NORGES BANK

Annual Report on Payment Systems

2012

May 2013

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NORGES BANK

Norges Bank's responsibility and annual reporting

Norges Bank's responsibility in relation to payment systems

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 provides a supply of payment instruments in situations where other payment instruments are not available, and
- by monitoring important developments in the payment system and identifying ways to improve the system's resilience and efficiency.

In addition, the Payment Systems Act gives Norges Bank responsibility for the licensing and supervision of systems for clearing and settlement of interbank money transfers (interbank systems). Interbank systems are required to be designed and operated to support the stability of the financial system. Norges Bank supervises system owners' compliance with the terms of the licence and may impose additional requirements 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, while Finanstilsynet has the primary responsibility for overseeing systems for retail payment services, including supervising the technical security and operational stability of systems for payment services. Finanstilsynet publishes an annual analysis of risk and vulnerability, highlighting important issues related to the use of ICT in the financial sector. Norges Bank and Finanstilsynet are in regular contact and exchange information.

Annual Report on Payment Systems

This report is published as part of the work to promote robust and efficient payment systems. The Executive Board has discussed the *Report* and taken note of its conclusions. The *Report* consists of two main sections. Section 1 discusses developments in retail payment services, while Section 2 addresses interbank systems. The two sections reflect Norges Bank's different responsibilities in the two areas:

- Section 1 analyses developments in retail payment services and assesses whether and how efficiency can be improved. Except for work on cash payments, Norges Bank has no instruments focusing on systems for payment services other than publishing analyses and providing advice.
- Section 2 reflects Norges Bank's tasks and instruments for overseeing and supervising interbank systems and other financial infrastructure. This work focuses on security and consequences for financial stability.

The *Report's* target groups include other government authorities, owners and operators of payment systems, financial institutions and their industry organisations and the public. To contribute to empirical knowledge on payments and payment systems, the tables and data from charts are made available in machine-readable format.

Norges Bank
Oslo 2013

Address: Bankplassen 2
Post: P.O. Boks 1179 Sentrum, N-0107 Oslo
Telephone: +47 22 31 63 83
Telefaks: +47 22 31 64 16
Reg No: 0629/7
E-mail: central.bank@norges-bank.no
Website: http://www.norges-bank.no

Governor: Øystein Olsen
Deputy Governor: Jan F. Qvigstad

Chief Editor: Øystein Olsen
Design: Burson-Marsteller
Typography: Norges Bank
Production: 07 Media
The text is set in 10.5 point Times New Roman / 9 point Univers

ISSN 1503 – 8629 (online)

Contents

Main points

A well-functioning economy requires the swift and secure execution of payments and other financial transactions at low cost. Payment system failure would bring large segments of the economy to a halt. Since the economic cost of a system failure would be far higher than the cost to the system's owners, it is imperative that strict requirements are imposed on owners to limit risk in the payment system. Norges Bank is responsible for promoting an efficient payment system and supervising and overseeing the financial infrastructure.

An efficient payment system

The Norwegian payment system is cost-efficient, partly as a result of the widespread use of cards. Payments can generally be executed swiftly and securely. In Norges Bank's assessment, payment services in Norway are efficient in comparison with other countries.

There is nonetheless room for improvement. Even though considerable gains have already been realised through the transition from paper-based to electronic systems, there is still a potential for improving cost-efficiency by increasing the use of electronic invoicing (e-invoicing).

At the same time, it is important to counteract negative impacts on the payment solutions that are efficient today. The Norwegian debit card system BankAxept has a high market share and low costs per transaction. The use of international payment cards is nevertheless increasing, despite considerably higher costs per transaction. Card systems have somewhat different features, which may entail some differences in their pricing. However, it would be a disadvantage from the perspective of cost efficiency for higher-cost payment solutions to gain ground. As a result of competition among banks, payment card use – whether BankAxept or international cards – is often free or available at very cheap rates. Merchants, on the other hand, have to pay high interchange fees when customers use international payment cards. It is essential for cost-efficient resource use that users are charged fees that reflect the cost of producing the services. This might be the case if merchants take advantage of their right to price payment solutions in line with the cost they incur when customers use these solutions.

There is little payment instrument fraud in Norway, but the risk environment is constantly changing. In other countries, electronic payment fraud is a growing problem. It is important, but also a challenge, for banks to maintain confidence in payment solutions. Finanstilsynet is reporting an increasing number of Trojan attacks on Norwegian online banks. Losses related to such attacks have increased, but remain fairly small.

There is little counterfeiting of Norwegian banknotes. This may change, however, when other countries enhance their banknotes' security features. To ensure that it will be difficult to counterfeit Norwegian banknotes also in the future, Norges Bank's Executive Board decided in October 2012 to launch a project to develop a new banknote series.

Confidence in a payment instrument does not only depend on the direct risk of losses, but also on secure and stable operations. Many banks have outsourced their IT systems and several banks use the same service provider. Payment systems are vulnerable to operating problems in a service provider's systems and a disruption can adversely affect a large number of customers.

Although the BankID online identification and signature service was developed for banks, it can now also be used to log in on a number of public service portals and for online purchases from non-financial firms. As the use of BankID becomes more common, the consequences of any fraud or solution instability will become more serious. BankID is an important element of the Norwegian payment system and banks must maintain a high level of security for this solution.

In Europe, there is a long-standing initiative to integrate national payment systems, known as the Single Euro

Payments Area (SEPA). SEPA sets forth standards for the format of direct debits and credit transfers. To increase the use of SEPA solutions, deadlines have been set for migration to SEPA schemes from national solutions. For EEA countries outside the euro area, the deadline has been set at 31 October 2016. This means that, as from that date, domestic and cross-border payments in EUR carried out by Norwegian banks must use SEPA schemes. Banks must ensure their systems can support the required SEPA message format.

