there is an online banking invoicing solution (WEB faktura). The e-invoice is created in the invoice issuer's online banking solution. It is either sent as an electronic invoice to customers with agreements with their bank to receive invoices electronically or as a paper invoice to customers that cannot receive eFaktura invoices via the bank network. This solution can be used by small and medium-sized businesses without their own billing system.

It will be possible to send and receive e-invoices regardless of bank, format or system provider. The same format can also be used to send e-invoices to retail customers. The vendor extracts the necessary data from its accounting system and forwards it in the agreed format. This can be done directly or via an intermediary. The advantage of using an intermediary is that the company is thus able to deal with a single addressee rather than send data to each recipient. If the invoice recipient is also connected to an eFaktura solution, the invoice data will trigger a payment on the basis of the uploaded invoice data.

For billers, the solution means fewer manual work operations and lower costs for printing out and enclosing invoices for mailing, postage, etc. Invoice recipients' manual processing and verification of invoices will be reduced. Sorting, recording and scanning of invoices will be eliminated, and payments can be approved without manual routines.

The industry and various consultancies have presented estimates of how much payees and payers will save from a complete changeover to fully electronic invoicing (see Lind 2010). The estimates are highly uncertain, though all indicate that very substantial sums will be saved by replacing partly paper-based solutions with fully electronic solutions. Costs connected with outgoing invoices are largely variable, whereas costs connected with incoming invoices are largely fixed labour costs. For that reason, savings will be realised faster with outgoing invoices.

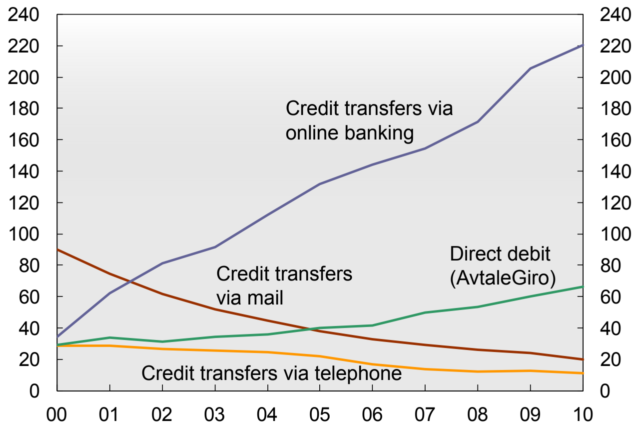
Bills and invoices can either be sent on paper via postal services or directly to the online bank as e-invoices. The number of agreements for e-invoicing increased sharply in 2010. Approximately 770 enterprises can now send e-invoices to retail customers. Around 29m e-invoices were issued in 2010, compared with around 24m the previous year. In 2010 e-invoices were used for over 13% of payments from retail customers using online banking or AvtaleGiro.

Costs may be reduced if more invoices are issued electronically. There is considerable potential especially in business-to-business and business-to-government payments (see box on page 10).

Chart 1.7 shows payment services that retail customers use to pay bills etc. Finance Norway's survey of retail bank[5] use shows limited growth in the use of online banking by age groups below age 50 after 2009, but the use of online banking by older age groups showed a clear increase in 2010 and 2011.

[5] The Norwegian Savings Banks' Association online banking survey is continued by Finance Norway under the name "Dagligbankundersøkelsen" [Retail bank survey] (see http://www.fno.no/no/hoved/aktuelt/sporreundersokelser/dagligbankundersokelsen/dagligbankundersokelsen-2011/).

Chart 1.7 Credit and direct debit transfers (retail customers). Millions of transactions. 2000–2010



Source: Norges Bank

1.4 Charges for and income from payment services

Charges

Banks charge for a number of card payment services. These charges differ for cardholders in and outside so-called customer loyalty schemes. In loyalty schemes, cardholders are given discounts for using particular accounts or services or for paying a fixed annual fee. For these cardholders, the average change for goods purchases using BankAxept is now less than NOK 0.10 for loyalty scheme cardholders, and approximately NOK 1.60 for non-loyalty scheme cardholders.

An annual fee is also often charged for payment cards. The average annual fee in Norway for BankAxept cards combined with the international debit card VISA is approximately NOK 245 for non-loyalty scheme cardholders and approximately NOK 190 for loyalty scheme cardholders.

The cost level for bill payment varies considerably between different types of services (see Gresvik and Haare 2009). The cost of electronic services such as direct debit (AvtaleGiro), e-invoices and online banking is considerably lower than for paper-based services. This is reflected in the fees banks charge for these services. For example, an online banking transaction for retail customers costs approximately NOK 0.30, whereas a giro payment over the counter costs around NOK 40. Norges Bank (2009) shows to what extent fees reflect the costs banks incur in providing various payment services.

Tables 21 and 22 at the end of the *Report* provide an overview of payment services fees charged to retail and business customers.

Income

In 2010, banks received around NOK 6bn in income from payment services. Over half was from payment cards (see Chart 1.8). Banks' income from payment services has been fairly stable in recent years.

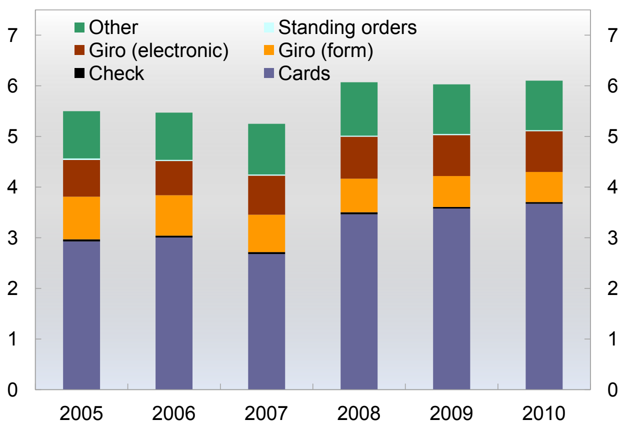
The increased prevalence of payment cards has boosted income from payment cards over the past three years, compared with the previous years. From 2005 to 2010, the number of goods purchases using BankAxept rose by 420m transactions, while the value of goods purchases using BankAxept cards rose by around NOK 100bn. Gresvik and Haare (2009) showed that in 2007, banks' income from payment services covered around 70% of the banks' costs for producing these services.

1.5 Security

Cash

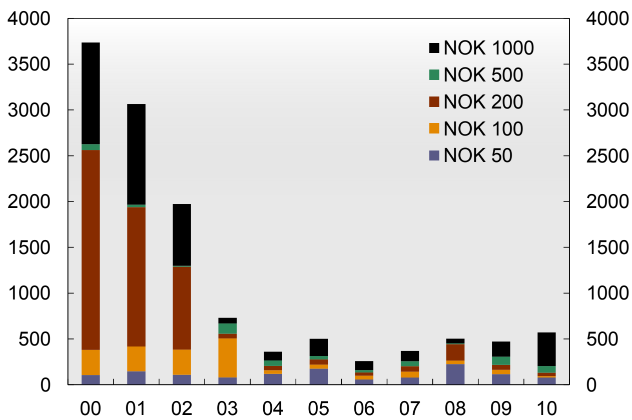
Counterfeiting is a problem for central banks in many countries. In Norway, the number of seized counterfeit notes remains low (see Chart 1.9). There has been an in-

Chart 1.8 Banks' income from payment services. Billions of NOK. 2005–2010



Source: Norges Bank

Chart 1.9 Number of seized counterfeit notes. 2000–2010



Source: Kripos

crease in the number of seized counterfeit 1000-krone notes. The quality of these notes in Norges Bank's view is so poor that notes produced in the same manner are easy to recognise. The number of counterfeit notes discovered relative to the number of notes in circulation in Norway is lower than 10% of corresponding figures for the euro area.

Online banking and cards

There have been few successful attempts at online banking fraud, but the number of threats has risen. These include several of what are known as "Trojan horse" attacks[6]. This type of crime often takes novel forms. To date, losses have been limited.

BankID and BankAxess have been established to make point-of-sale and online payments secure. See the related boxes on this page.

Finanstilsynet[7] points out that attacks on ATMs now use a different technology from that used in the mid-2000s. ATM attacks are a risk area that Finanstilsynet will monitor especially closely in 2011.

Over NOK 66.5m in losses connected with use of payment cards was registered in Norway in the second half of 2010. Finance Norway reported NOK 200m in losses for 2010. This figure, like historical figures, are a combination of reported and estimated losses. The figures suggest a declining trend. A joint effort between Finanstilsynet and Finance Norway is aimed at presenting correct figures. A new template for reporting losses has been prepared. It has been used from the second half of 2010 and will yield more accurate data going forward.

Norwegian payment cards with embedded mircochips and chip-enabled terminals began to appear in 2009. The changeover to chip cards continues. The purpose of chip cards is to reduce the risk that payment card data are copied onto a counterfeit card. The industry aims to phase out cards that only feature a magnetic stripe by end-2011.

6 "Trojan horses" (or "Trojans") are a kind malware that installs itself on personal computers. Trojans are used by criminals to obtain access to the computer owner's identity and passwords.

7 The discussion of online banking and card security is based on figures and assessments from Finanstilsynet (2011).

BankID

BankID is a system for personal electronic identification and signature on the Internet. BankID is most often used for logging onto and signing in on online banking services. BankID can also be used with payment card companies and insurance companies for online purchases and to access some public services on the Internet.[1]

BankID is provided and issued by banks in Norway. By end-2010, 2.7m BankID certificates had been issued to 2.4m persons. According to Finance Norway's retail bank survey, 77% of users of online banking services have BankID. BankID was used an average of 900 000 times each day in 2010, an increase of 50 000 times per day over the previous year.

Mobile BankID was launched in March 2009. This is a type of BankID where the security features are stored in the mobile phone SIM card. Users with Mobile BankID can log onto online banking services without a Digipass.

1 To date the Agency for Public Management and eGovernment (Difi) has not made provisions for the use of BankID in the public ID portal.

BankAxess

BankAxess is an e-commerce payment service issued by banks in Norway. Users paying by BankAxess identify themselves and authorise payment using BankID that is issued by the user's bank. Banks and customers can agree on further terms and conditions for BankAxess, such as a payment limit, holds for purchase amounts, notification of insufficient funds, etc. At end-2010, approximately 1.2m consumers had a BankAxess agreement.

The seller, too, must have BankID in order for the buyer to use BankAxess. At year-end, around 300 merchants had BankID, of which 120 offered payment using BankAxess. In 2010, approximately 137 000 payments were made using BankAxess totalling NOK 240m, an increase from around 44 000 payments totalling NOK 66m in 2009. Finance Norway expects further growth in the number of BankAxess users and payments. BankAxess for mobile phones will probably be launched sometime in 2011.

Around half of the cards that only had a magnetic stripe at the beginning of 2010 had been withdrawn from use in the course of the year. This change has made card use more secure. All terminals in the BankAxept system shall be chip-enabled by no later than 1 December 2011.

Not all countries have introduced chip-enabled terminals and ATMs. For that reason, magnetic stripes may be retained on cards longer than desirable for the domestic payment instrument.

Outsourcing

Another aspect of security concerns deliveries from service providers. Outsourcing or offshoring tasks may pose challenges.

State-of-the-art IT solutions are an essential part of modern payment systems. They involve substantial fixed operating and development costs. External parties that offer services to several institutions can achieve greater volumes than individual institutions and thus lower unit costs. For that reason, financial institutions have increasingly opted to purchase IT solutions from external service providers.

Outsourcing tasks changes the risk picture, but system owners (often banks) are responsible for verifying that outsourced services are delivered as specified. Supervisory authorities monitor operational stability and the way system owners' organise operations and risk management. Supervisory efforts are made more difficult, and risks in operations may be elevated, if operations are offshored. This applies especially to outsourcing to providers and other companies based in countries with low standards of business ethics or where corruption or political turmoil can threaten the stability of deliveries.

Government authorities therefore set conditions for purchases of services from such countries. In circulars, guidelines have been issued for the kind of risk assessments banks and other service providers included in the Norwegian payment system ought to conduct when outsourcing ICT services (see Finanstilynet 2010a). The guidelines recommend against outsourcing to countries with a high risk of corruption. Decisions made by Norwegian government authorities shall be implemented in the same manner as if the activity were taking place in Norway.

1.6 New payment services

In recent years, several new payment solutions have appeared. Most banks in Norway now provide mobile banking services using SMS messaging. Customers can transfer funds between accounts and make account balance enquiries by sending an SMS message to the bank. Some banks also allow customers to use SMS messaging to transfer funds to a predefined group of payees. It is also possible to log on to online banking services via mobile Internet to pay bills and transfer funds. Some banks are also jointly developing cashless payment solutions with telecom operators that use what is called near-field communication (NFC). An NFC-compatible mobile device can be held near an NFC point-of-sale (POS) terminal, and the agreed amount is then debited from the owner's account.

There are also efforts to develop contactless payment cards. They will work in a manner similar to mobile-device payments, but payment cards will be held up in front of the terminal. During the testing phase, VISA has set a limit for non-PIN transactions to NOK 175. Customers will thus not have to enter a PIN code for payments under NOK 175. After a certain number of transactions, or once the total exceeds a limit set by the bank that issued the card, a PIN code will be required. When the code is approved, the total is cleared. The customer can then spend up to the limit before the PIN code needs to be re-entered. Contactless payments have already been launched in Europe and the US. In Norway, SpareBank1 SMN is working on a test version, which went into service in Trondheim in early 2011.

The impression to date is that contactless payments are most widely used in countries where debit card use is relatively uncommon or where card payments take longer than they normally do in Norway.

Informal systems for money transfer (hawala)

Immigration to Europe from Africa and Asia has resulted in a large market for private remittances from immigrants to family in their country of origin. Many payees live in countries with rudimentary banking systems, and they themselves are not customers of banks, so that funds cannot be transferred between accounts. To date, the market for remittances where at least the last step in the value transfer takes place outside a bank has not been regulated at European level. The Payment Services Directive sets standards for regulating such activities within the EEA.

The informal value transfer systems that are used are often called hawala systems. These systems enable users to remit money to family members or other recipients living in parts of the world that lack a well functioning banking system. Hawala remittances make an important contribution to the local economy in many poor countries. Globally, registered remittances from immigrants and their descendants to family in developing countries totalled more than USD 340bn (see Ratha and Mohapatra 2008), more than twice the amount of all official development aid combined. There are no exact figures for the amount of remittances from Norway. Up until 2011 hawala systems operated in Norway without a licence from Finanstilsynet. The market for remittances has not been very transparent, and the costs connected with money transfer can be high.

In 2010, the Financial Institutions Act was amended to legalise informal value transfer systems. The new Chapter 4b of the Act contains rules for parties that can provide payment services, and Section 4b-3 also permits payment institutions that may offer only a limited volume of money transfers. The Ministry of Finance (2011) has stated that during a transition period until 1 July 2011, there will be relaxed enforcement of the general requirement for persons responsible for managing or engaging in such activity to have previous experience in operating payment systems. This is being done in order to bring hawala activities into compliance with the law. Hawala operators will then be granted licences valid for two years, after which they must apply for renewal in order to continue. At the end of March 2011, two applications have been granted.

In autumn 2010, Finansportalen[1] launched "Sending money home". The service compares fees from a number of different providers and shows users how to transfer money as inexpensively as possible. The service uses only information from lawful remittance services and assists consumers in ensuring that as much money as possible reaches the payee. "Sending money home" was developed by Finansportalen on the initiative of the Government, and is funded by the Ministry of Foreign Affairs and the Ministry of Children, Equality and Social Inclusion. Similar web portals have been developed in other European countries. This will better facilitate price comparison.

[1] Finansportalen.no is a web service provided by the Consumer Council of Norway. The portal is a tool which enables consumers to compare the different products and prices offered by the financial services industry.

1.7 Single Euro Payments Area

In Europe, the Single Euro Payments Area (SEPA) project is an important effort to develop payment instruments for making retail euro payments domestically and throughout the euro area as well as the EEA and Switzerland. Within SEPA, all euro payments will be treated as domestic payments, and the current distinction between national and cross-border payments will cease.[8]

[8] The development of SEPA and the requirements for a single payments area were previously discussed in Haare (2008), Grønvik (2010) and in Norges Bank (2010c).