Resilient financial infrastructure

Financial market infrastructures comprise various systems for recording, clearing or settling payments, securities and derivatives trades or other financial transactions. In its oversight of financial market infrastructures, Norges Bank attaches considerable importance to international recommendations. In April 2012, the Committee on Payment and Settlement Systems (CPSS) under the Bank for International Settlements (BIS) and the International Organization of Securities Commission (IOSCO) published new principles for the regulation, supervision and oversight of financial market infrastructures. Norges Bank has requested operators of Norwegian systems affected by these recommendations to submit self-assessments on the basis of the new principles in the course of 2013.

The operational stability of interbank systems was generally satisfactory in 2012. The most important change in interbank systems in 2012 was the introduction of a new (fourth) net settlement for mass payments and the introduction of caps for private settlement banks' exposure to the banks they serve. These changes, which improved efficiency in the system and reduced private settlement banks' credit risk, were implemented without compromising operational stability.

In 2012, affected banks bolstered their preparedness to change settlement bank by testing contingency plans and by authorising NICS Operations Office to expedite such a change. Analyses in this *Report* show that most banks participating in net settlements indirectly through a private settlement bank could have met its obligations if in an emergency they had to settle transactions directly in Norges Bank. Banks participating directly in net settlements in Norges Bank have considerable available liquidity relative to their positions. They would therefore normally have no problem meeting their obligations.

Disruptions at one bank may impose high costs on other banks in the system. If one bank in the system is unable to send outgoing transactions, other banks will not receive transactions that they were expecting. Infrastructure participants are working to raise banks' awareness of the impact of disruptions, including through self-certification and self-declaration arrangements.

Oslo Clearing is a central counterparty (CCP) for equity and equity derivatives trades on Oslo Børs. Approximately half of Oslo Clearing's clients are from EU member states. On 4 July 2012, the EU adopted the European Market Infrastructure Regulation (EMIR), which covers over-the-counter derivatives, CCPs and trade repositories. For the time being, EMIR has not been integrated into the EEA Agreement, since it could be at variance with the Norwegian Constitution. For Oslo Clearing to continue to provide services to banks in the EU, the company will require European Securities and Markets Authority (ESMA) recognition as a third-country CCP. The application deadline is currently set at 15 September 2013. ESMA recognition requires amendments to Norwegian legislation to harmonise it with EMIR.

The EU is currently establishing a number of new regulations and directives on financial markets and financial infrastructure. Their objectives include more effective competition in financial markets and greater transparency with regard to trades and prices. For Norwegian market participants, this effort will likely increase market resilience and lower risk, while stricter reporting requirements and mandatory use of CCPs may also increase costs.

1. Retail payment services

Efficient payment services are essential to a well functioning economy. In addition to meeting customers' needs, payments should be executed swiftly, securely and at low cost. By these criteria, Norwegian payment services compare well internationally. The efficiency of the Norwegian payment system has increased in recent years.

1.1 Use of payment instruments

There are two main types of means of payment: cash and bank deposits (bank accounts).[1] Cash represents a claim on the central bank, while bank deposits represent claims on banks.

Means of payment can be accessed by using a payment instrument. Payment cards and credit transfers are examples of payment instruments that provide access to bank accounts. Cash can be used without recourse to any other instrument and is therefore both a means of payment and a payment instrument.

Cash

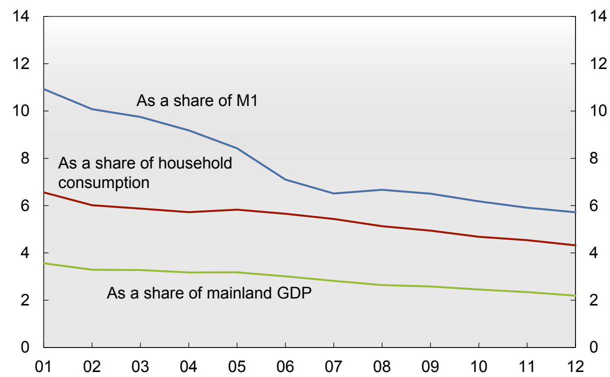
Norges Bank has a duty to issue banknotes and coins and thereby ensure that society has access to cash as a means of payment. Norges Bank functions as a wholesaler, while banks function as retailers in the cash distribution system. In Norway, banks have the exclusive right to accept customer deposits. In Norges Bank's view, this also gives them the responsibility for making these deposits accessible to customers – not only as funds in a bank account, but also in the form of cash if customers so wish. Demand for cash is determined by users. Payment instruments should be chosen for the right reason: bank charges, for example, should be appropriate. With regard to cash, charges should therefore reflect the cost to banks and other parties supplying cash to the public.

The share of cash as a means of payment available to the public (M1) continue to fall and was just over 6% in 2012 (see Chart 1.1), which is low in an international context (see Chart 1.2). The average value of cash in circulation came to NOK 51bn in 2012 and has remained virtually unchanged in recent years.

Users can obtain cash at banks, ATMs and at many point-of-sale (POS) terminals. The number of ATMs per inhabitant has declined somewhat since 2008. The number of cash withdrawals from ATMs decreased by 7% between

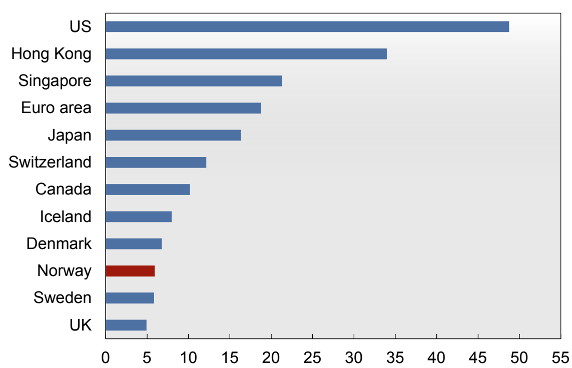
1 In addition to electronic money (e-money) (see box on page 17).