SEPA has detailed rules for the design of the payment instruments *SEPA direct debit* and *SEPA credit transfer* to allow for fully electronic transactions. Moreover, there is a set of rules that ensures that payment cards may be used throughout SEPA.

Direct debit is a payment initiated by the payee, while a credit transfer is a payment initiated by the payer. The SEPA direct debit product was launched in November 2009, while SEPA credit transfer was launched in January 2008. Despite the fact that most payment services providers in the market can process SEPA transactions, and the eagerness of banks and government authorities for a changeover to SEPA products, the use of SEPA products has remained modest to date. It is the costs that purchasers of payment system services will incur in changing over from one system to another that is the primary obstacle. They each have little to gain from changing the solution that they already have and that works for them.

In October 2010, the European Central Bank (ECB) issued a new progress report on SEPA, which showed that around 10% of credit transfers and 1% of direct debits were made using SEPA solutions in autumn 2010. The remaining volume was made using domestic solutions. To increase use the ECB is encouraging large customers, such as businesses and government authorities, to utilise SEPA solutions. The report also points out that deadlines for final implementation of SEPA solutions are necessary for increasing the use of these solutions. The recommended final date for credit transfers in the ECB progress report is end-2012, while the final implementation of direct debits is recommended by end-2013.

The European Commission (2010b) recommends that the final date for using domestic credit transfer solutions be set at 12 months after the regulation enters into force, while domestic solutions for direct debits must be phased out after 24 months. As the European Parliament and member states through the Council have previously requested a draft decision on this matter, a final decision is likely be made in 2011.

2. Interbank systems etc.

When individuals and businesses make electronic payments, the banks involved must see to it that the funds are transferred from bank to bank. In the course of a day, many transactions need to be settled, the total value of which can be high. A well functioning payment system makes it possible to transfer funds securely and at the agreed time. This is essential for public confidence in deposit money. A failure in the payment system can have far-reaching consequences. The system can become incapable of relaying payments for the buying and selling of goods and services.

Likewise, interbank funds transfers in connection with foreign exchange transactions or securities trades must also be secure and efficient.

The largest interbank transfers involve short-term interbank money market transactions. This market provides for the efficient use of money for payments and lending.

All of these interbank transfers take place in interbank systems, that is, systems for clearing transactions and/or transferring funds between banks. Interbank systems are the core of the financial infrastructure.

It is important for financial stability that interbank systems function as intended at all times. Even brief disruptions can prevent substantial sums from reaching the recipient in a timely manner. Losses arising from an interbank system failure can be more serious for society than for payment system participants. If the system is designed and operated only in the interest of system participants, insufficient weight may be given to reliability and security in the design. In most advanced economies this problem is solved by charging central banks with the responsibility for monitoring interbank systems. Norwegian interbank systems and their interlinkages are discussed in a separate box on page 18.

Pursuant to the Norges Bank Act and the Payment Systems Act, Norges Bank is responsible for supervising important interbank systems and for monitoring the payment systems as a whole. The principles for this work and activities in this area in 2010 are discussed in Section 2.1.

Section 2.2 discusses developments in interbank systems in Norway in 2010. Two important elements were a change in operating schedules in order to expedite settlement and mergers between IT providers to banks and interbank systems.

Section 2.3 discusses trends in the settlement systems for securities and foreign exchange trading that Norges Bank oversees.

Section 2.4 deals with new international trends, such as revision of the international standard for regulation and oversight of the entire financial infrastructure, the development of a new multicurrency securities settlement system in Europe and new EEA regulations.

On the basis of this review, Norwegian clearing and settlement systems compare well internationally. The primary reason is that they comply with internationally formulated standards for best practice for security. System owners also closely monitor international developments and are engaged in an ongoing effort to ensure that Norwegian systems will be efficient and follow developments in international best practice.

2.1 Norges Bank's oversight and regulation of financial infrastructure

Norges Bank's responsibility for promoting robust and efficient payment and settlement systems is enshrined in law. In this work Norges Bank relies primarily on international recommendations. The key recommendations concerning interbank systems are the ten core principles in the CPSS[9] (2001). The requirements in the Norwegian Payment

[9] CPSS stands for Committee on Payment and Settlement Systems. The committee has been established as part of central bank collaboration at the BIS. The committee has a long-standing working relationship with securities regulators through the International Organisation of Securities Commissions (IOSCO).

Interbank systems in Norway

An interbank system is based on common rules for clearing, settlement or transfer of money between credit institutions. Norges Bank is the ultimate settlement bank in Norway (see Chart 1). The Bank receives cleared payments from NICS (Norwegian Interbank Clearing System) and the securities settlement system (VPO), and individual payments submitted by Norwegian banks via NICS and CLS (Continuous Linked Settlement).

NICS processes gross and net settlements. All large payments (over NOK 25m) and some specially marked transactions are submitted for gross settlement. These transactions are settled individually at Norges Bank as soon as possible (in real time).

Smaller payments, for example card and giro payments, are cleared by netting a number of individual transactions, so that each bank ends up with one single debt or claim against the other participant banks. Clearing is performed by NICS. Transactions received by NICS are submitted to the settlement systems of DnB NOR, Sparebank 1 SMN and NBO (Norges Bank's settlement system). In the settlement banks, money is transferred between participant banks' accounts so that banks' positions are settled. This is called net settlement.

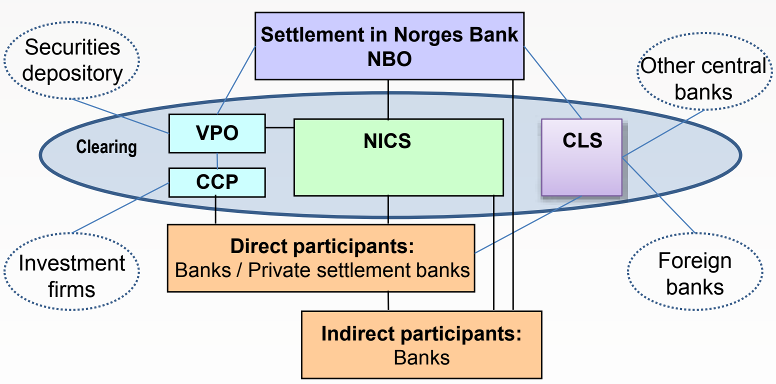
Most large banks and the private settlement banks participate directly in net settlement at Norges Bank. For banks participating via a private settlement bank, the latter settles the positions in NBO on behalf of the banks. Banks using a private settlement bank may also choose to send gross transactions directly to NBO.

Banks can cover their debt positions in the settlement by drawing on deposits or by raising intraday loans (D-loans) against collateral in Norges Bank. Banks participating via a private settlement bank can draw down lines of credit at this bank.

Payment for trades in equities, equity capital instruments, short-term paper and bonds are settled in the securities settlement system (VPO). The settlement of trades in equities and equity capital instruments are first reported to Oslo Clearing, currently the only central counterparty[1] for trading in equity capital instruments at Oslo Børs. Oslo Clearing submits cleared cash and security positions to the Norwegian Central Securities Depository (VPS). With regard to trades in bonds and short-term paper, each trade is sent directly from investment firms to the VPS. The VPS then calculates a securities position and a cash position (i.e. the cash or securities each participant owes or is owed). Securities are then settled in the VPS, while the cash positions are sent for settlement to NBO. The two systems jointly secure Delivery versus Payment (DvP).

Banks' cash positions from derivatives trading through central counterparties are settled in Norges Bank

Chart 1 Interbank systems in Norway[1]



[1] The chart has been simplified for reasons of clarity

Source: Norges Bank

[1] In the chart, the abbreviation CCP stands for central counterparty.

or a private settlement bank. The central counterparty clears the cash positions of the parties and the participating banks and sends the result to Norges Bank or the private settlement bank. The central counterparty then concludes the trade with each of the two parties.

There are three central counterparties to derivatives trades in Norway: Oslo Clearing ASA (equity capital instruments as the underlying asset), Nasdaq OMX Oslo NUF (formerly Nord Pool Clearing ASA) (energy prices) and NOS Clearing ASA (freight rates, salmon contracts and energy contracts). Cash positions from Oslo Clearing are settled in Norges Bank, while positions from the other two are settled in private banks.

Foreign exchange trading in NOK is largely settled in the CLS settlement bank. Both sides of a foreign exchange trade are settled at full value in both currencies in the CLS accounts. The CLS has previously calculated the net liquidity requirement of each participant in all the currencies. Payments to and from the CLS in NOK are made directly from and to NBO. The settlement participant ensures that the net amount notified is sent in, either directly or via a correspondent bank. Banks in Norway that participate in the CLS system and are correspondent banks for other banks that do not have branches in Norway may thereby have to send NOK to the CLS on behalf of customers (other banks) and receive NOK payments from the CLS to their own accounts and to those of customers on one and the same day.

Systems Act are based on these CPSS recommendations. Norges Bank has also benefited from recommendations on securities settlement systems and central counterparties in CPSS/IOSCO (2001 and 2004), which were subsequently clarified and tightened in ESCB-CESR (2009).[10]

These core principles provide guidelines for managing legal, financial and operational risk and for making systems optimally efficient, transparent and well managed. CPSS/IOSCO has now circulated a draft of new core principles for comment (see section 2.4.1).

In accordance with current principles Norges Bank oversees all interbank and securities settlement systems in Norway. As oversight body, Norges Bank may request, but not demand, information about or changes to systems. Norges Bank is in contact with market participants and publishes analyses and assessments. Norges Bank seeks among other things to communicate the core principles. This contact provides Norges Bank with information about the systems and enables the Bank to point out any need for changes.

[10] The European System of Central Banks (ESCB) comprises all EU central banks. The Committee of European Securities Regulators (CESR) comprises all EU securities regulators and functions as the European part of IOSCO. The CESR was reorganised as the ESMA in 2010 (see footnote 17).

2.1.1 Work on interbank systems

Norges Bank supervises licensed interbank systems. There are two such systems, the Norwegian Interbank Clearing System (NICS) and DnB NOR's activities as a private settlement bank. Supervision takes the form of regular meetings with the responsible operator and regular reporting required by Norges Bank. All major disruptions must be reported immediately, and two months' notice must be given of any substantial changes. In addition, Norges Bank has formulated detailed content requirements for system annual reports. The industry also has an independent responsibility for ensuring that systems are robust. In addition, Norges Bank's settlement system (NBO) is subject to oversight.

In 2010 there were two formal supervisory meetings with each regulated system and two oversight meetings concerning NBO. The systems' routines for following up operational disruptions are a regular agenda item. As discussed in detail in Section 2.2.6, the Nets Group was formed in 2010, and Nets Norge Infrastruktur (NNI) is a major service provider for NICS. Norges Bank examined the agreement between NICS Operations Office and the new operations centre for any noncompliance with licence terms or the Payment Systems Act. There was also a changeover to a new technology platform and changes in operating schedules and rules at NICS. Norges Bank approved the changes after assessing operational risk, efficiency, licence terms and relevant legislation.

At the meetings Norges Bank is also informed of planned changes. For example, in 2011–2012 Norges Bank will have to decide on routines for a system of bilateral caps for banks with settlement in a private settlement bank.

At meetings concerning NBO a proposal was discussed for risk-reducing changes in the settlement of the payments banks make on behalf of the central government via NICS. The proposal is for these payments to be settled directly against the central government's account at Norges Bank rather than against banks' accounts. This will eliminate the risk that banks will not have cover for payments on behalf of the central government via clearing in NICS. At the same time this will eliminate government credit risk exposure to banks for incoming government payments. The work on finding such a solution is viewed as useful. Implementation of the proposal requires a decision by banking industry bodies.

2.1.2 Work on other financial infrastructure

Other financial infrastructure subject to oversight is the securities settlement system (VPO), central counterparties operating in Norway, the foreign exchange settlement system CLS and SWIFT, the worldwide financial messaging system. Norges Bank's contributions in this work have often taken the form of helping market participants to have a common perspective on ways of solving problems or making improvements.

In 2009 Norges Bank commented favourably on the establishment of a central counterparty to transactions in equity capital instruments, and until the system opened, there was contact with VPS and Oslo Clearing on various matters related to it. In letters from Finanstilsynet and Norges Bank (2010) VPS was requested to assess its system according to ESCB-CESR criteria. Norges Bank also had contact with VPS on the proposals by the VPS working group (2009).

Norges Bank also attended oversight meetings discussing settlement of foreign exchange transactions via CLS.

2.2 Interbank systems in Norway

In 2010 the most important operational changes in interbank systems took place in NICS.

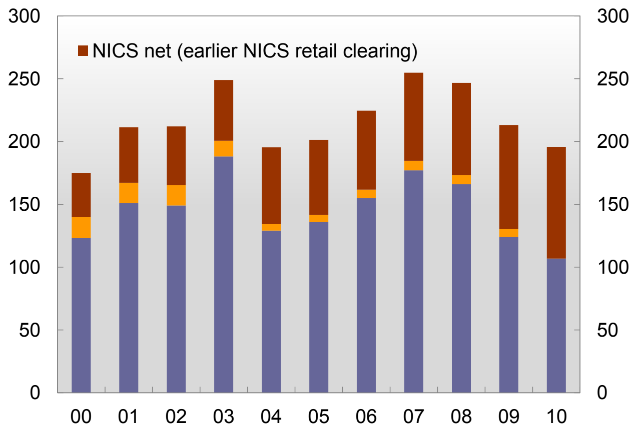
2.2.1 Norwegian Interbank Clearing System (NICS)

Almost all payment transactions are sent to NICS before being relayed to Norges Bank for settlement in NBO. These transactions may either be submitted individually to NBO for final settlement (NICS gross) or they may be cleared multilaterally. In this case, banks net positions are settled together (NICS net). Average daily turnover in NICS was just under NOK 200bn in 2010. This is somewhat lower than in 2009 (see Chart 2.1).

At end-2010, there were 142 banks participating in NICS and participating in the daily clearings (net settlements). In settlements of clearings there is a distinction between the 21 banks whose positions are settled directly in NBO (First-tier banks) and the others, whose positions are settled via a private settlement bank (Second-tier banks).

NICS has undergone substantial system changes in recent years. From 4 June 2010, the separate net clearings of SWIFT transactions were eliminated. Here, medium-sized interbank payments were cleared before net positions were submitted together for settlement. A new daily net settle-

Chart 2.1 Daily turnover in NICS. NOK billions. 2000–2010



Source: NICS Operations Office

ment for retail transactions was introduced on 24 September 2010, after which there have been three daily NICS net clearings that are sent to Norges Bank for settlement:

- Settlement of morning clearings is as before at 5.45 am.
- A new clearing is now sent to Norges Bank for settlement at 1.45 pm.
- Settlement of the final clearing in the afternoon is now one hour later, at 3.45 pm.[11]

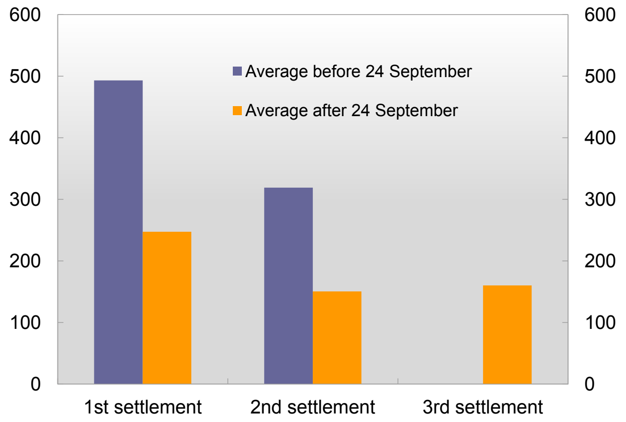
From the same date, a general value limit was introduced for transactions that always are to go to gross settlement in NBO. Transactions greater than NOK 25m are now sent gross, regardless of who sends the message and how the message is sent in to the system. This limit previously applied only to transactions submitted to NICS through SWIFT. Banks may also set lower limits for transactions to be sent gross. There are therefore fewer large payments in the retail clearing, and nearly always lower settlement positions for participants than prior to 24 September 2010. This reduces the risk that an NICS net clearing will fail (see Chart 2.2).

There were 10 disruptions in operations in NICS in 2010. This is unchanged from 2009 and fewer than in 2008. Most of the disruptions were minor (see Chart 2.3).

NICS is subject to a licensing requirement and supervision pursuant to the Payment Systems Act. As licensing body, Norges Bank dealt with a change notification concerning a merger in the company that operates NICS. In connection with this, NICS worked in particular to ensure robust operating agreements. The merger is discussed in detail in section 2.2.6. Norges Bank made a number of comments concerning the case, which were taken into account.

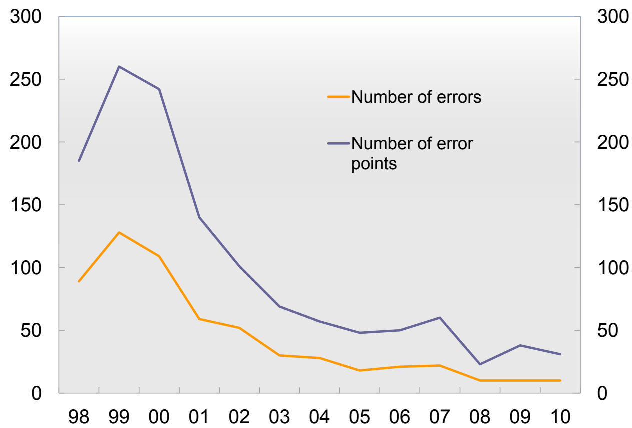
Norges Bank has previously assessed NICS in accordance with international principles and concluded that the risk in the system is at a satisfactory level (see Norges Bank 2007 and 2008). This conclusion stands also after taking recent years' changes to the system into consideration

Chart 2.2 Banks' average settlement positions in NICS. Before and after the introduction of a third daily net settlement. NOK millions



Source: Norges Bank

Chart 2.3 Disruptions of NICS operations. Annual number of errors and error points.[1] 1998–2010



[1] The calculation of error points is based on a measure used by NICS Operations Office to indicate the seriousness of the individual disruption. The higher the number of error points, the more serious the disruption.

Source: NICS Operations Office

2.2.2 Norges Bank's settlement system (NBO)

The changes in NICS resulted in two operating schedule changes for NBO during 2010. These proceeded without operational disruptions in NBO.

[11] More information is provided in Norges Bank (2010a).

The current NBO system went live on 17 April 2009. Except for a single disruption in May 2009, availability in the new system has been 100% (see Chart 2.4). Availability of NBO online[12] was 99.94% in 2010.

Average daily turnover in NBO was reduced from NOK 187bn in 2009 to NOK 176bn in 2010 (see Chart 2.5). Also in other central banks, turnover in the settlement system declined following the financial crisis. High turnover during financial turbulence may have several causes. Shorter maturities and more hedging transactions connected with substantial exchange rate fluctuations may prompt an increase in turnover in settlement systems.

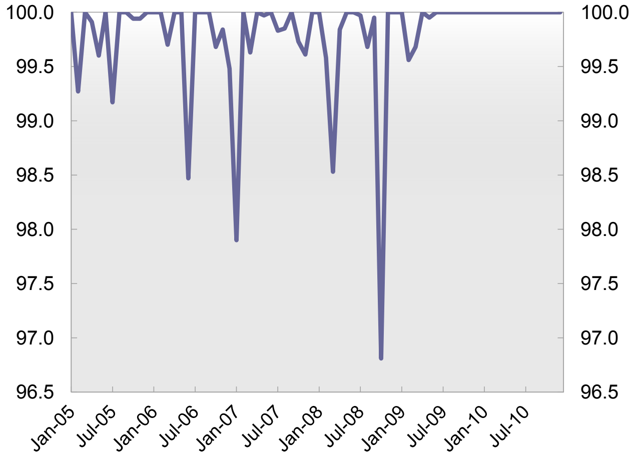
Chart 2.5 shows that gross transactions account for most of the turnover in NBO. Banks with accounts in NBO can send gross transactions either directly to NBO or via NICS. Banks primarily opt to send their gross transactions to NICS, which subsequently relays them to NBO for net settlement. Of the gross transactions sent directly to NBO, the vast majority are payments to and from the foreign exchange settlement system CLS. CLS is discussed in detail in section 2.3.2.

Execution of transactions in NBO requires that the payer bank has access to liquidity in its account at NBO, either in the form of sight deposits or an unutilised borrowing facility (see Chart 2.6). There was ample available liquidity in NBO for settlement purposes in 2010, as well as in the previous year. There were few transactions that were not settled because of a lack of liquidity at the payer bank.

To improve banks' liquidity situation during the banking crisis, an arrangement was established that enabled banks to swap covered bonds (OMF) for Treasury bills. The large payments related to rollovers in this swap arrangement prompted an amendment to the Norges Bank Act to allow the Bank to provide short-term intraday liquidity to the central government (see box on page 23).

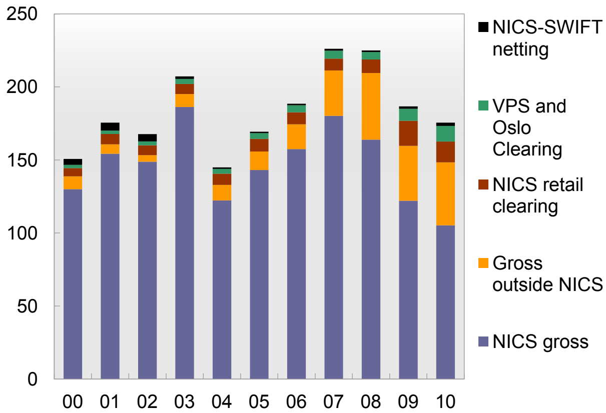
[12] NBO online provides banks with real-time information on balances, liquidity and any transactions in a queue.

Chart 2.4 Availability in NBO during opening hours. Monthly result. Per cent. 2005–2010



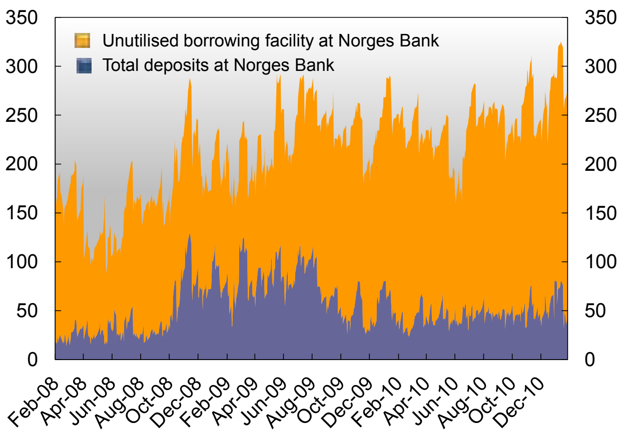
Source: Norges Bank

Chart 2.5 Daily turnover in NBO by settlement. NOK billions. 2000–2010



Source: Norges Bank

Chart 2.6 Banks' total deposits and unutilised borrowing facility at Norges Bank (end of day). NOK billions. 1 Feb. 2008–27 Jan. 2011



Source: Norges Bank

Prohibition on extension of credit by Norges Bank to the government – a clarification

In December 2010, the Storting (Norwegian parliament) adopted a clarification of Section 18 of the Norges Bank Act specifying that the prohibition on the extension of credit by Norges Bank to the government shall not impede the Bank's extension of credit to the government with a maturity within a calendar day. This clarification was viewed as useful in connection with the swap arrangement[1] where Treasury bills can be borrowed in exchange for covered bonds. As large amounts are transferred on rollover days, measures have been implemented to prevent disturbances in the payment system. The amendment to the Norges Bank Act, which entered into force on 1 January 2011, is an additional security measure for use in exceptional circumstances in the event the balance on the government's account at Norges Bank is insufficient to cover the government's payment obligations.

The government always holds some liquid reserves in its account at Norges Bank to cover daily payments. Outgoing government payments are primarily carried out by banks under contract with the government. The banks receive funds from the government after the outgoing payments have been executed. Many outgoing payments, including payments on rollover dates for Treasury bills, are carried out through the settlement of the clearing from the Norwegian Interbank Clearing system (NICS). Each bank must have sufficient funds in its account at Norges Bank for the net positions to be settled.

When Treasury bills in the swap arrangement mature, the amounts due will be credited the investor's bank account on the maturity date, normally by 5.45 pm. The government's bank[2] advances the amount due for payment on behalf of the government and receives the amount from the government's account at Norges Bank shortly thereafter. The payments are so large that the Ministry of Finance provides the bank with an advance if they exceed NOK 30bn. The advance is made from the government's sight deposit account to the bank's account at Norges Bank and will normally be available from 5.30 pm until the bank receives settlement for the claim on the government at approximately 6.00 pm on the maturity date.

Banks taking part in the swap arrangement are normally required to purchase Treasury bills in the same amount as the bills that mature on the same day. Payment to the government for new Treasury bills is made via the securities settlement system (VPO), normally with settlement at Norges Bank at 6:05 pm. Total net payment from the government in the swap arrangement will thus be relatively small on these days. Owing to the time difference between settlement in Norges Bank of payment through NICS and receipt of payment through the VPO, the government may have insufficient funds in its Norges Bank account to cover outgoing payments from banks before incoming payments have been credited the account.

Such a situation could lead to delays in payment settlement, with serious consequences for the payment system. The question has therefore been raised whether Norges Bank could permit the government to overdraw its account for a short time without breaching the prohibition laid down in Section 18 of the Norges Bank Act. The statutory amendment[3] makes it clear that Norges Bank may extend such credit within one calendar day as a security measure in exceptional circumstances.

Section 18. Extension of credit to the government
The Bank may not extend credit directly to the government. *The first sentence shall not impede the Bank's extension of credit to the government with a maturity within a calendar day.*

[1] The swap arrangement was established in autumn 2008 to improve banking sector liquidity and access to funding. More information on the swap arrangement on Norges Bank's website: http://www.norges-bank.no/en/price-stability/swap-arrangement/

[2] DnB NOR Bank ASA provides banking services for the government upon maturity of government debt.

[3] The amendment is in italics. The recommendation of the Standing Committee on Finance and Economic Affairs can be found in Stortinget (2010).

There are considerable differences in banks' available liquidity relative to need (see Chart 2.7). Nevertheless, all banks appear to have adjusted in a manner that ensures execution of settlements in NBO, with little risk of a liquidity shortage.

Another risk-mitigating element in the interaction between banks is to send gross payments well in advance of closing time. This allows for more time to obtain sufficient liquidity. Following the financial crisis banks have generally sent payments somewhat later in the day than they did prior to the crisis (see Chart 2.8). However, in terms of value the share sent after 2.00 pm remains low. Around 60% of transactions by value are sent between 12.00 noon and 2.00 pm (see Chart 2.9).

Norges Bank has announced changes to the system for the management of bank reserves in order to enhance the distribution of interbank liquidity. This is unlikely to have a significant impact on payment settlement (see box on page 25).

2.2.3 DnB NOR as a private settlement bank

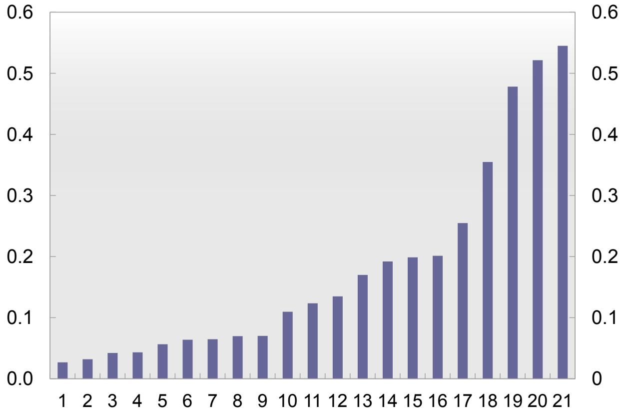
DnB NOR is the largest private settlement bank in Norway. At end-2010 103 small and medium-sized banks participated in DnB NOR's settlement system.

As a settlement bank, DnB NOR settles participant banks' transactions, which are cleared net in NICS three times daily. Moreover, individual payment transactions are settled that are submitted gross by participant banks (or that are withdrawn from the NICS net clearing on account of the size of the amount).

Participant banks' positions in NICS's net clearings are included in DnB NOR's position in NBO. In its settlement DnB NOR guarantees the positions of the underlying banks. The settlement result for the individual participant bank is then recorded in that bank's settlement account with DnB NOR.

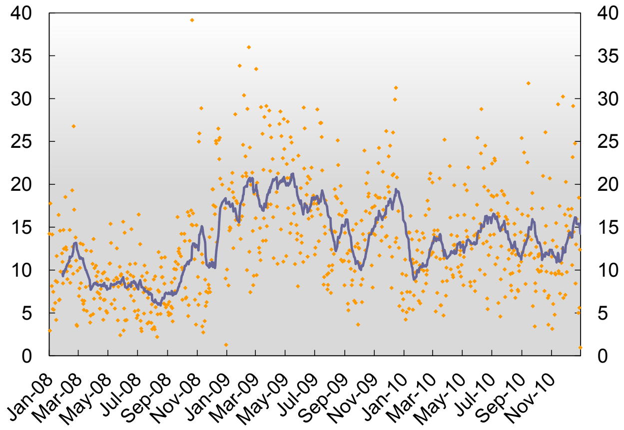
Participant banks are not required to have cover for their positions in the form of deposits at DnB NOR or any form of collateral. Participant banks are granted lines of credit by DnB NOR. At end-2010 the total credit limit for

Chart 2.7 Liquidity ratio. Individual banks' maximum liquidity needs in NBO during a day divided by the bank's available liquidity in NBO. Normal order of transactions. Average for the 21 banks with net settlement in NBO. 2010



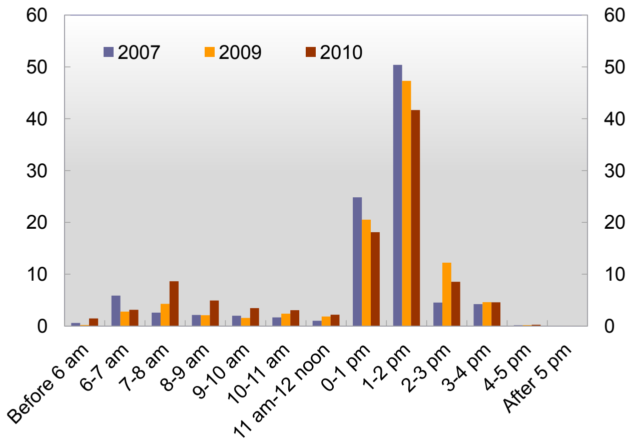
Source: Norges Bank

Chart 2.8 Payments made after 2.00 pm in NBO. Per cent of value. Daily observations and 20-day moving average (line). 2008–2010



Source: Norges Bank

Chart 2.9 Value of transactions during time intervals. Share of daily total. Gross transactions in NBO



Source: Norges Bank

New system for the management of bank reserves – implications for payment settlements

Norges Bank will introduce a new system for the management of bank liquidity in autumn 2011 (see Norges Bank, 2010b). Under the new system, a quota of banks' deposits in Norges Bank will bear interest at the key rate. Deposits in excess of this quota will bear interest at a lower rate, the reserve rate.

Banks are divided into three groups. The groups are generally the same as those used for pricing services in Norges Bank's settlement system, NBO. The same quota will apply to all the banks in a group. The sum of the quotas will be determined by Norges Bank. Norges Bank will not normally offer more reserves to the banking system than the sum of the quotas. Details of the total bank quota and the proposed size of banks' total reserves in Norges Bank will be published before summer 2011.

In order to determine whether the new system will influence payment settlements, Norges Bank has carried out simulations on historical transaction and liquidity data from NBO from all settlement days in the period from 1 September 2009 to 31 August 2010. In the simulations, the order of transactions was the same as that registered in NBO. Varying amounts were entered in banks' sight deposit accounts at the start of each settlement day. Various assumptions as to the total quota and the supply of reserves to the banking system were applied.

To execute payments in NBO, banks must have sufficient intraday liquidity. A bank's intraday liquidity is the sum of its sight deposits and unused borrowing facilities in Norges Bank.