Chart 1.1 Value of cash in circulation as a share of means of payment (M1), household consumption and mainland GDP. Percent. 2001 – 2012



Sources: Statistics Norway and Norges Bank

Chart 1.2 Cash as a share of means of payment (M1) in selected countries. Percent. 2011



Sources: Norges Bank, ECB, BIS/CPSS and Seðlabanki Íslands

2011 and 2012, as did cash withdrawals from POS terminals, which declined by 8% between 2011 and 2012. The number of POS terminals per inhabitant continued to increase in 2012 (see Chart 1.3).

The figures above indicate that cash usage has declined. Nevertheless, cash plays an important role as a means of payment, making payment transactions easy and efficient for customers. Cash has also proved to be very important in situations where funds in bank accounts cannot be accessed. When bank employees warned of a possible strike in summer 2011, the volume of cash in circulation increased by NOK 1.7bn in nine days.[2]

Card payments

In 2012, payment card transactions executed in Norway totalled 1.63bn, an increase of 8% on 2011 and equivalent to 323 transactions per inhabitant. The rise in turnover was more moderate, with an increase of 6% since 2011. The average value of goods purchases using payment cards was NOK 455 in 2012, down from NOK 466 in 2011. Card usage in Norway is high compared with other countries (see Chart 1.4).

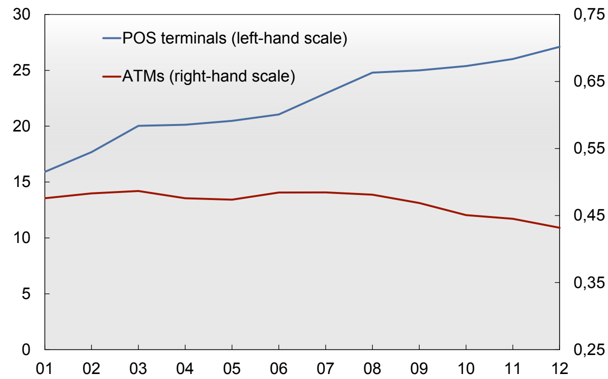
There has also been a sharp increase in online purchases using cards. In 2012, NOK 53bn in online purchases were made using cards issued in Norway, an increase of 34% on 2011. There were 75m online transactions using Norwegian cards, an increase of 35% on 2011.

The Norwegian debit card system BankAxept has a high market share (see Chart 1.5). The market share has fallen from 80% to 71% over the past ten years.

BankAxept is an efficient payment solution for POS transactions, with a low cost per transaction (Gresvik and Haare, 2009). Banks' earnings from BankAxept have also been low. As a result, banks have shown an increasing interest in issuing international payment cards, which provide higher profits for banks, but also higher processing costs.

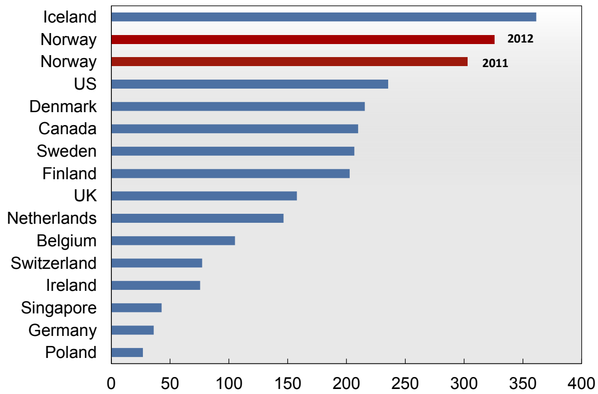
2 See Norges Bank (2011a) for more information.

Chart 1.3 Number of point-of-sale (POS) terminals and ATMs. Per thousand inhabitants. 2001 – 2012



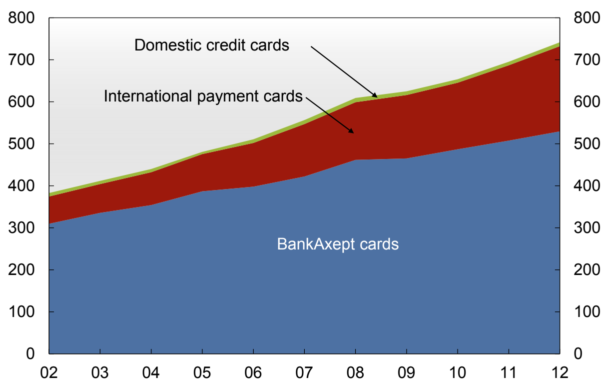
Source: Norges Bank

Chart 1.4 Number of card transactions per inhabitant. Payments and cash withdrawals. 2011



Sources: Norges Bank, ECB, BIS/CPSS and Seðlabanki Íslands

Chart 1.5 Use of payment cards.[1)] In billions of NOK. 2002 – 2012

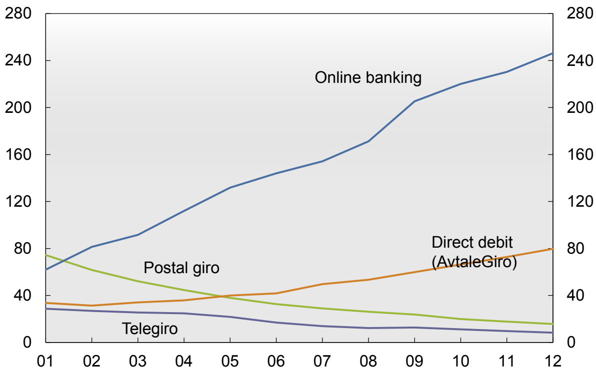


1) Use of payment cards issued in Norway, both in Norway and abroad.
Source: Norges Bank

A bank issuing an international payment card (issuing bank) receives a fee (interchange fee) from the merchant's bank (acquiring bank) every time an international payment card is used. In order to make a profit on the transaction, the acquiring bank must charge the merchant a higher fee than it has to pay itself. Merchants pay far more to banks for each payment using an international payment card than for each payment using BankAxept.