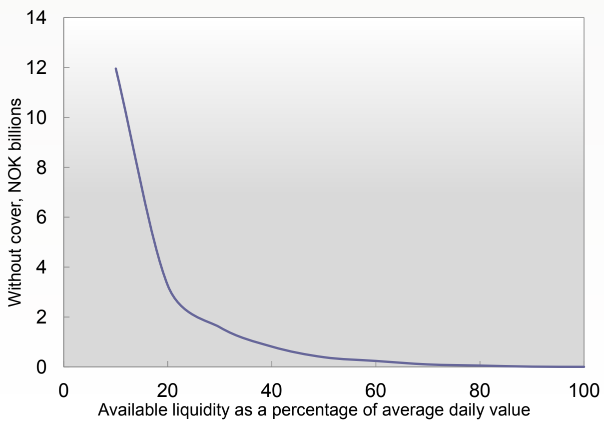
Banks' current intraday liquidity in NBO is more than adequate because banks pledge ample securities as collateral. All the settlements are therefore executed smoothly in normal situations. Submitted transactions for which there is insufficient cover, are stopped. Chart 1 shows simulated values of transactions without cover (y-axis) at the end of the day at different levels of intraday liquidity (x-axis).

Sight deposits currently account for about 20% of banks' total intraday liquidity. If the sum of the quotas were to be set lower than the currrent sight deposit level, lower F-loans from Norges Bank would reduce banks' need to pledge securities as collateral. If banks reduce collateral in pace with the reduction in F-loans, available intraday liquidity for settlement purposes would be reduced to between 80% and 100% of the current average value, depending on the final size of the quotas. As shown in Chart 1, this is not likely to result in a higher number of transactions with insufficient cover at the end of the day.

Banks already pledge far more collateral than necessary to raise F-loans. In addition, available intraday liquidity for settlement purposes is for most banks higher than the maximum liquidity requirement. This is partly because banks seek to minimise the risk of settlement delays. The level of collateral pledged may therefore be determined by factors other than the level of F-loan borrowing.

If the level of securities pledged by banks as collateral for loans in Norges Bank remains unchanged, a reduction in F-loans will result in a corresponding increase in unused borrowing facilities, which could be used for settlement purposes. The new system would then not affect intraday liquidity or the execution of payment settlements.

Chart 1 Transactions without cover at different levels of intraday liquidity in NBO. Average daily value



all participants was just over NOK 9bn. The corresponding figure for 2009 was NOK 8.4bn.

Besides adjustments to the changes in NICS, no extensive technical or systemic modifications were made to DnB NOR's settlement system in the course of 2010. The settlement system was stable in 2010. DnB NOR reported one disruption, which was not classified as serious.

As part of its supervisory work, Norges Bank assessed DnB NOR's system in relation to international principles, and concluded at that time that the risk in the system was at a satisfactory level (see Norges Bank 2007 and 2008). The system has remained broadly unchanged in recent years, and the conclusion still stands.

2.2.4 Small settlement systems

SpareBank 1 SMN is the settlement bank for 13 small and medium-sized banks. This system is exempt from the licensing requirement because it is assumed to have no significant effect on financial stability in Norway.

Norges Bank thus does not supervise this system, but there is an annual oversight meeting on the basis of an annual report.

2.2.5 Consequences of additional daily settlement

The introduction of a third clearing in NICS and the shift of the final clearing to a later time have expedited interbank funds transfers. Norges Bank also anticipates that banks will enable customers to enjoy faster funds transfers than is the case today. This means that some payments that previously were executed the next working day arrive the same day.

Improvements for customers will take place automatically, but may also follow from changes in routines outside the banking sector, for example in connection with home purchases. Real estate agents usually request that the purchase amount be transferred to the agent's client account on the date prior to settlement or taking possession of the dwelling. Since banks normally do not guarantee execution of a payment order received on a given day until the end of the following business day, people are also often urged to transfer purchase amounts earlier than the day prior to settlement (see FNO 2009). It is not certain that such early transfers of money for house purchases are necessary now that interbank funds transfers are swifter.

It is also possible that the new banks' solutions can be used to reduce settlement times for purchases of units in securities funds. The requirement in Section 6-9 of the Act relating to securities funds that "[r]edemption shall be effected as soon as possible and no later than two weeks after the demand for redemption was presented to the management company" will have to be interpreted in accordance with what is practicable at the time in question. Here the access to securities and price risk must be considered.

There is also work on new changes that may further speed up the execution of payment orders. Banks are discussing the introduction of a fourth daily retail net settlement and shifting the final settlement to an even later time.

2.2.6 Mergers among important IT providers

Merger created EDB ErgoGroup

Operation and management of settlement and central banking systems at Norges Bank has been outsourced to ErgoGroup AS since 2003. In October 2010, ErgoGroup AS merged with EDB BusinessPartner ASA, which provides IT services to DnB NOR and the SpareBank 1 Group, among others. The provisional name of the merged company is EDB ErgoGroup AS.

Following the merger, the company became Norway's largest IT company and the second largest provider of IT services in the Nordic region. The Norwegian Competition Authority reviewed the case in September 2010 and decided not to intervene. Moreover, Finanstilsynet had no comments on the merger.

The result of the merger is that many major participants in the Norwegian financial industry are now dependent on the same provider. This entails a concentration risk. An error on the part of a single provider may affect a large portion of the financial industry. At the same time the merger is likely to improve the organisation's technical expertise, potentially making service deliveries more robust in the event of staffing changes.

Nordito founded and merged with PBS to form Nets

Towards the end of 2009 the infrastructure company BBS (Bankenes Betalingssentral) merged with the card processing company Teller to form Nordito.

The Norwegian Competition Authority was notified of the plans for this merger in 2007, and concluded that the merger could weaken competition in the market for acquiring international payment cards. For that reason the authority set a condition whereby access to necessary BBS infrastructure would be guaranteed for competitors in the markets for acquiring cards and payment terminals. Since Teller and BBS provide systems for payment services, an application was submitted to the Ministry of Finance. After obtaining the views of Finanstilsynet, the ministry approved the merger on certain conditions in December 2007.

Right after the merger was fully implemented, Nordito applied to the Ministry of Finance to merge its operations with the Danish company PBS Holding. PBS Holding's activities are very similar to those of Nordito in Norway. The head office and group management of the new company Nets is in Denmark.

The purpose of the merger to form Nets was to grow in order to meet growing international competition. There have been other cross-border mergers in recent years to streamline electronic processing of payment transactions. For example, the Swedish company Bankgirot has outsourced its operations to the UK company Vocalink. Economies of scale can lower unit costs in processing.

Nordito was the operator of the clearing system NICS and also provided a number of services to the Norwegian payment system, such as services for bill processing and information services.

As licensing body for NICS, Norges Bank received a change notification in early 2010 concerning the Nets merger from the system owner NICS Operations Office. Norges Bank assessed the notification on the basis of the Payment Systems Act and the licence terms. In a letter to NICS Operations Office, Norges Bank required that the merger should not impact adversely the quality and reliability of NICS. For that reason, Norges Bank requested a review of all agreements with relevance for NICS that had been concluded between NICS Operations Office and BBS Infrastruktur AS with regard to ownership of/licences for software being utilised. If such agreements had been signed, Norges Bank requested that they be put in place. Norges Bank requested that the contractual parties draw up service provision agreements. Moreover, Norges Bank expressed the view that it was important that NICS's contractual party be placed at a high level in the merged company, to ensure that the service delivery had the necessary priority in the organisation. This is because of the key function NICS has for Norwegian banks' infrastructure and for financial stability. Finanstilsynet's views largely coincided with those of Norges Bank.

On 12 April 2010 the Ministry of Finance approved the merger between Nordito and PBS Holding on the following conditions (see Ministry of Finance 2010a):

1) "The merged company shall ensure that agreements exist for the delivery of services within the shared operational infrastructure among the companies in the merged corporate group and banks subject to supervision by Finanstilsynet insofar as such banks choose group companies as operator.

2) The merged company shall ensure that agreements referred to in clause 1 contain descriptions of delivery, liability and user rights for delivery of services within the shared operational infrastructure.

3) The merged company shall notify Finanstilsynet of any changes in operations of significance to risk, management and oversight of the financial infrastructure and execution of payment transactions for banks subject to Finanstilsynet supervision. Such notice shall be given two months before any such change is to be made as planned.

4) The Ministry of Finance and Finanstilsynet shall, upon request, be given access to product financial statements referred to in condition 2 of the Norwegian Competition Authority's decision of 4 July 2007 (V2007-17).

5) Within one year after the merger the parties shall submit documentation to Finanstilsynet that conditions 1 and 2 have been met, and Finanstilsynet must confirm that these conditions have been met.

A condition for the permission is fulfilment of the terms in Norges Bank's letter to NICS Operations Office of 8 February 2010 (see Section 2-6 second paragraph of the Payment Systems Act)."

The subsidiary Nets Norge Infrastruktur AS (NNI) shall be responsible for deliveries to NICS. The draft of a new agreement between NICS Operations Office and NNI on operating NICS was submitted to Norges Bank in a change notification in December 2010. Norges Bank had some comments on the draft agreement. Norges Bank's comments were taken into account in the final agreement, which was signed on 16 March 2011.

2.3 Settlement systems for securities and foreign exchange transactions

2.3.1 Securities settlement in Norway

The Norwegian Central Securities Depository (VPS) clears payments for trades in shares, equity capital instruments, notes and bonds. The number of executed daily securities transactions on Oslo Børs rose in 2010 to an average of around 75m (see Chart 2.10[13]). Almost all transactions – 99.9% – involved equities and other equity capital instruments. The daily value of trading declined, and was approximately NOK 26bn per day in 2010. Equities and other equity capital instruments accounted for around 27% of trades in terms of value, while fixed income securities including repurchase agreements accounted for around 73%.[14]

[13] Note that the chart shows trading on Oslo Børs. In addition, VPO will include reported over-the-counter trades.

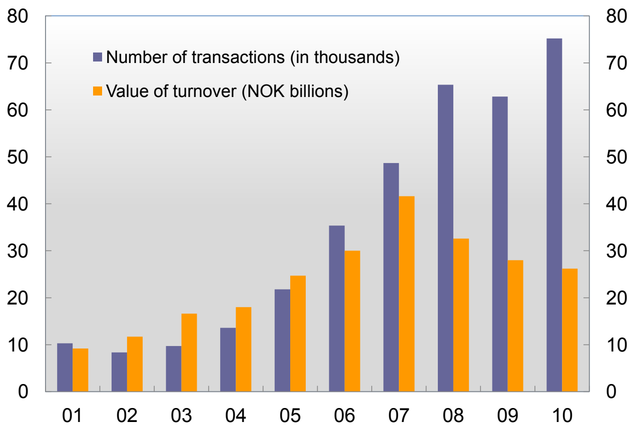
[14] Repurchase agreements account for 2/3 of the traded value of fixed income securities.

Foreign investors accounted for more than 80% of share turnover (in value terms). From August 2010 all equity capital instrument trades on Oslo Børs have been settled through a central counterparty (see box on page 29).

The bankruptcy of Lehman Brothers in 2008 revealed that not everyone understood the securities settlement rules (VPO) in the same way. The bank that performed correspondent banking services for Lehman Brothers was of the opinion that it had no obligation to deliver on behalf of indirect participants. The rules were amended in December 2009 to make it clear that banks which report transactions for settlement are obliged to deliver financial instruments and funds to enable those transactions to be settled. The obligation applies regardless of whether it is the bank's own-account trades being settled or trades the bank is settling on behalf of others.

The arrangement whereby investment firms and banks without their own cash settlement account in VPO would have to have a guarantee from a bank participating in VPO in order to take part in settlement was eliminated in August 2010 for all transactions in VPO. For equity trades, it is the central counterparty that reports trades and that is liable in the event of the insolvency of a participant. Since fixed-income instruments are traded over the telephone by parties who know one another, this requirement was not deemed necessary for bonds and notes.

Chart 2.10 Number of transactions and value of turnover on Oslo Børs.[1] Daily average. 2001–2010



[1] Equity instruments, bonds and certificates
Source: Oslo Børs

Central counterparty to trades in equity capital instruments on Oslo Børs

A central counterparty (CCP) is an institution that specialises in risk management from the time a trade is matched between buyer and seller until its completion. The CCP interposes itself between counterparties to financial contracts traded in a market, becoming the buyer to every seller and the seller to every buyer. In Norway, a CCP may be authorised to act as a clearing house under Chapter 13 of the Norwegian Securities Trading Act.

The board of directors of Oslo Børs decided in December 2008 to introduce CCP clearing for all trades in equities, equity capital instruments and exchange-traded funds on Oslo Børs and Oslo Axess. The primary CCP will be Oslo Clearing, another company in the Oslo Børs VPS group, but an arrangement has also been made so that LCH. Clearnet will interoperate with Oslo Clearing as CCP. This will give Oslo Børs trading participants a choice between two CCPs for equities trading.

On the recommendation of Norges Bank and Finanstilsynet (Financial Supervisory Authority of Norway), the Ministry of Finance authorised Oslo Børs and Oslo Clearing to begin operations in letters dated 21 and 27 April 2010 (see Ministry of Finance, 2010b and 2010c). The condition was stipulated that Oslo Børs trading participants should have access to more than one CCP.

All investment firms trading on Oslo Børs must now submit trades for clearing to a CCP. The CCP calculates the net position for each security and for cash. This reduces the need for liquidity in the trade, and the percentage of submitted transactions settled per settlement day (the settlement rate) will increase. This is because the CCP has an obligation and has a system to ensure delivery of payment even when one of the parties in a trade fails. The risk that settlement failure will have an impact on other trades is thereby reduced.

The use of a CCP will most often reduce settlement risk, but considerable risk is concentrated in the CCP. It is therefore very important that the CCP is solid with an effective risk management system. The recommendations from CPSS/IOSCO referred to in Section 2.1 and 2.4.1 provide valuable guidance in the regulation and oversight of CCPs.

The use of a CCP to a transaction involving equity capital instruments will increase the settlement rate and will probably reduce the net transaction costs despite the fee paid to the CCP. Brokerage firms will need to commit fewer resources to monitoring counterparties. In addition, work related to legal evaluations of counterparties to a transaction will be sharply reduced. The use of a CCP will be particularly important in times of financial turbulence, when banks and investment firms lose confidence in each other and as a result are reluctant to give price quotes in a trading system where the settlement counterparty is unknown.

Among other things, these changes in VPO prompted VPS to apply to Finanstilsynet to renew approval of VPO in accordance with the Payment Systems Act. Finanstilsynet renewed its approval on 2 June 2010, and agreements between parties in VPO continue to enjoy legal protection under the Act.

Some of the proposals of the VPO working group (2009) are still being assessed. This includes the proposal for VPS systems to allow for gross settlement of trades in addition to inclusion in the two daily net settlements. Rules for how VPO should deal with banks under public administration are also being assessed. As VPO operates on a delivery versus payment basis, there is no credit risk. The question is whether it is possible to reduce losses relating to market and liquidity risk by a change in the rules. Currently, a bank under administration cannot participate in settlement, but if this were possible, it might increase the settlement ratio. Losses that others may incur owing to insufficient liquidity or changes in market prices will then decline.

In 2010, Oslo Børs introduced mandatory use of a central counterparty in settling all trades in equity capital instruments (equities, etc.) in its two markets, Oslo Børs and Oslo Axess. The necessary changes in functions and rules in security settlement (VPO) entered into force on 12 May 2010. Operations began with some equities in May and have fully included all equity capital instruments from 27 August. To date, Oslo Clearing is the only central counterparty offering its services for trades in Oslo. Since the change, almost all transactions settled in VPO have this central counterparty as one of the parties. With trades settled via a central counterparty in the Norwegian market, the total number of transactions to be settled has been reduced by more than 60%.

Use of a central counterparty in equity instrument trading will expedite the settlement of such trades. Oslo Clearing participates in cash settlement in NBO with its own account with Norges Bank. Oslo Clearing has cash positions differing from zero in most settlements, which indicates that transactions that otherwise would not have been settled have in fact been settled. There have been no appreciable technical problems since this function was introduced.

2.3.2 The foreign exchange settlement system CLS

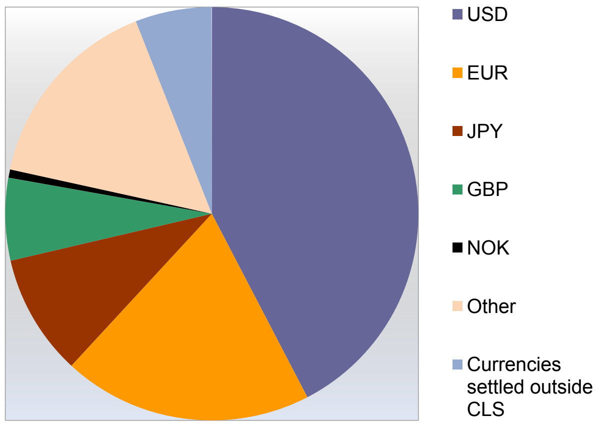
CLS Bank (CLS) is an international bank that specialises in the settlement of foreign exchange transactions. CLS started operations in 2002. CLS eliminates the credit risk associated with settling foreign exchange transactions, and ensures that both sides of a foreign exchange trade are settled simultaneously, i.e. payment versus payment (PvP). CLS currently settles transactions in 17 currencies, and more than 90% of foreign exchange transactions take place in these currencies (see Chart 2.11).

In addition to PvP operations, CLS provides non-PvP settlement of certain credit derivatives and forward contracts where delivery concerns only the change in value and not the principal, i.e. non-deliverable forwards. CLS Bank International is located in New York and is supervised by the Federal Reserve Bank of New York (NY Fed). The central banks for the other currencies settled in CLS participate in an oversight committee. In April 2009, CLS published a self assessment of its system, based on the core principles of CPSS. CLS's assessment was that the bank meets all ten core principles.

CLS has both settlement members and third-party participants. While settlement members manage their own pay-ins to and pay-outs from CLS, third party participants use a settlement partner for this. In recent years the number of settlement members has remained stable at around 60, whereas the number of third party participants has increased sharply. In December 2010 there were more than 10 000 third party participants. There has also been an increase in the number of currencies settled through CLS. This has created challenges for CLS's operations. Central banks have been satisfied with the stability of operations and with the way CLS has dealt with the changes.

The absence of credit risk in settling transactions was one of the conditions that allowed banks to engage in foreign exchange trading as normal in 2008 and 2009. This has bolstered CLS's position in the foreign exchange markets.

Chart 2.11 Foreign exchange trades in April 2010



Source: BIS (BIS Triennal Central Bank Survey 2010)

A survey by CPSS (2008) reveals that around 55% of all foreign exchange transactions in the world are settled via CLS.

Not all foreign exchange transactions can be settled via CLS. For example, CLS is still unable to settle same-day trades. This includes the out-leg of "in/out swaps", which banks use to reduce their pay-in obligations to CLS. In an in/out swap, a bank trades down its position by swapping currencies inside CLS and then swaps back outside CLS the same day. Swapping back outside CLS reintroduces a settlement risk of around USD 130bn per day.[15] CLS is now working to be able to offer settlement of same-day trades between USD and CAD. In addition, there are efforts to include new currencies in the system. CLS is planning to offer settlement in Turkish lira (TRY), Thai baht (THB) and Chilean pesos (CLP) in the course of 2012.

Chart 2.12 shows developments in settlements of NOK transactions in CLS. The left-hand axis and top line show the gross volume of transactions involving NOK. As with all foreign exchange trading, volume fell in autumn 2008. In 2010 transactions amounting to around NOK 250bn were settled each month. The right-hand axis and bottom line indicate banks' pay-in obligations. Banks' positions are netted, resulting in a net pay-in obligation for each bank. In addition, banks trade their positions further by swapping currencies among themselves. This reduces the need for liquidity considerably. Net liquidity out of and into NBO is between 3% and 5% of transactions settled. NOK transactions are largely swaps between NOK and EUR or USD.

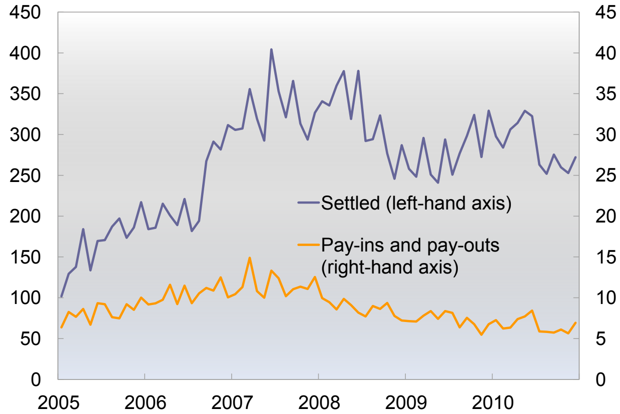
2.4 International developments

2.4.1 New core principles for financial infrastructure

In most countries, supervision and oversight of interbank systems, securities settlement systems and central counterparties are based on common principles drawn up by

[15] See Bakke, Berner and Molland (2011) for a further discussion.

Chart 2.12 Value of daily NOK settlement in CLS and pay-ins and pay-outs in NOK. Monthly average. NOK billions. 2005–2010



Sources: CLS and Norges Bank

CPSS and IOSCO. In view of recent years' experience, revised CPSS/IOSCO principles have been drafted (2011). The proposals have been published for public comment until the end of July 2011. Following a revision based on the consultation responses, revised principles will be finalised in early 2012. Thus, the new principles can be incorporated into national supervisory and oversight systems by end-2012.

While the principles applying to different systems were previously contained in separate documents, the current proposal is for common rules for systemically important interbank systems, securities settlement systems and central counterparties. Moreover, the principles shall apply to central securities depositories and trade repositories. Not all principles will be equally relevant to all types of companies within the new category referred to as "financial market infrastructures" (FMIs). Having a common set of principles is expected to make sector oversight and regulation more consistent.

The report underscores the fact that the financial crisis, market developments and experience have revealed a need to make current principles stricter and add new ones. The most important changes are:

- More explicit recommendations for managing credit and liquidity risks.

- Rules for central counterparties that increase the protection of customers' positions and collateral.

- New principles for general business risk – systems must be able to continue operating without disruption, even in the event of a weakening of their financial position. They must therefore establish routines for monitoring general uncertainty concerning business conditions and have available resources for coping with unexpected situations.

- New principles concerning access and interoperability between FMIs. This is a challenge when several central counterparties have activities at the same exchange.

Norges Bank monitors and oversees clearing and settlement systems in accordance with BIS/IOSCO principles. The Bank then evaluates whether systems comply with the principles and reviews the evaluations when systems are modified. The principles will also be relevant to Finanstilsynet's work on other FMIs (systems for payment services, securities settlement systems, central counterparties and central securities depositories).

2.4.2 TARGET2-Securities (T2S)

To promote a single securities market in Europe, the Eurosystem[16] has established the T2S project. T2S is intended to be a common IT solution that central securities depositories and central banks can use for settling securities trades in euro and other European currencies. If Verdipapirsentralen (VPS) and Norges Bank decide to participate in T2S, the Eurosystem will be responsible for the technical operation of Norwegian securities settlement. The project is discussed in Norges Bank (2010d) and Husevåg (2010).

The project's development phase began in February 2010. T2S is scheduled to go live in September 2014, with all participants connected by 2015. In November 2010 the ECB Governing Council approved the fees for many of the services to be offered by T2S.

[16] The Eurosystem comprises the European Central Bank (ECB) and the national central banks of countries that have adopted the euro.

The ECB/Eurosystem is negotiating on participation with 30 central securities depositories and a number of central banks outside the euro area, including VPS and Norges Bank. The plan is for the central securities depositories and central banks outside the euro area that wish to participate in T2S, to sign participant agreements in November 2011. VPS and Norges Bank will have to be satisfied with the terms of any agreement before any decision can be made for Norway to participate in T2S. A desire on the part of market participants for settlement of NOK trades to take place in T2S is also crucial for Norges Bank.

Since May 2009 Norges Bank has organised a T2S national user group (NUG) modelled on counterparts in other countries. The group has approximately 25 members, from VPS, banks, investment firms and securities funds. Finanstilsynet has observer status. Minutes of meetings are published at www.ecb.int. The NUG meets four times a year to prepare input from the Norwegian market to the T2S Advisory Group (AG). The AG advises the ECB Governing Council on T2S matters, and has approximately 80 members from all potential participant states. The three Norwegian members are from VPS, Norges Bank and DnB NOR.

A group has been formed of supervisory bodies and central banks in countries considering participation in T2S which will collaborate on overseeing and supervising T2S. The group is headed by the ECB and ESMA[17], and 47 institutions have been invited to join. Both Norges Bank and Finanstilsynet are participants. The group's purpose is to make information from T2S concerning work and operating models available to all 47 institutions. They will then have the same underlying information for their supervisory work. Moreover, the group will try to harmonize institutions' assessments of supervisory and oversight issues at hand.

This group of overseers and supervisors communicates with the T2S Programme Board, which has the day-to-day responsibility for developing T2S. The group of overseers and supervisors requests information in writing and fol-

[17] The European Securities Market Authority (ESMA) is the successor to the Committee of European Securities Regulators (CESR) (See European Parliament and Council 2010). In addition to the new name, the ESMA has been granted some new powers (including the right and obligation to act on its own initiative).

lows up responses to obtain assurance that all aspects of the system are fully understood and that potential sources of risk are eliminated. Written information will eventually be supplemented by technical and high-level meetings.

2.4.3 New EEA regulations

Amendments to the Payment Systems Act and the Act relating to financial collateral

The past decade saw substantial changes in European financial markets. An important change affecting the security of interbank systems is that domestic systems are now often linked to systems in other countries. Another important matter concerns criteria for eligibility as central bank collateral, where debt instruments in particular have become relevant.

The EU adopted the Settlement Finality Directive in 1998 and the Financial Collateral Arrangements Directive in 2002. The Securities Finality Directive lays down rules for legal certainty and security in interbank systems and securities settlement systems in the event one or more participants become insolvent. The Financial Collateral Arrangements Directive bolsters the financial market and safeguards financial stability by ensuring secure, organised and market-efficient financial collateral arrangements.

Changes in the financial markets prompted the EU to re-evaluate the two directives in 2005 and 2006. The European Parliament and the Council have passed amendments that address market demands and wishes (see European Parliament and Council 2009). The amending directive also contains some simplifications and clarifications.

The original directives have been incorporated into Norwegian law in the Payment Systems Act and the Act relating to financial collateral. It is especially important for the security of interbank systems for the Payment Systems Act to ensure that clearing and settlement agreements are enforced as spelled out in the contract when an instruction is entered in an authorised interbank or securities settlement system before insolvency proceedings are initiated for a participant in the system.

The amending directives have EEA relevance and will be incorporated into Norwegian law. The necessary amendments to the Payment Systems Act and Act relating to financial collateral were circulated for comment by the Ministry of Finance with a response deadline of 1 March 2011.

Harmonisation of regulations for central counterparties

On 15 September 2010 the European Commission issued a proposal for a new regulation of central counterparties and the use of central counterparties. European Commission (2010a) includes proposals for obligatory use of central counterparties for clearing a number of over-the-counter (OTC) financial products. The proposal has been submitted to the European Parliament and the Council. The proposal is often referred to as EMIR (European Market Infrastructure Regulation).

The proposal confers extensive responsibilities on the ESMA. The ESMA will be tasked with defining which products are to come under the requirement to use a central counterparty and with establishing standards for supervising central counterparties. That such broad oversight authority has been conferred on a supranational regulatory body reflects the international nature of these markets.

Harmonisation of rules for central securities depositories (CSDs)

In 2010 the European Commission worked to establish a new legislative framework for central securities depositories (CSDs). The draft includes definitions of core and ancillary services for CSDs, authorisation rules, ongoing supervision and rules for access and interoperability. In addition, the proposal contains prudential rules (for capital, management, governance, outsourcing, etc).

The Ministry of Finance and Finanstilsynet have participated in the working group appointed by the Commission to draft the new rules. The Commission is planning to adopt the rules as a regulation. A consultation paper was circulated for comment with a response deadline of 1 March 2011.[18]

[18] The paper and responses are available on the Commission website http://ec.europa.eu/index_en.htm

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General data

Table 1: General statistical data for Norway

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Population (per 1. Jan., million)	4.48	4.51	4.53	4.56	4.58	4.61	4.65	4.69	4.75	4.86	4.92
GDP, market value (NOK billion)	1 481	1 537	1 532	1 594	1 743	1 946	2 160	2 272	2 517	2 381	2 505
Mainland GDP, market value (NOK billion)	1 114	1 180	1 225	1 275	1 355	1 451	1 581	1 724	1 812	1 847	1 945
Total houshold consumption (NOK billion)	614	641	670	710	754	793	847	903	948	972	1 027
1 USD in NOK (annual average)	8.81	8.99	7.97	7.08	6.74	6.45	6.42	5.86	5.64	6.28	6.05
1 EUR in NOK (annual average)	8.11	8.05	7.51	8.00	8.37	8.01	8.05	8.02	8.22	8.73	8.01

Settlement media in Norway

Table 2: Means of payment used by the public (at year-end, in NOK million)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Money supply (M2)	**753 269**	**818 859**	**882 914**	**904 217**	**972 014**	**1 085 330**	**1 233 589**	**1 440 205**	**1 494 802**	**1 529 648**	**1 610 662**
Narrow money supply (M1)	**370 378**	**384 631**	**399 711**	**427 689**	**472 058**	**552 246**	**679 343**	**760 448**	**736 491**	**743 968**	**790 124**
Banknotes and coins	42 523	42 038	40 282	41 685	43 340	46 530	48 247	49 543	49 128	48 399	48 721
Deposits in current accounts	327 855	342 593	359 429	386 004	428 718	505 716	631 096	710 905	687 363	695 569	741 403
Other deposits	**326 350**	**370 171**	**409 704**	**407 457**	**423 185**	**435 483**	**473 108**	**559 351**	**657 162**	**693 888**	**731 114**
Certificates of deposit + units in money market funds	**56 541**	**64 057**	**73 499**	**69 071**	**76 771**	**97 601**	**81 138**	**120 406**	**101 149**	**91 792**	**89 424**

Tabell 3: Bank liquidity (NOK million)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sight deposits, annual average	9 233	11 804	15 647	24 690	21 337	28 666	24 536	24 867	41 713	75 111	46 832
Lending (F-loans + D-loans), annual average	5 104	13 356	538	2 978	18 788	14 694	34 411	46 670	67 515	66 242	72 759

Table 4: Banknotes and coins. Annual average (in NOK million)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total	**43 571**	**42 947**	**41 767**	**41 562**	**43 728**	**45 887**	**49 218**	**50 439**	**50 413**	**50 356**	**50 450**
Total banknotes	**40 119**	**39 271**	**37 811**	**37 429**	**39 429**	**41 382**	**44 523**	**45 858**	**45 838**	**45 704**	**45 676**
1000-krone	26 336	24 713	22 599	22 167	23 555	24 649	25 818	26 179	25 371	24 382	23 134
500-krone	6 107	6 921	7 626	7 732	8 278	9 060	10 374	11 213	11 882	12 722	13 623
200-krone	4 275	4 446	4 573	4 674	4 792	4 819	5 296	5 381	5 522	5 580	5 846
100-krone	2 684	2 464	2 270	2 091	2 012	2 021	2 119	2 121	2 083	2 029	2 062
50-krone	717	727	744	765	793	833	916	964	980	993	1 012
Total coins	**3 452**	**3 676**	**3 955**	**4 132**	**4 299**	**4 506**	**4 695**	**4 581**	**4 575**	**4 652**	**4 774**
20-krone	966	1 124	1 387	1 561	1 667	1 778	1 849	1 665	1 541	1 556	1 599
10-krone	1 087	1 111	1 085	1 051	1 049	1 076	1 145	1 214	1 259	1 276	1 307
5-krone	487	497	505	515	538	563	598	630	654	664	674
1-krone	617	641	666	686	718	753	799	845	884	912	941
0.5 krone	165	174	182	191	199	208	218	228	237	245	253
0.10 krone	130	130	130	129	128	128	86	:	:	:	:

Payments infrastructure

Table 5: Institutional infrastructure

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of banks			**153**	**152**	**148**	**149**	**147**	**149**	**149**	**149**	**145**
Savings banks			129	129	127	126	124	123	121	118	113
Commercial banks			16	15	13	14	15	16	18	20	20
Number of foreign bank branches in Norway			8	8	8	9	8	10	10	11	12
Electronic money institutions				4	5	5	4	3	3	3	3