Up to 2009, merchants were bound by regulations preventing them from charging fees to customers to cover all or part of the costs to the merchant of international payment card use. In order to cover the costs, the merchants had to increase prices for all their goods and services. With the adoption of a statutory amendment in 2009, merchants can now charge fees to customers that use high-cost cards, or offer a discount to customers using less costly alternatives. So far, very few merchants have taken advantage of this right. Higher fees for using high-cost cards would have given users a more correct indication of the cost of the different payment instruments.

Chart 1.6 Credit and direct debit transfers (retail customers). Millions of transactions. 2001 – 2012



Source: Norges Bank

Invoice payments

Close to 430m online payments were made in 2012, 14% more than in the previous year. The increase is partly the result of strong growth in mobile banking. Online bank payments account for 84% of all credit transfers. Finance Norway's online banking survey (Daglegbankundersøkinga[3]) found that 82% of the population over the age of 15 used online banking in 2013.

The number of paper giros used by businesses and retail customers fell by 15% between 2011 and 2012 and these giros are now used in 3.5% of invoice payments.

Direct debits (mostly AvtaleGiro) increased by 9% on the previous year, but only account for 13% of all invoice payments. In order to set up direct debit payments, both the payee and the payer must have an agreement with their bank. At end-2012, the number of direct debit agreements between customers, businesses and banks was approximately 14.4m, an increase of 9% on 2011.

Finance Norway's online banking survey found that 38% of users made invoice payments by accessing their bank via their mobile device or by using an application downloaded to their mobile device, up from 24% in 2012.[4]

Invoices can be sent on paper by post or direct to the online bank as an electronic invoice (e-invoice). Payment costs can be reduced if more invoices are issued electronically (see Norges Bank (2011b)). In 2011, the Ministry of Government Administration, Reform and Church Affairs instructed all government agencies to require e-invoices and credit notes from their suppliers in contracts entered into after 1 July 2012.[5] Work is in progress to establish a statutory basis for an e-invoicing requirement for suppliers to government agencies. An e-invoicing requirement for suppliers will probably also boost the use of e-invoicing in the private sector.

3 Finance Norway and TNS Gallup (2013).

4 In 2013, the question was "Which banking services do you access via your bank's mobile banking service or mobile app?", while in 2012 customers were asked "Which banking activities do you carry out via a phone without speaking to a bank employee?"

5 Ministry of Government Administration, Reform and Church Affairs (2011).

1.2 Fees charged for payment services

Bank charges and fees

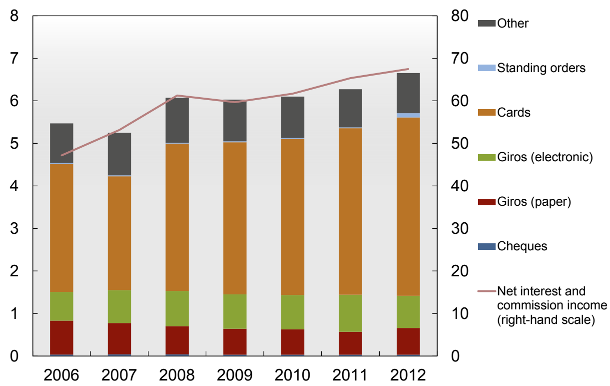
Loyalty scheme customers and non-loyalty scheme customers pay different bank charges and fees. In loyalty schemes, card holders are given discounts if they open particular accounts or choose a specific service. The schemes are often designed to reward cardholders who opt for several offers within the same corporate group. This method of combining offers can reduce price transparency, making it more difficult for customers to compare charges across banks and across the different services offered by a bank. Finansportalen.no, an online consumer advice website run by the Consumer Council of Norway, provides information on loyalty scheme terms and conditions.

The average annual fee for BankAxept cards combined with the international VISA card was at the beginning of 2013 about NOK 219 for loyalty scheme cardholders and NOK 268 for non-loyalty scheme cardholders. This is an increase of 5% and 3% respectively on the previous year. The average charge for goods purchases using BankAxept at the beginning of 2013 was only NOK 0.02 for loyalty scheme cardholders and approximately NOK 1.50 for non-loyalty scheme cardholders.

International payment card charges vary. The fee paid by the merchant to the acquiring bank (the merchant service charge) is set by negotiation between the two parties and will therefore vary from merchant to merchant. A working group appointed by the Ministry of Finance found that the merchant service charge for MasterCard transactions varied between 1.05% and 1.45%.[6]

Bank charges for invoice payments vary considerably across the different forms of payment. The considerable variation in bank charges reflects the cost of producing the services (see Gresvik and Haare (2009)). The cost of electronic services such as online banking, direct debit (AvtaleGiro) and e-invoices is far lower for banks than paper-based services, such as over-the-counter giro payments. Charges for paper-based payment services increased

Chart 1.7 Banks' income from payment services (left-hand scale) and net interest and commission (right-hand scale). In billions of NOK. 2006 – 2012



Source: Norges Bank

through 2012. The standard charge for postal giro payments made by non-loyalty scheme cardholders rose by 9% to around NOK 9 at the beginning of 2013. For over-the-counter cash payments, the charge has remained stable at NOK 80. Online payments are free for loyalty scheme cardholders, while the standard charge for online payments made by non-loyalty scheme cardholders is about NOK 2.

Income

Banks' income from payment services in 2012 totalled close to NOK 6.7bn, an increase of about 0.4bn since 2011 (see Chart 1.7). Income from payment services has tracked developments in bank income from other sources. Over half of banks' income from payment services derives from payment cards.