Table 6:Number of agreements

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Internet banking agreements	**933 335**	**1 340 661**	**1 934 318**	**2 429 694**	**2 976 690**	**3 282 793**	**4 009 321**	**4 438 137**	**4 841 244**	**5 299 502**	**5 549 230**
Internet banking agreements – retail customers	:	:	:	:	:	3 221 839	3 683 843	4 089 644	4 471 351	4 865 720	5 097 505
Internet banking agreements – corporate customers	:	:	:	:	:	60 954	325 478	348 493	369 893	433 782	451 725
Agreements to offer electronic invoicing (eFaktura) – corporate customers	:	:	:	:	:	:	330	460	532	648	772
Agreements on reciept of electronic invoicing (eFaktura) – retail customers	:	:	:	:	:	:	2 149 356	2 914 946	4 074 429	5 249 722	6 358 929
Company terminal giro agreements							27 904	28 707	29 127	32 983	33 466
Mail giro agreements	2 687 420	2 361 031	1 787 462	1 707 428	1 540 768	1 453 825	1 189 770	1 152 349	906 957	810 818	759 995
Direct debit agreements (AvtaleGiro and AutoGiro)	3 500 000	4 044 848	4 483 286	4 901 219	5 505 933	6 305 218	7 523 461	8 544 208	9 523 732	10 707 639	11 933 080
AvtaleGiro – payees	6 041	6 473	6 883	7 194	7 905	8 761	9 554	10 373	11 135	11 945	12 619
AutoGiro – payees	1 174	1 200	1 265	1 232	1 187	1 243	1 441	1 350	1 170	1 342	716

Table 7: Number of issued cards (thousands), number of functions in issued cards (thousands) and number of terminals

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of issued cards	**5 611**	**6 081**	**6 395**	**6 931**	**7 616**	**7 872**	**9 187**	**9 908**	**10 629**	**11 644**	**12 084**
Cards with a chip	:	:	:	:	:	:	1 235	2 540	3 848	6 516	9 837
Cards with a magnetic strip	:	:	:	:	:	:	7 953	7 368	6 781	5 127	2 247
Number of functions in issued cards	**9 056**	**10 075**	**10 575**	**11 322**	**12 298**	**12 449**	**14 169**	**15 335**	**16 772**	**17 837**	**18 911**
Debit functions	**7 419**	**7 991**	**8 212**	**8 600**	**9 326**	**9 107**	**10 138**	**10 519**	**11 899**	**11 789**	**12 864**
BankAxept	4 020	4 287	4 362	4 527	4 985	4 894	5 537	5 569	6 218	6 057	6 515
Payment cards issued by international card companies	3 399	3 704	3 850	4 073	4 341	4 214	4 601	4 949	5 681	5 732	6 349
Billing functions (payment cards issued by international card companies)	**416**	**445**	**438**	**451**	**470**	**451**	**478**	**522**	**535**	**542**	**528**
Credit functions	**1 221**	**1 638**	**1 925**	**2 271**	**2 502**	**2 891**	**3 553**	**4 294**	**4 338**	**5 506**	**5 519**
Domestic credit cards	577	630	681	646	535	546	548	647	625	629	642
Payment cards issued by international card companies	644	1 008	1 244	1 624	1 967	2 345	3 005	3 647	3 713	4 877	4 877
Number of terminals that accept BankAxept cards	**67 445**	**73 832**	**82 294**	**93 456**	**94 386**	**96 591**	**100 021**	**109 821**	**119 953**	**122 359**	**125 684**
ATMs	**2 119**	**2 144**	**2 188**	**2 217**	**2 180**	**2 184**	**2 250**	**2 272**	**2 283**	**2 253**	**2 193**
Payment teminals (EFTPOS)	**65 326**	**71 688**	**80 106**	**91 239**	**92 206**	**94 407**	**97 771**	**107 549**	**117 670**	**120 106**	**123 491**
Owned by banks	55 208	59 184	65 374	66 207	68 197	66 786	74 303	75 460	77 804	77 892	77 773
Owned by others	10 118	12 504	14 732	25 032	24 009	27 621	23 468	32 089	39 866	42 214	45 718
Number of locations with payment terminals (EFTPOS) that accept BankAxept cards	**47 434**	**49 328**	**52 705**	**59 100**	**63 976**	**73 242**	**78 656**	**85 490**	**94 708**	**96 152**	**97 722**

Retail payment services

Table 8: Use of payment services (in millions of transactions)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total	**760.9**	**848.3**	**960.4**	**1 039.3**	**1 144.9**	**1 235.5**	**1 341.0**	**1 476.3**	**1 602.6**	**1 701.6**	**1 836.2**
Debit and credit transfers (Giro)	**370.4**	**397.5**	**440.5**	**442.8**	**465.6**	**480.4**	**489.3**	**510.7**	**526.6**	**541.8**	**562.6**
Electronic[1]	221.0	268.1	331.3	348.9	384.3	411.8	437.4	462.3	483.9	503.5	533.5
Paper-based	149.3	129.3	109.3	93.9	81.3	68.6	51.9	48.4	42.7	38.3	29.1
Payment cards (goods purchases)	**386.5**	**448.0**	**517.8**	**595.0**	**678.1**	**754.2**	**851.0**	**965.1**	**1 075.6**	**1 159.5**	**1 273.5**
Electronic	378.4	439.0	508.0	584.7	664.2	737.9	830.7	960.3	1 073.2	1 157.7	1 271.8
Manual	8.2	9.0	9.8	10.3	13.9	16.3	20.4	4.8	2.4	1.9	1.7
Cheques	**4.0**	**2.9**	**2.0**	**1.5**	**1.2**	**0.8**	**0.7**	**0.5**	**0.4**	**0.3**	**0.2**

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

Table 9: Debit and credit tranfers (giros) (in millions of transactions)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total	**370.4**	**396.7**	**440.3**	**442.8**	**465.6**	**480.4**	**489.3**	**510.7**	**526.6**	**541.8**	**562.6**
Credit transfers[1]	**320.9**	**343.5**	**393.9**	**395.5**	**418.2**	**431.6**	**439.6**	**453.5**	**467.2**	**476.9**	**491.9**
Electronic	**192.1**	**234.5**	**299.9**	**314.8**	**348.5**	**371.9**	**395.6**	**412.7**	**430.5**	**443.6**	**467.1**
Company terminal giro	128.7	143.8	153.2	164.4	160.2	95.8	51.5	46.1	43.2	44.1	44.9
Internet banking	34.6	62.0	81.4	101.5	138.4	227.8	293.6	318.8	340.4	349.7	371.6
Internet banking solutions for retail customers	34.6	62.0	:	91.6	112.0	131.8	144.0	154.2	171.2	205.3	220.2
Internet banking solutions for corporate customers	-	-	:	9.9	26.4	96.0	149.6	164.6	169.2	144.4	151.4
Telephone giros	28.8	28.7	26.8	25.5	24.8	21.8	16.9	13.9	12.2	12.7	11.1
Miscellaneous other electronic credit transfers	:	:	38.5	23.4	25.1	26.4	33.6	33.8	34.7	37.1	39.5
Paper-based	**128.9**	**109.1**	**94.0**	**80.6**	**69.7**	**59.8**	**44.0**	**40.8**	**36.7**	**33.3**	**24.8**
Company terminal giros and Internet banking as money order	6.3	5.6	4.9	4.2	3.0	2.6	1.0	1.7	1.3	1.2	0.9
Mail giros	90.2	74.4	61.7	52.1	44.6	38.0	32.6	29.0	26.1	23.8	19.9
Giros delivered at the counter – account debits	32.4	28.3	27.1	24.4	22.0	19.2	10.4	10.1	9.3	8.3	3.9
Miscellaneous giros registered in banks[2]	0.0	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0		
Direct debits	**29.0**	**33.6**	**31.3**	**34.1**	**35.8**	**39.9**	**41.8**	**49.6**	**53.4**	**59.9**	**66.4**
Giros delivered at the counter – cash payments	**20.4**	**19.5**	**15.0**	**13.2**	**11.6**	**8.9**	**7.8**	**7.6**	**6.0**	**5.0**	**4.3**

[1] Figures for credit tranfers do not include miscellaneous credit transfers, including standing orders in the period 2000–2001.
[2] Miscellaneous giros registered in banks includes both cash payments and account debits.

Table 10a: Payment cards: Use of cards (in millions of transactions)[1]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total use of Norwegian cards (in Norway and abroad)	**496.8**	**563.6**	**631.1**	**704.7**	**786.6**	**862.2**	**957.6**	**1 070.7**	**1 182.0**	**1 259.7**	**1 368.8**
Goods purchases	**386.5**	**448.0**	**517.8**	**595.0**	**678.1**	**754.5**	**851.0**	**965.1**	**1 075.6**	**1 159.5**	**1 273.5**
Goods purchases without cashback	283.8	323.8	385.2	456.8	533.6	618.5	769.1	887.4	1 002.4	1 088.5	1 208.3
Goods purchases with cashback	102.7	124.2	132.6	138.2	144.6	135.9	81.9	77.7	73.2	71.1	65.2
Cash withdrawals without goods purchases	**110.3**	**115.7**	**113.3**	**109.7**	**108.5**	**107.8**	**106.6**	**105.6**	**106.4**	**100.1**	**95.3**
Use of Norwegian cards by function											
Debit functions	**473.7**	**536.5**	**601.4**	**669.5**	**743.6**	**809.2**	**904.2**	**1 001.3**	**1 102.8**	**1 172.1**	**1 270.6**
BankAxept	441.1	496.7	548.3	615.3	681.7	745.7	817.4	896.1	987.7	1 045.0	1 123.6
Payment cards issued by international card companies	32.6	39.8	53.1	54.2	61.9	63.5	86.8	105.3	115.1	127.1	146.9
Billing functions (Payment cards issued by international card companies)	**13.9**	**14.8**	**13.9**	**14.8**	**16.6**	**19.1**	**17.7**	**20.5**	**22.6**	**21.4**	**19.1**
Credit functions	**9.2**	**12.3**	**15.7**	**20.4**	**26.4**	**33.9**	**35.7**	**48.8**	**56.5**	**66.2**	**79.1**
Domestic credit cards	2.9	3.6	4.5	5.3	5.7	6.1	6.5	7.8	8.8	8.0	6.7
Payment cards issued by international card companies	6.3	8.8	11.2	15.1	20.7	27.8	29.2	40.9	47.8	58.2	72.4
Use of Norwegian cards abroad	**22.6**	**26.2**	**31.5**	**36.2**	**38.3**	**38.8**	**50.6**	**70.4**	**74.4**	**82.7**	**103.4**
Goods purchases	16.3	19.0	23.2	27.0	29.8	30.6	42.3	58.2	60.3	69.0	88.9
Cash withdrawals	6.3	7.1	8.3	9.2	8.6	8.3	8.3	12.2	14.1	13.7	14.5
Use of foreign cards in Norway	**7.1**	**7.8**	**8.6**	**9.5**	**10.8**	**13.6**	**14.3**	**14.3**	**16.3**	**17.5**	**19.3**
Goods purchases	6.0	6.5	7.3	8.1	9.3	12.4	12.6	11.7	13.5	15.1	17.0
Cash withdrawals	1.2	1.3	1.4	1.4	1.5	1.3	1.7	2.7	2.8	2.4	2.3

[1] Figures for the years 2000–2001 do not include the use of international payment cards and domestic credit cards in terminals owned by entities other than banks and oil companies. Figures for the use of international payment cards in payment terminals also includes the use of cards on the Internet.

Table 10b: Payment cards: Use of terminals (in millions of transactions)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Use of Norwegian terminals	**514.8**	**578.3**	**633.3**	**709.6**	**780.9**	**857.3**	**941.1**	**1 035.1**	**1 146.3**	**1 221.4**	**1 300.8**
Cash withdrawals from ATMs	106.1	109.0	103.5	102.1	99.3	98.7	99.8	95.9	94.9	88.8	83.0
Goods purchases in EFTPOS terminals that accept BankAxept	391.6	446.1	500.8	575.6	638.5	718.1	797.6	868.1	967.5	1 064.5	1 143.4
Of which BankAxept goods purchases with cashback	102.7	124.2	132.6	138.2	144.6	135.9	81.9	77.7	73.2	71.1	65.2
Goods purchases in other Norwegian payment terminals	17.1	23.2	29.0	31.9	43.1	40.5	43.7	71.0	84.0	68.2	74.4
Use of Norwegian cards in Norwegian terminals	**506.7**	**571.2**	**621.7**	**696.2**	**772.3**	**846.8**	**927.0**	**1 021.9**	**1 130.0**	**1 203.9**	**1 281.4**
Cash withdrawals from ATMs	**103.3**	**107.7**	**102.1**	**100.3**	**99.2**	**98.8**	**98.1**	**93.3**	**92.1**	**86.4**	**80.7**
BankAxept	98.6	102.0	96.6	95.6	93.2	91.7	88.7	86.7	84.5	78.9	74.6
Domestic credit cards	1.0	1.2	1.0	1.4	1.1	0.8	1.1	0.9	0.8	0.7	0.7
Cards issued by international card companies	3.8	4.5	4.5	3.3	4.9	6.3	8.4	5.6	6.8	6.7	5.4
Goods purchases in payment terminals	**403.4**	**463.5**	**519.6**	**595.9**	**673.1**	**748.0**	**828.9**	**928.6**	**1 037.9**	**1 117.5**	**1 200.7**
BankAxept – goods purchases (including purchases with cashback) in EFTPOS terminals	342.5	394.7	451.7	519.7	588.4	654.1	728.7	809.4	903.1	966.1	1 048.9
Domestic credit cards – goods purchases	1.3	2.0	3.0	3.8	4.1	4.8	5.3	6.7	7.8	7.1	5.8
Cards issued by international card companies – goods purchases	24.2	29.7	34.4	41.9	51.8	61.3	70.4	90.9	105.9	119.5	133.5
Oil companies' cards	35.4	37.1	30.5	30.4	28.8	27.8	24.5	21.6	21.1	24.8	12.5

Table 11: Cross-border transfers registered in the Register of Crossborder Transactions and Currency Exchange (in thousands of transactions)

	2006	2007	2008	2009	2010
Transfers from Norway	**5 422.5**	**6 298.6**	**6 521.9**	**6 785.1**	**7 337.2**
SWIFT	5 171.1	5 861.4	5 919.3	6 094.9	6 576.5
Foreign currency cheques	97.0	133.1	159.2	170.1	171.5
Other transfers (MoneyGram, Western Union, etc.)	154.5	304.1	443.5	520.1	589.2
Transfers to Norway	**2 784.8**	**2 791.7**	**2 872.9**	**2 912.3**	**3 124.9**
SWIFT	2 773.7	2 743.5	2 822.7	2 863.2	3 072.5
Foreign currency cheques	3.2	36.7	34.8	28.7	28.3
Other transfers (MoneyGram, Western Union, etc.)	7.9	11.5	15.5	20.4	24.1

Table 12: Use of payment services (in NOK billion)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total	**5 894.4**	**5 951.8**	**6 225.1**	**6 934.7**	**8 963.5**	**8 247.9**	**9 301.6**	**10 865.9**	**11 714.6**	**11 547.9**	**12 530.7**
Debit and credit transfers (Giro)	**5 627.7**	**5 695.1**	**5 943.5**	**6 653.3**	**8 656.0**	**7 909.5**	**8 904.8**	**10 428.8**	**11 229.7**	**11 042.2**	**11 994.7**
Electronic[1]	4 720.0	5 156.0	5 457.2	6 242.0	8 283.6	7 662.1	8 680.1	10 212.2	11 042.9	10 868.5	11 854.7
Paper-based	907.7	539.0	486.3	411.3	372.4	247.4	224.7	216.5	186.8	173.8	140.0
Payment cards (goods purchases)	**164.3**	**184.2**	**224.9**	**236.6**	**265.0**	**305.5**	**381.0**	**424.3**	**473.5**	**493.6**	**525.7**
Electronic	156.2	175.4	215.4	227.9	254.1	289.5	365.1	418.3	470.0	491.1	523.2
Manual	8.1	8.9	9.5	8.7	10.9	16.0	15.9	6.0	3.5	2.5	2.5
Cheques	**102.4**	**72.5**	**56.6**	**44.9**	**42.5**	**32.9**	**15.8**	**12.9**	**11.3**	**12.0**	**10.3**