1.3 Security

Cash

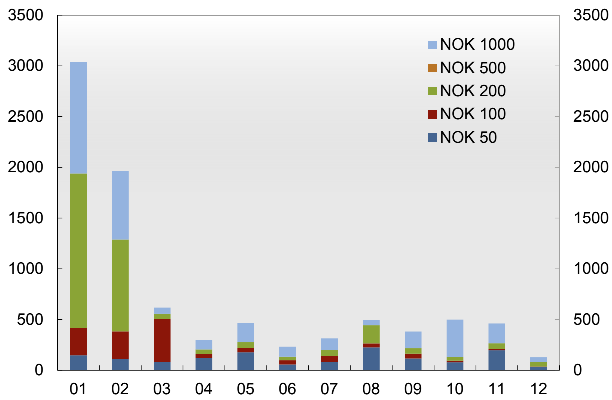
Counterfeiting is a problem for central banks in many countries. In Norway, the number of counterfeit banknotes remains low (see Chart 1.8 and box on page 13). In 2012, 171 counterfeit banknotes were registered, which is very low. This is less than two counterfeit banknotes per million in circulation, while the corresponding figure for euro area countries is 36.[7] Counterfeit Norwegian banknotes are generally of very poor quality and are easily identified.

6 Payment card project group (2012).

7 ECB (2013).

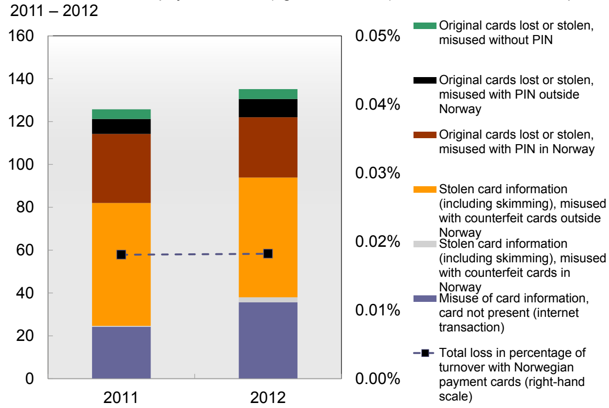
Even though there is a limited number of counterfeit banknotes in circulation, the number may rise when other countries introduce enhanced security features in their banknotes. Norges Bank's Executive Board decided in October 2012 to launch a project to develop a new banknote series. One of the main objectives is to ensure that Norwegian banknotes remain resistant to counterfeiting. For Norwegian banknotes to function effectively as a payment instrument, the public must have confidence that they are genuine. The new banknote series will be the eighth consecutive series to be issued after the krone was introduced as the monetary unit in 1875.

Chart 1.8 Number of seized counterfeit notes. 2001 – 2012



Source: Norges Bank

Chart 1.9 Loss from use of payment cards (left-hand scale) and loss in percent of total turnover from use of payment cards (right-hand scale). In millions of NOK and percent. 2011 – 2012



Sources: Finanstilsynet and Norges Bank

Cards and online banking[8]

Card fraud losses increased from NOK 125m in 2011 to NOK 135m in 2012 (see Chart 1.9). This is about 0.02% of total turnover for Norwegian payment cards. The losses were primarily due to misuse of counterfeit cards outside Norway, with credit card information stolen by, for example, "skimming" from the card's magnetic stripe. There are few card fraud losses of this type in Norway as Norwegian POS terminals and ATMs register cards by reading a chip. Chips are more difficult to counterfeit than magnetic stripes and all Norwegian payment cards have been chip cards since the end of 2011.

Fraud losses where card information is used without the card being physically present came to NOK 36m in 2012.

Losses from online banking fraud have been far lower than from card fraud, but increased markedly from NOK 4m in 2011 to NOK 8.4m in 2012. The reason for the increase is a number of Trojan attacks from abroad.[9] Potential losses, as measured by attacks or fraud attempts that were prevented, are considerably higher. This trend is not unique to Norway and can also be observed in other European countries.

BankID is a personal electronic ID for online identification and signature. BankID has so far primarily been used to log on to an online bank and carry out payments. As from November 2012, as a result of a joint project involving BankID and the Agency for Public Management and eGovernment (DIFI), BankID can be used to log in on a number of public service portals. BankID is also used by many non-financial private firms. Being able to use BankID in a wide range of contexts is probably regarded by users as positive. But with the increase in the use of BankID, there is also an increasing risk that users mistakenly reveal security codes to someone unlawfully posing as a BankID merchant.

BankID for computers is based on Java software. When the new version of Java was launched at the end of 2012, a flaw was introduced which made computers using Java vulnerable to hacking. BankID Norge is working on al-

8 This section is largely based on Finanstilsynet (2013).

9 A Trojan is a type of malware allowing unauthorised access to the target's computer. Trojans are used by criminals to gain access to the identity and password of the computer's owner.

ternative solutions and in April 2013 plans were announced to develop a new version of BankID, BankID 2.0. The new version will not be Java-based and will be available on all platforms.

Concentration risk

Many banks have outsourced system operations to external service providers (see for example Norges Bank (2011b)), some of which deliver services to a number of banks. An error arising in one of these service providers can thus affect several banks. An example of this was the so-called Easter incident in 2011 (see Norges Bank (2012)).

Banks report incidents to Finanstilsynet (Financial Supervisory Authority of Norway). Finanstilsynet analyses the incidents and weights them by their impact in terms of the extent and duration of the incident (see Chart 1.10). The chart does not show the size of the losses arising during the incident, but can nonetheless provide an impression of the impact of downtime in banking services. Banking service availability was higher in 2012 than in 2011.

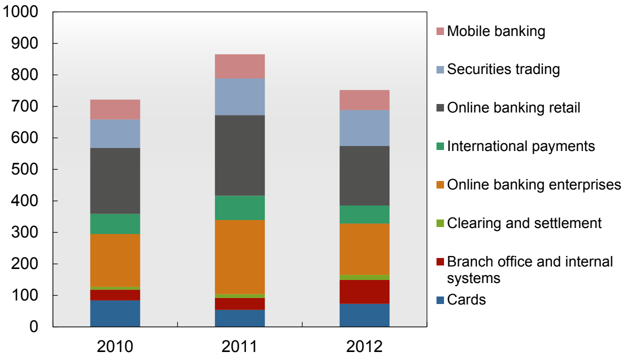
1.4 Single Euro Payments Area (SEPA)

The Single Euro Payments Area (SEPA) is a European initiative for a single system of payment solutions. The objective is to create a single European platform for payment systems instead of a variety of national systems operating with different formats and bank charges. The basis for SEPA was laid down in an EU regulation in 2001, which states that banks must charge the same for cross-border payments in EUR within the EEA as it charges for domestic payments in EUR. The regulation regulates charges for payments in EUR. The regulation has been introduced in Norway and will apply to payments in EUR to and from Norway. It will not apply to NOK denominated transactions.