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

Table 13: Debit and credit tranfers (giros) (in NOK billion)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Totalt	**5 627.7**	**5 695.1**	**5 943.5**	**6 653.3**	**8 656.0**	**7 909.5**	**8 904.8**	**10 428.8**	**11 229.7**	**11 042.2**	**11 994.7**
Credit transfers[1]	**5 314.2**	**5 410.5**	**5 714.4**	**6 431.5**	**8 396.5**	**7 612.6**	**8 624.8**	**10 149.4**	**10 991.7**	**10 809.9**	**11 746.2**
Electronic	**4 517.9**	**4 971.2**	**5 308.0**	**6 077.4**	**8 105.1**	**7 449.2**	**8 456.6**	**9 992.5**	**10 859.6**	**10 681.2**	**11 636.4**
Company terminal giro	4 372.2	4 716.2	4 678.4	5 225.3	6 553.4	2 976.6	2 294.1	2 921.4	2 102.9	2 576.2	2 904.7
Internet banking	93.3	197.3	409.1	650.7	1 351.8	4 272.8	5 772.4	6 496.3	8 239.4	7 567.7	8 052.4
Internet banking solutions for retail customers	93.3	197.3	:	332.6	436.4	517.3	585.4	650.1	775.6	966.9	1 078.3
Internet banking solutions for corporate customers	-	-	:	318.1	915.4	3 755.6	5 187.0	5 846.2	7 463.8	6 600.8	6 974.1
Telephone giros	52.5	57.6	54.3	51.0	48.4	43.8	37.5	31.0	29.7	32.8	29.0
Miscellaneous other electronic credit transfers	:	:	166.3	150.4	151.5	155.9	352.6	543.8	487.6	504.5	650.2
Paper-based	**796.2**	**439.3**	**406.4**	**354.1**	**291.4**	**163.5**	**168.2**	**156.9**	**132.1**	**128.7**	**109.8**
Company terminal giros and internet banking as money order	44.0	42.0	36.8	33.4	27.2	4.5	11.7	15.7	10.5	13.8	11.4
Mail giros	527.7	195.5	175.7	184.6	161.1	103.0	81.7	72.0	62.6	53.1	43.5
Giros delivered at the counter – account debits	224.6	189.0	190.0	136.1	103.1	55.9	74.7	69.2	59.0	61.8	54.8
Miscellaneous giros registered in banks[2]	0.0	12.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct debits	**202.0**	**184.8**	**149.2**	**164.6**	**178.5**	**212.9**	**223.5**	**219.7**	**183.4**	**187.3**	**218.3**
Giros delivered at the counter – cash payments	**111.5**	**99.7**	**79.8**	**57.2**	**81.0**	**83.9**	**56.5**	**59.7**	**54.7**	**45.1**	**30.2**

[1] Figures for credit tranfers do not include miscellaneous credit transfers, including standing orders in the period 2000–2001.
[2] Miscellaneous giros registered in banks includes both cash payments and account debits.

Table 14a: Payment cards: Use of cards (in NOK billion)[1]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total use of Norwegian cards (in Norway and abroad)[1]	**315.9**	**355.7**	**382.9**	**411.6**	**440.0**	**480.8**	**510.8**	**556.6**	**609.0**	**625.1**	**653.7**
Goods purchases	164.3	184.2	224.9	236.6	265.0	305.4	352.2	396.1	445.8	465.8	500.1
Cashback from EFTPOS terminals	36.9	44.7	47.5	48.3	48.3	49.4	28.8	28.1	27.8	27.8	25.7
Cash withdrawals without goods purchases	114.6	126.8	110.4	126.6	126.7	126.0	129.8	132.4	135.5	131.4	128.0
Use of Norwegian cards abroad	**23.3**	**25.6**	**29.3**	**33.6**	**34.4**	**35.5**	**40.5**	**58.5**	**62.2**	**66.8**	**75.1**
Goods purchases	13.8	15.0	17.4	20.4	21.8	23.5	28.5	40.7	41.9	45.6	53.8
Cash withdrawals	9.5	10.6	11.9	13.3	12.6	12.0	12.0	17.8	20.3	21.1	21.4
Use of Norwegian cards by function											
Debit functions	**283.4**	**320.0**	**344.5**	**371.0**	**393.5**	**429.1**	**447.3**	**483.7**	**525.9**	**535.8**	**561.4**
BankAxept	259.8	291.8	309.7	335.7	354.1	386.9	398.0	422.2	461.7	465.2	487.0
Payment cards issued by international card companies	23.6	28.2	34.8	35.4	39.4	42.2	49.2	61.5	64.3	70.6	74.4
Billing functions (Payment cards issued by international card companies)	**17.2**	**18.1**	**17.5**	**16.9**	**17.8**	**19.7**	**19.0**	**22.9**	**25.1**	**22.9**	**20.5**
Credit functions	**15.4**	**17.6**	**20.8**	**23.8**	**28.8**	**32.0**	**44.5**	**50.0**	**58.0**	**66.4**	**71.9**
Domestic credit cards	6.7	7.4	8.3	7.5	7.6	5.3	8.7	9.5	10.1	8.9	8.3
Payment cards issued by international card companies	8.7	10.3	12.5	16.2	21.1	26.7	35.8	40.4	47.9	57.4	63.5
Use of foreign cards in Norway	**5.4**	**5.8**	**5.9**	**6.9**	**8.5**	**9.6**	**10.2**	**10.0**	**12.2**	**12.6**	**13.7**
Goods purchases	3.9	4.1	4.2	5.0	6.3	7.7	7.9	6.3	8.4	9.3	10.6
Cash withdrawals	1.5	1.7	1.7	1.9	2.2	1.8	2.4	3.7	3.8	3.3	3.1

[1] Figures for the years 2000 - 2001 do not include the use of international payment cards and domestic credit cards in terminals owned by entities other than banks and oil companies. Figures for the use of international payment cards in payment terminals also includes the use of cards on the Internet.

Table 14b: Payment cards: Use of terminals (in NOK billion)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Use of Norwegian terminals	**:**	**:**	**367.0**	**395.1**	**419.7**	**454.8**	**483.1**	**515.4**	**570.6**	**583.7**	**604.9**
Cash withdrawals from ATMs	106.3	115.8	114.0	115.0	113.1	112.0	119.2	117.8	118.5	113.2	109.5
Goods purchases in EFTPOS terminals that accept BankAxept cards	:	:	183.5	211.2	231.2	272.6	305.8	319.7	365.6	395.7	422.5
Cashback with goods purchases with BankAxept cards	36.9	44.7	47.5	48.3	48.3	49.4	28.8	28.1	27.8	27.8	25.7
Goods purchases at other Norwegian payment terminals	15.9	18.3	21.9	20.5	27.1	20.8	29.3	49.8	58.8	47.0	47.3
Use of Norwegian cards in Norwegian terminals	**302.9**	**339.0**	**357.6**	**387.5**	**413.3**	**452.4**	**473.1**	**505.8**	**558.5**	**571.0**	**591.0**
Cash withdrawals from ATMs	**103.6**	**114.3**	**112.4**	**112.6**	**112.8**	**112.1**	**116.9**	**114.1**	**114.8**	**109.9**	**106.4**
BankAxept	97.9	107.0	105.0	105.7	104.2	101.9	103.1	103.2	102.8	98.4	96.8
Domestic credit cards	1.4	1.4	1.4	2.1	1.7	1.3	1.6	1.4	1.4	1.2	1.1
Cards issued by international card companies	4.4	5.9	6.0	4.9	7.0	8.9	12.2	9.5	10.6	10.4	8.5
Cashback with goods purchases with BankAxept cards	**36.9**	**44.7**	**47.5**	**48.3**	**48.3**	**49.4**	**28.8**	**28.1**	**27.8**	**27.8**	**25.7**
Good purchases in payment terminals	**162.4**	**180.0**	**197.6**	**226.5**	**252.2**	**290.9**	**327.4**	**363.6**	**415.9**	**433.3**	**458.9**
BankAxept – goods purchases in EFTPOS terminals	125.0	140.1	157.2	181.6	201.7	235.4	266.1	290.9	331.0	338.9	364.3
Domestic credit cards – goods purchases	2.7	3.2	4.3	5.0	5.1	5.7	5.9	6.8	7.7	6.7	6.0
Cards issued by international card companies – goods purchases	19.8	22.5	24.6	28.0	33.1	36.6	44.8	55.1	63.9	74.3	76.1
Oil companies' cards	14.9	14.2	11.6	12.0	12.4	13.1	10.6	10.8	13.3	13.4	12.5

Table 15: Cross-border transfers registered in the Register of CrossborderTransactions and Currency Exchange (in NOK million)

	2006	2007	2008	2009	2010
Transfers from Norway	**:**	**5 791 416**	**6 503 064**	**6 549 533**	**7 124 450**
SWIFT	:	5 153 212	5 818 297	5 544 906	5 496 777
Foreign currency cheques	766 232	636 924	683 043	1 002 642	1 625 499
Other transfers (MoneyGram, Western Union, etc.)	620	1 280	1 724	1 985	2 174
Transfers to Norway	**:**	**4 047 008**	**4 578 060**	**4 377 504**	**4 366 061**
SWIFT	:	4 039 783	4 574 037	4 376 451	4 365 003
Foreign currency cheques	5 184	7 150	3 928	910	934
Other transfers (MoneyGram, Western Union, etc.)	43	75	95	144	125

Interbank

Table 16: Average daily turnover in clearing and settlement systems (transactions)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NICS											
NICS Gross/RTGS	282	303	300	596	611	532	547	593	605[1)]	524	566
NICS SWIFT Net[2]	4 344	4 719	4 925	5 155	4 480	4 744	5 301	5 908	6 390	6 269	-
NICS Net (million)[3]	3,0	3,4	3,7	4,0	4,3	4,7	5,1	5,5	5,9	6,5	6,8
NBO											
NICS SWIFT RTGS								593	539[1)]	521	537
RTGS Gross transactions outside of NICS								199	272	158	287

[1] Difference between NICS and NBO figures due to different methods for counting transactions through back-up solution

[2] Net clearing of SWIFT transactions eliminated from June 2010

[3] Comprises the previous NICS Retail and NICS SWIFT payments below NOK 25m

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

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NICS	**175.1**	**211.4**	**212.5**	**248.7**	**195.7**	**200.8**	**224.8**	**254.5**	**246.6**	**213.1**	**195.7**
NICS Gross/RTGS[1]	123.0	151.2	149.5	187.8	129.4	135.5	155.3	176.8	165.9	124.1	106.7
NICS SWIFT Net[2]	16.9	16.1	16.2	12.6	5.2	5.7	6.7	7.6	7.3	6.1	-
NICS Net[3]	35.1	44.1	46.8	48.3	61.1	59.6	62.8	70.1	73.4	82.9	89.0
NBO	**144.0**	**172.1**	**169.2**	**206.8**	**152.3**	**160.8**	**185.2**	**226.1**	**224.9**	**186.6**	**175.7**
NICS SWIFT RTGS[1]	123.2	150.7	149.5	187.7	128.9	135.5	155.3	180.2	163.9	122.0	104.0
RTGS Gross transactions outside of NICS	9.3	6.9	4.8	7.2	11.1	12.1	16.1	31.1	45.6	37.7	44.9
NICS SWIFT Net[2]	3.8	5.3	5.5	2.1	1.0	0.9	1.0	1.2	1.1	1.6	-
NICS Retail[3]	5.5	6.8	6.9	6.7	7.6	8.5	8.1	8.1	9.2	17.1	16.3
VPO and Oslo Clearing	2.2	2.3	2.5	3.1	3.7	3.8	4.7	5.5	5.1	8.2	10.5
VPO							4.4	5.1	4.9	8.0	10.4
Oslo Clearing							0.3	0.4	0.3	0.2	0.1

[1] Difference between NICS and NBO figures due to different methods for counting transactions through back-up solution

[2] Net clearing of SWIFT transactions eliminated from June 2010

[3] Comprises the previous NICS Retail and NICS SWIFT payments below NOK 25m

Table 18: Number of participants in clearing and settlement systems (at year-end)

	2006	2007	2008	2009	2010
Norges Bank's settlement system (NBO): Banks with account in Norges Bank	145	142	143	140	141
Norges Bank's settlement system (NBO): Banks with retail net settlement in Norges Bank	23	23	22	21	21
DnB NOR	104	103	103	106	103
Sparebank 1 Midt-Norge	17	18	16	16	14
Norwegian Interbank Clearing System (NICS)	146	146	143	145	142

Table 19: Participation in SWIFT

	2004		2005		2006		2007		2008		2009		2010	
	Norwe-gian	Total	Norwe-gian	Total	Norwe-gian	Total	Norwe-gian	Total	Norwe-gian	Total	Norwe-gian	Total	Norwe-gian	Total
Total	**34**	**7 667**	**32**	**7 863**	**32**	**8 103**	**32**	**8 386**	**35**	**8 830**	**36**	**9 281**	**37**	**9 705**
Members	14	2 280	14	2 229	13	2 289	13	2 268	13	2 276	13	2 356	13	2 344
Sub-members/domestic users covered by members abroad	12	3 019	11	3 060	11	3 124	10	3 209	12	3 305	12	3 306	12	3 331
Participants	8	2 368	7	2 574	8	2 690	9	2 909	10	3 249	11	3 619	12	4 030

Tabell 20: SWIFT message traffic to/from Norway (in thousands of transactions)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of messages sent	9 238	10 521	11 239	12 931	18 590	22 060	30 090	42 300	57 640	52 994	45 071
Number of messages received	6 920	8 163	8 747	10 391	13 650	13 500	15 250	17 300	20 200	19 430	20 362
Global SWIFT-traffic	1 273 913	1 533 906	1 817 444	2 047 564	2 299 074	2 518 290	2 864 540	3 501 200	3 854 000	3 760 314	4 031 935

Prices

Table 21: Prices for domestic payment services, retail customers. Weighted average (NOK). 1. January

	2000 to 2008[1]					2009 to 2011[2] List prices			2009 to 2011[2] Prices in loyalty schemes		
	2000	2002	2004	2006	2008	2009	2010	2011	2009	2010	2011
Payments											
Internet banking (with CID), per payment	1.9	1.9	2.0	2.1	2.0	1.6	1.6	1.5	0.1	0.1	0.0
Internet banking, annual fee						22.8	29.0	10.6	0.0	0.2	0.3
Direct debit (AvtaleGiro), per payment					2.1	1.6	1.6	1.5	0.2	0.1	0.0
Mobile banking (with CID), per payment						1.6	1.7	1.6	0.2	0.1	0.1
Mobile banking – transfers between own accounts, per transfer						0.2	0.2	0.2	0.1	0.1	0.1
Mobile banking – SMS-account information, per inquiry						2.6	2.4	2.5	1.7	1.8	2.1
Credit transfer via mail (letter giro), per payment	4.8	5.7	6.5	6.9	7.0	7.2	7.2	7.5	7.4	7.7	8.1
Giro over the counter – account debit, per payment	16.9	25.1	30.0	33.4	33.6	40.4	46.9	49.0	35.5	38.6	39.9
Giro over the counter – cash payment, per payment	26.1	31.7	41.9	42.0	43.7	60.6	62.8	63.4	55.4	57.4	59.9
BankAxept cards in payment terminals (EFTPOS), per payment	2.2	2.1	2.1	2.3	2.3	1.7	1.7	1.6	0.0	0.0	0.0
Credit cards from international card companies, annual fee						169.2	136.9	158.5	25.3	17.5	20.2
BankAxept cards (combinded with debet card from int. card comp.), annual fee			265.9	260.7	266.6	243.5	243.3	246.2	171.5	192.1	191.1
Cheques – retail customers, per cheque booklet						23.5	14.1	19.3	19.9	20.8	15.3
Cheques – retail customers, per cheque payment	15.0	20.7	20.6	27.3		19.6	23.5	21.0	17.5	22.8	23.7
ATM withdrawals with BankAxept											
Own bank's ATMs during opening hours, per withdrawal	0.0	0.0	0.0	0.2	0.2	0.3	0.3	0.3	0.0	0.0	0.0
Own bank's ATMs outside opening hours, per withdrawal	3.8	3.8	3.9	3.9	3.8	2.8	2.5	2.4	0.1	0.0	0.0
Other banks' ATMs during opening hours, per withdrawal	2.6	3.9	4.7	6.4	6.6	5.3	5.0	4.9	5.0	5.1	5.2
ATM withdrawals with credit cards from international card companies											
Own bank's ATMs during opening hours, per withdrawal						27.2	25.3	25.3	30.1	29.8	29.4
Other banks' ATMs during opening hours, per withdrawal						27.3	25.4	24.9	30.3	29.9	29.5

[1] Average prices for customers who do not participate in loyalty schemes etc. Prices are based on a sample of 24 banks, representing an 85% market share of sight deposits. Each bank's prices are weighted on the basis of that bank's share of sight deposits.