In addition, SEPA requires that the same format must be used for all direct debits and credit transfers, independent of any previous national format. The International Bank Account Number (IBAN) is the required standard for bank account identification and ISO 20022 XML is the message standard.

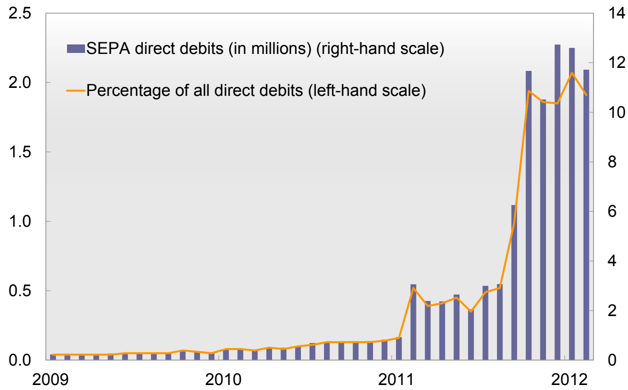
Despite formal support for SEPA in the EU, it has proved difficult to persuade bank customers to move away from national solutions, and the volume of transactions processed by SEPA solutions is still low. The use of SEPA solutions for direct debits has been minimal, at around 2% of total transactions at end-2012 (see Chart 1.11). For credit transfers, the SEPA format was used in around 30% of transactions at end-2012, compared with around 10% at end-2010 (see Chart 1.12). There are nonetheless considerable national variations, and in some countries, such as Finland and Slovenia, SEPA solutions are used in virtually all transactions (see Chart 1.13).

Chart 1.10 Downtime in banking services. Reported incidents weighted by impact[1]. 2010 – 2012



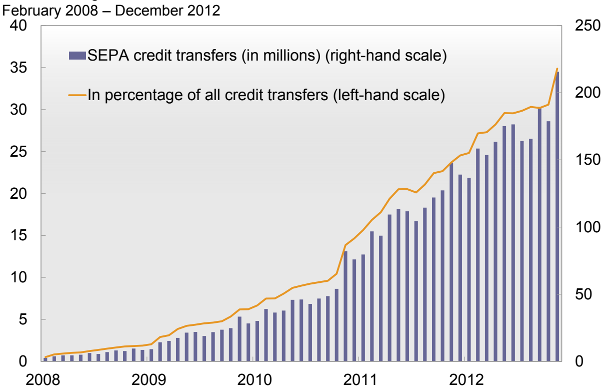
1) The impacts are estimated on the basis of the number of affected users, how long the incident lasted and the number of services affected.
Source: Finanstilsynet

Chart 1.11 Migration to the SEPA solution for direct debits. November 2009 – December 2012



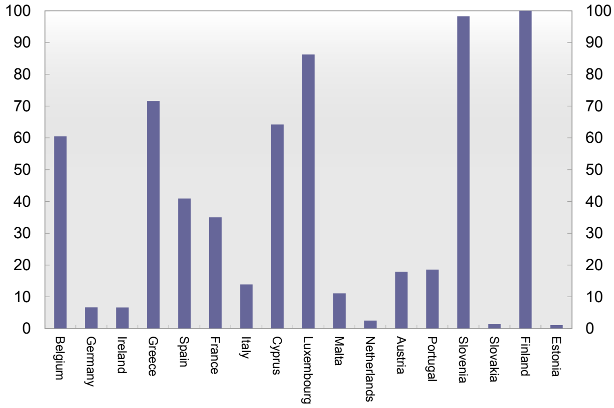
Source: ECB

Chart 1.12 Migration to the SEPA solution for credit transfers. February 2008 – December 2012



Source: ECB

Chart 1.13 Migration to the SEPA solution for credit transfers by country. Percent. 2012 Q3



Source: ECB

To increase the use of SEPA solutions, deadlines have been set for migration to the SEPA Direct Debit and SEPA Credit Transfer schemes. 1 February 2014 is the deadline in the euro area and 31 October 2016 for non-euro area countries. This means that, as of the latter date, domestic and cross-border payments in EUR carried out by Norwegian banks must use the SEPA schemes. Banks must ensure their systems can support the required SEPA message format. Banks must assess whether the SEPA formats should become a market standard and whether they should also be used for payments in NOK.

SEPA also requires payment cards to be EMV-compliant (chip and PIN cards), which are already standard in Norway. EMV cards are now used in more than 80% of all card transactions in the EU.

Country comparison of payment system efficiency

An efficient payment system operates quickly, safely and at low cost. This box compares the efficiency of payment systems in Norway, Sweden, Denmark, the UK, Australia and the euro area[1]. The payment systems in these countries are extensive, and although the statistical basis varies from one country to another, it provides a starting point for an assessment of relative efficiency. In comparison with the other countries in the sample, Norway's payment system is on the whole efficient, particularly with regard to cost efficiency.

Costs and cost efficiency

Cost-efficiency can be measured by the cost of payment services as a share of GDP. The cost efficiency of the Norwegian payment system is high compared with other countries.

1 The data apply to parts of the euro area as statistics for the euro area as a whole are not available.

According to Norges Bank's 2007 cost survey, the cost of the Norwegian payment system was calculated at about 0.5 percent of GDP.[2] This is low compared with Sweden, Denmark and the euro area (see Chart 1). One important reason for the lower cost in Norway is extensive card use and a correspondingly limited use of cash (see Chart 2).