[2] Starting from 2009, average prices are based on 104 banks, representing a 93% market share of sight deposits. Prices have been collected from www.finanspotalen.no. Each bank's prices are weighted on the basis of that bank's share of sight deposits. When a bank has more than one loyalty scheme, the median of these prices used.

Table 22:Prices for domestic payment services, corporate customers. Weighted average (NOK). 1. January [1]

	2000	2002	2004	2006	2008	2009	2010	2011
Payments								
Electronic giro services								
Direct Remittance without notification	2.1	2.8	3.0	3.4				
Direct Remittance with notification	4.0	4.8	5.2	5.5				
Direct Remittance with CID	1.0	1.4	1.5	1.6				
Other company terminal giro without notification	1.9	2.1	1.6	1.7				
Other company terminal giro with notification	3.1	3.6	3.8	3.7				
Other company terminal giro with CID	0.9	1.0	1.0	2.0				
Internet banking – without notification					1.5	1.5	1.5	1.5
Internet banking – with notification					4.2	4.1	4.2	4.2
Internet banking – with CID					1.1	1.1	1.1	1.1
Paper-based giro services								
Direct Remittance sent as money order	27.8	32.6	35.7	47.9				
Other company terminal giro sent as money order	26.1	32.6	35.3	37.2				
Corporate internet banking sent as money order					50.2	75.3	73.1	73.0
Receipt of payments								
Electronic giro services								
Direct debits (Avtalegiro) without notification from the bank	1.4	1.4	1.5	1.4	1.3	1.4	1.2	1.3
Optical Character Recognition (OCR) – File	0.9	1.1	1.2	1.3	1.3	1.3	1.3	1.4
GiroMail					0.0	0.0	0.0	0.0
Paper-based giro services								
Optical Character Recognition (OCR) – Return	3.7	3.7	3.9	4.4	3.3	3.2	3.9	4.4

[1] Average prices for customers who do not participate in loyalty schemes etc. Prices are based on a sample of 24 banks, representing an 85% market share of sight deposits. Each bank's prices are weighted on the basis of that bank's share of sight deposits.

Table 23: Prices for transfers from Norway to EU/EEA countries. Weighted average (NOK). 1. January

	Electronic payment order/ automated processing							Manual payment order						
	2005	2006	2007	2008	2009	2010	2011	2005	2006	2007	2008	2009	2010	2011
Ordinary SWIFT transfer in NOK														
Without BIC and IBAN, NOK 2 500	66.9	59.9	64.7	64.7	65.8	63.8	64.3	132.8	136.4	136.4	145.8	157.8	157.1	161.7
With BIC and IBAN, NOK 2 500	55.9	40.6	45.6	45.4	58.3	57.0	56.9	121.9	125.0	128.6	131.0	143.0	146.1	150.2
Ordinary SWIFT transfer in EUR														
Without BIC and IBAN, NOK 2 500 equivalent	66.9	59.9	63.4	63.6	64.6	60.9	65.1	132.8	136.4	136.4	145.8	157.8	157.1	157.9
With BIC and IBAN, NOK 2 500 equivalent	35.3	32.5	33.9	29.9	29.7	28.9	28.7	105.2	110.1	122.6	126.5	139.9	142.8	146.6
SWIFT express transfer in NOK														
Without BIC and IBAN, NOK 150 000	311.0	299.2	348.0	332.7	349.3	330.2	331.7	377.7	381.1	381.6	387.7	405.0	396.3	402.7
With BIC and IBAN, NOK 150 000	300.6	289.9	305.7	300.3	308.1	299.4	300.1	367.3	371.5	373.9	373.0	390.3	385.3	391.3
SWIFT express transfer in EUR														
Without BIC and IBAN, NOK 150 000 equivalent	311.0	299.2	348.0	333.2	349.8	330.2	340.9	377.7	381.1	381.6	387.8	405.1	396.3	399.3
With BIC and IBAN, NOK 150 000 equivalent	300.6	282.4	303.4	298.0	304.8	296.5	296.8	367.3	362.3	373.9	372.4	389.6	384.6	390.5
Cheques to other countries														
Equivalent to NOK 2 500	-	-	-	-	-			205.7	202.5	204.6	207.1	221.5	218.4	203.6

Table 24: Prices for receipt of payments from EU/EEA countries. Weighted average (NOK). 1. January

	Receipt of payments from EU/EEA countries						
	2005	2006	2007	2008	2009	2010	2011
Receipt of payments in euro							
Without BIC and IBAN, NOK 2 500 equivalent[1]	96.4	86.4	80.8	80.8	59.9	63.0	61.1
Without BIC and IBAN, NOK 150 000 equivalent	97.9	93.0	85.1	84.6	62.8	66.0	64.4
With BIC and IBAN, NOK 2 500 equivalent[1]	21.6	13.2	12.6	10.4	16.0	17.2	18.5
With BIC and IBAN, NOK 150 000 equivalent	95.8	29.6	12.6	10.4	16.0	17.2	18.5
Receipt of payments in other currencies							
Without BIC and IBAN, NOK 2 500 equivalent[1]	97.9	96.5	92.9	90.6	70.2	71.6	70.5
Without BIC and IBAN, NOK 150 000 equivalent	97.9	96.5	98.0	96.4	96.7	93.2	92.2
With BIC and IBAN, NOK 2 500 equivalent[1]	95.8	96.5	92.3	90.2	69.6	71.1	70.5
With BIC and IBAN, NOK 150 000 equivalent	95.8	96.5	95.2	94.5	74.2	73.9	73.3

[1] The amount was NOK 50 000, not NOK 2 500, in 2005 and 2006.

Definitions and abbreviations

Only definitions and abbreviations that are specific to the Norwegian system are included. The international reader is assumed to find definitions of general concepts in material released by the BIS, EU, etc.

Autogiro (product name): An electronic toll system whereby enterprises can draw outstanding claims directly from the bank accounts of their customers at maturity (see also direct debit).

Avtalegiro (product name): An electronic toll system whereby enterprises can send their outstanding claims directly to payment from the bank accounts of their customers at maturity (see also direct debit). The customer can change or withdraw the payment prior to maturity.

BankAxept cards (product name): Debit cards issued by Norwegian banks and linked to the customer's bank account. It is the dominant card system for transactions in Norway.

BankAxess (product name): Payment solution for payments from bank accounts via the internet and security through BankID.

BankID (product name): A PKI (Public Key Infrastructure)-based electronic identification. Can be used for payments over the internet, mobile phones etc..

BBS (Company name): Bankenes Betalingssentral AS (In 2010 BBS where one of the parties in the merger creating Nets as).

Bedriftsterminalgiro (a common concept for company terminal giro systems): Payment solutions for enterprises. The solutions require software to be installed locally at the user / enterprise. The solutions are used both for individual payments and bulk payments to payment recipients with or without known bank accounts.

BSK: Bankenes Standardiseringskontor (company name): Bank-owned company with tasks related to the establishment, maintenance and further development of Norwegian banking standards related to payment and information in the infrastructure of banks.

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

EDB ErgoGroup: ITcompany established through the merger of the Ergo Group AS and EDB Business Partner ASA. The company is a key provider of ITservices to important members of the financial industry in Norway such as DnB NOR, the Sparebank 1-group and Norges Bank.

FNO (organisation): Finance Norway (FNO) is the trade organisation for banks, insurance companies and other financial institutions in Norway.

Mail giro: The payer sends a paper-based giro in an envelope directly to Nets Norway AS rather than delivering the form to his/her bank. The payment will be sent to NICS for clearing and settlement and information will be forwarded to the recipient's bank.

Nasdaq OMX Oslo NUF (company name): Central counterparty for settlement of the derivative of electricity prices. (Previous name: Nord Pool Clearing ASA).

NBO: Norges Bank's settlement system in which banks can settle claims and liabilities with other banks through their accounts in Norges Bank. The NBO comprises both gross and net settlement facilities.

NBO online: System which provides real time information on banks' balance, liquidity and transactions in payment queues in NBO.

Nets: Nordic company delivering payment infrastructure established through a merger including BBS and the corresponding Danish company PBS Holding.

Nets Norway Infrastructure: Subsidiary of Nets that is responsible for deliveries to NICS.

NICS: Norwegian Interbank Clearing System is the clearingsystem for transactions denominated in Norwegian kroner. It is used by all banks that are part of the industry's common infrastructure for the distribution of payments. Cleared positions in NICS are settled in NBO and other settlement systems.

NICS Gross: Transaction Format for transactions that are sent from one by one via NICS to NBO for settlement.

NICS Net: Transaction format for transactions to be cleared before settlement on a net basis at set times of day in NBO.

Nord Pool Clearing (Company name): Central counterparty to derivatives transactions, where electricity prices are the underlying instrument. After acquisition and a merger the activity is now performed by Nasdaq OMX Oslo NUF.

NOS Clearing (Company name): Central counterparty to derivatives transactions for which shipping freightrates, salmon and power contracts are the underlying instruments.

Oslo Clearing (Company name): The principal central counterparty to equities transaction on Oslo Børs and to derivatives transactions with securities as the underlying instrument.

VPO: The securities settlement system in Norway.

VPS (Company name): VPS ASA is the securities register in Norway with holding accounts for the individual investor. VPS operates the VPO that settles the securities trade between securities firms in a DvP net settlement. VPS also provides for the individual bank account transfers to investors that are processed (after the VPOsettlement) by NICS.

Guide to the tables

The following section provides an explanation of sources for figures, data quality, calculation methods for averages and further details concerning the contents of the tables. Statistics that concern general data, means of payment in Norway, clearing and settlement have been prepared by Norges Bank, while the other statistics have been prepared by Statistics Norway (SSB).

Some data that appeared in the Annual Report on Payment Systems in 2009 have been revised in the current report.

Sources:

- Information about cash in Norway: Norges Bank.
- Information about clearing and settlement: Norges Bank, NICS Operations Office, SWIFT and DnB NOR.
- General data: Statistics Norway and Finanstilsynet (Financial Supervisory Authority of Norway).
- Information about giros, cheques, payment cards, ATMs and payment terminals: Finance Norway (FNO), Nets Norway AS, EDB Business Partner ASA, Skandinavisk Data Center AS, Terra-Gruppen AS, Nordea Bank Norge ASA, DnB NOR Bank ASA, Fokus Bank NUF, SEB Merchant Banking AB Oslo branch, Cultura Bank, SEB Kort AB, Ikano Bank SE Norway branch, Handelsbanken, Citibank International plc Norway branch, Elavon Financial Services Norway branch, American Express Company AS, GE Money Bank, Entercard Norge AS, Statoil Norge AS, ST1 Norge AS, Uno-X Energi AS and A/S Norske Shell.
- Information about withdrawals from ATMs using domestic credit cards and payment cards from international card companies was provided by the owners of the ATMs until end-2005. Information as from 2006 has been provided by card issuers and acquirers.

- Information about cross-border payments other than those that are executed with payment cards: Register of Crossborder Transactions and Currency Exchange (Norwegian Directorate of Customs and Excise).

- Information about banks' income from payment services: Database for public reporting of financial statements from banks and finance companies (ORBOF database, Statistics Norway)

- Prices for retail payment services as from 2009 are based on price information for 99 banks from www.finansportalen.no. These banks had 99% of the market measured by sight deposits at the end of November 2010. Prior to 2009, prices for retail customers, prices for corporate customers and cross-border payments are collected from price lists and a survey of 24 banks. These banks had 85% of the market measured by deposits. All prices are as at 1 January.

Comments on individual tables:

Table 6 – Number of agreements

- The number of agreements to offer and receive electronic invoices concerns agreements linked to the eFaktura service for retail customers (eFaktura B2C).

Table 7 – Number of issued cards, number of functions in issued cards and number of terminals.

- The number of physical cards is lower than the number of functions in the cards. This is due to the large number of combined cards (i.e. cards with more than one function: see definition list).

- The statistics for the number of payment terminals only include EFTPOS terminals that accept BankAxept cards. The number of locations with payment terminals refers to each shop, each post office branch, etc.

Tables 9 and 13 – Debit and credit transfers (giro)

- Miscellaneous other electronic credit transfers are not included in the statistics prior to 2002.

- The figures for miscellaneous giros registered in banks include both cash payments and account debits. Figures for cash payments in 2005 have been in part estimated by Norges Bank and BBS. Turnover figures for company terminal giros to end-2002 and money orders to end-2005 are in some cases based on estimates from Norges Bank. Figures for online banking also include payments made by mobile phone/mobile banking.

Tables 10a and 14a – Payment cards. Use of cards

- The figures for cashback withdrawals are for cashback in EFTPOS terminals that accept BankAxept cards, whereas the figures for other cash withdrawals are for cash withdrawals at the counter and from ATMs.

- The figures for the use of Norwegian cards abroad and foreign cards in Norway refer primarily to payment cards issued by international card companies, including Visa, Eurocard, MasterCard, Diners, American Express and JCB cards (Japan Credit Bureau). There is some uncertainty attached to the figures for cards used across national borders in 2004–2006. As from 2006, the use of BankAxept cards in Norwegian-owned EFTPOS terminals abroad has been included in figures for the use of Norwegian cards abroad. In 2010, 5% of transactions and 3% of the turnover constituted such use of cards abroad.

Tables 10b and 14b – Payment cards. Use of terminals

- The statistics for the total use of domestic terminals give an overview of the use of Norwegian and foreign cards, including the oil companies' cards in ATMs and payment terminals.

- The figures for goods purchases in EFTPOS terminals that accept BankAxept cards prior to 2001 do not include the use of domestic credit cards and payment cards issued by international card companies in terminals owned by entities other than banks and oil companies.

- Figures for cashback to end-2006 are based on estimates from BBS and Norges Bank. The lower figures as from 2006 refer to registered cashback only.

- Figures for the use of payment cards in other Norwegian payment terminals refer to domestic credit cards and international payment cards in EFTPOS terminals that do not accept BankAxept cards and the use of various payment cards over the Internet.

Tables 11 and 15 – Cross-border transfers using SWIFT, foreign currency cheques, foreign currency giros, MoneyGram and Western Union

- The statistics refer payments registered in the Register of Crossborder Transactions and Currency Exchange in 2006 – 2008. There is some uncertainty attached to the figures for 2006.

Tables 21-24 – Prices for domestic payment transactions and cross-border transactions, cash withdrawals and receipt of payments

- Prices for retail payment services (Table 21) are based on price information from www.finansportalen.no. There are two average prices for each service, one for customers that participate in loyalty schemes and the like, and one for customers not participating in such schemes. Average prices are calculated by weighting prices for each bank based on that bank's share of sight deposits. When a bank has more than one loyalty scheme, the median of these prices is used to calculate the average price for all banks for services in loyalty schemes.

- Prices for corporate customers are collected from price lists on the Internet, and prices for cross-border payments are taken from surveys. Prices relate only to customers outside loyalty schemes or who do not otherwise receive discounts. Average prices are calculated by weighting prices for each bank based on the bank's share of deposits in current accounts.

- The price of a mail giro refers to each form sent. Postage is an additional charge.

- Prices for receipt of direct debit (AvtaleGiro) payments refer to receipt of payment without notification.

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

Standard symbols in the tables

: Incomplete information/will not be published

\- Zero

0 Less than (the absolute value of) 0.5 of the unit used

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