Speed

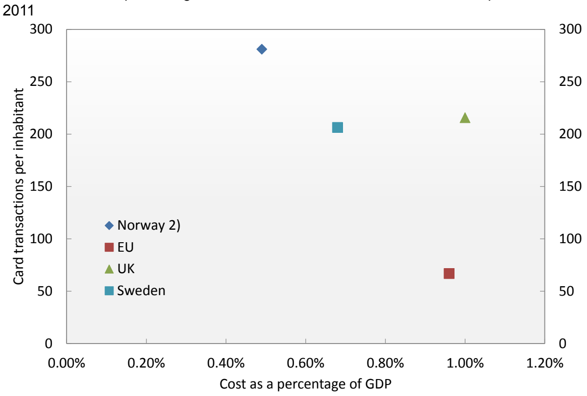
Speed can be measured as the time that elapses from initiation of a payment transaction until the amount has been credited the payee's account. Under the Norwegian debit card system BankAxept, merchants are credited before the banks involved receive settlement. The amount is reserved on the payee's account as soon as the point of sale terminal authorises the payment.

2 A new survey of costs in the payment system will be conducted by Norges Bank in 2013. The results will be published in 2014.

For debit cards, payment time from initiation of the payment transaction until it is authorised is thus the most relevant measure of payment speed. Payment time in Norway is 17 seconds (see Chart 3). This is clearly faster than in the euro area, but somewhat slower than in the UK.

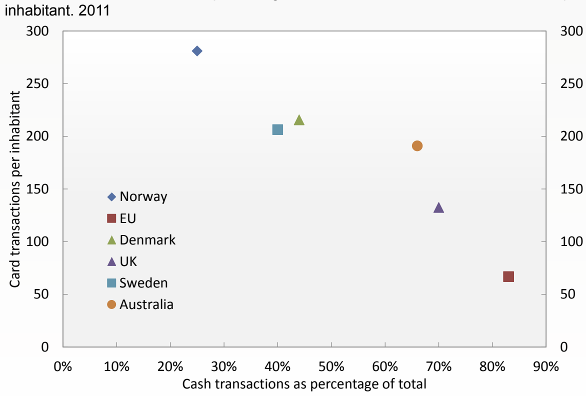
For online credit transfers, the payee receives a payment only when the payer's bank has settled with the payee's bank. There are four daily net clearings in Norway with associated interbank settlements, which is relatively frequent in an international context. Of the countries in the sample, only Sweden has as many settlements. Sweden also has a system in which payments are settled with finality in real time, i.e. instantaneous payments. A similar solution is under development by Norwegian banks (see page 24).

Chart 1 Cost as a percentage of GDP[1)] and number of card transactions per inhabitant. 2011



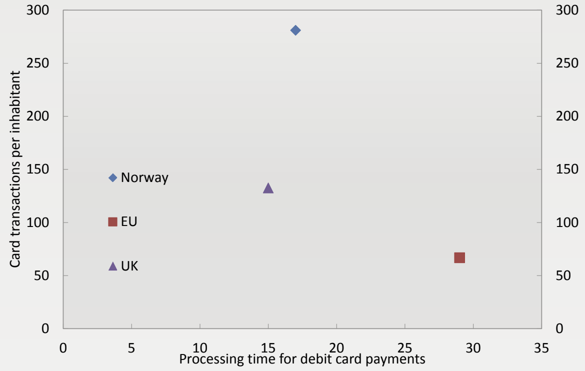
1) Cost of payment services as a percentage of GDP.
2) Cost data from 2007.

Chart 2 Cash transactions[1)] as percentage of total and number of card transactions per inhabitant. 2011



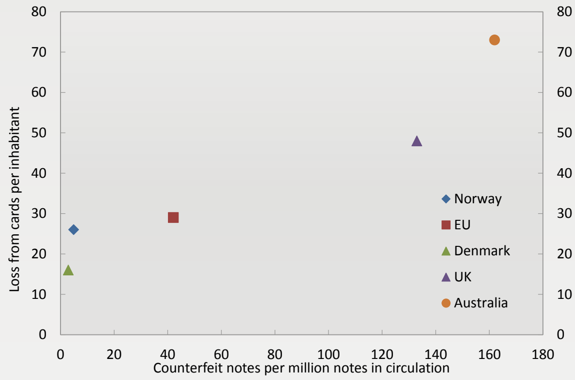
1) Percentage of transactions that are conducted at point-of-sale in cash.

Chart 3 Processing time[1)] for debit card payments and number of card transactions per inhabitant. 2011



1) From the moment payment is initiated until it is authorised (in seconds).

Chart 4 Counterfeit notes per million notes in circulation and losses from cards per inhabitant[1)]. 2011



1) Measured in NOK.

Security

For per capita losses on payment cards, Norway ranks second lowest after Denmark (see Chart 4). The share of counterfeit banknotes in Norway is also relatively low, although it is slightly lower in Denmark and Sweden.

Developments in Norway over time

The efficiency of the Norwegian payment system has also improved over time. Some simple measures are shown in Table 2. The speed of payment transfers in particular has increased as a result of the increase in daily net settlements and will be further enhanced when banks' instantaneous payment system is in place. Disruptions in NICS[3] measured by error points have decreased considerably. Actual losses in payment systems are low. Losses on payment cards have fallen, partly because chips have been embedded into all Norwegian payment cards. However, Finanstilsynet reports that attacks on Norwegian online banks have increased (see Finanstilsynet (2013) and page 10)..

3 Norwegian Interbank Clearing System (for more details, see page 23).

Table 1: International comparison of payment system efficiency. 2011 data

	NO	EU[1]	DK	UK	SE	AUS
SECURITY						
Per capita losses on online banking (NOK)	0.82	-	0.04	4.83	-	-
Number of counterfeit notes per million inhabitants	122	1825	73	6051	59	781
Number of counterfeit banknotes per million notes in circulation	5	42	3	133	2	162
Per capita losses on cards (NOK)	26	29	16	48	-	73
COSTS/ECONOMY						
Costs as percentage of GDP	0.49 (2007)	0.96	1.00	Not calculated	0.68	Not calculated
Percentage of cash transactions at point of sale	25[2] (2007)	83	44	58	40	62 (2010)
SPEED						
Number of net settlements per day	4	varies	1	1 Settle-ment in BACS takes three days	4	1 processing time varies
Instantaneous payments	No (will apply from 2013)	In some countries	No	Yes	Yes	No (will apply from 2016)
Payment time in seconds						
• Cash	16	22				
• Debit card	17	29		14		
• Credit card	57	31		15		

1 The data apply to parts of the euro area as statistics for the euro area as a whole are not available.

2 Calculated on the basis of responses to a questionnaire used in connection with Norges Bank's 2007 survey of costs in the payment system. A different basis of calculation will produce different results.

Table 2: Trends in the Norwegian payment system. 2007 – 2012

	2007	2008	2009	2010	2011	2012
SECURITY						
Losses on cards (in millions of NOK)	181 FNO	200 FNO	215 FNO	200 FNO	126 FT and FNO	135 FT and FNO
Losses on online banking (in millions of NOK)				2.4	3.99	8.4
Counterfeit banknotes per million notes in circulation	3.5	4.3	4.0	4.7	4.9	1.3
Losses on cards in NOK per NOK million in sales[1]	457	449	462	400	231	227
COST EFFICIENCY						
Social cost as a percentage of GDP	0.49	-	-	-	-	Will be calcu-lated for 2013
Percentage of electronic payment services, by number of transactions	96.4	97.2	97.7	98.3	98.7	98.9
Percentage of paper-based payment services, by number of transactions	3.6	2.8	2.3	1.7	1.3	1.1
SPEED						
Number of net settlements per 24 hours	2	2	2	3 (from 24 Sep 2010)	3	4 (from 12 Oct 2012)
Disruptions in NICS measured in error points	60	23	38	31	21	9

1 Losses on payment cards per NOK million in sales using cards in Norway and abroad.

Sources: Australian Payments Clearing Association (APCA), Bank of England, Bank for International Settlements (BIS), Bankgirot, Danish Bankers Association, Danmarks Nationalbank, European Central Bank (ECB), Eurostat, Financial Fraud Action UK, Finance Norway, Finextra, Reserve Bank of Australia, Statistics Denmark, Sveriges Riksbank, UK Payments Council and Norges Bank.

New payment service providers

Norwegian customers have an increasing range of options for executing payment transactions, including standard payment cards, contactless payment cards and mobile phones. Payment services are being offered by various providers, such as banks, payment institutions and telecommunication providers. Many of these are recent entrants, among other reasons on account of the European Payment Services Directive from 2007. The aim of the Directive was to create a coherent legal framework in the EEA area and remove unnecessary legal barriers to market entry. However, competition is limited by the fact that institutions are subject to different regulatory frameworks.

This box provides an overview of the type of operators permitted to provide payment services in Norway, the services they are allowed to provide and the competition impacts of regulation. Undertakings not covered by Norwegian law, such as issuers of virtual currencies, are not included.

Different providers of payment services

Payment service providers will often obtain access to sensitive information, such as account details, information about a customer's financial situation or personal data. Moreover, considerable amounts of money may be involved. Hence, not just anyone may provide payment services, and the right to do so is regulated by the *Act relating to Financing Activities and Financial Institutions (Financial Institutions Act)*. Under Section 4b-1 of the Act, payment services may be provided by:

- Credit institutions (primarily banks)
- Payment institutions
- Electronic money (e-money) institutions
- Post office giro institutions[1]
- Norges Bank
- The Norwegian state and Norwegian municipalities and county authorities when not acting in their capacity as public authorities

In addition, telecommunication operators may execute payment transactions for a limited selection of goods

1 There are currently no post office giro institutions in Norway.

Table 1: Payment service providers

Type of institution	Some characteristics[1]	Key legislation
Credit institutions (banks and mortgage companies[2]	Deposits from users are stated in the balance sheet	Act relating to Savings Banks Act relating to Commercial Banks Act relating to Financing Activities and Financial Institutions
Payment institutions	Prohibited from taking deposits or other repayable funds[3] Client funds must be held in a separate account (client account) Not allowed to issue e-money	Act relating to Financing Activities and Financial Institutions Regulation relating to Payment Institutions
E-money institutions	Prohibited from taking deposits or other repayable funds[4] Client funds must be held in a separate account (client account)	Chapter 4c of the Act relating to Financing Activities and Financial Institutions Regulation relating to Electronic Money Institutions
Telecommunication providers	May only deliver value-added services traditionally accessed by telecommunication device[5] without authorisation as a payment institution or e-money institution	Section 11 (2) m of the Financial Contracts Act)[6]

1 The list does not contain an exhaustive overview of the characteristics of the various institutions' business activities. For example, payment institutions and e-money institutions are prohibited from granting credit, except to a limited extent in connection with the execution of a payment.
2 Mortgage companies may not accept deposits, only other repayable funds.
3 Section 3 (1) of the Regulation relating to Payment Institutions.
4 Section 4c-2 of the Act relating to Financing Activities and Financial Institutions.
5 Such access enables users to purchase value-added or content services for their mobile phones.
6 Corresponds to Article 3 l) of the Payment Services Directive.

or services. Institutions are subject to different laws and regulations according to their type (see Table 1).

Description of undertakings – form of business organisation and services provided

Banks

In Norway, most credit institutions are banks. Banks may take deposits from the public and grant credit. Traditionally, banks have been the primary provider of payment services. To engage in banking activities in Norway, an entity must be a licensed commercial or savings bank.

Payment institutions

The Payment Services Directive allowed for a new type of undertaking, referred to as a *payment institution*. Chapter 4b of the Financial Institutions Act and the Regulation relating to Payment Institutions, which entered into force on 1 July 2010, grants payment institutions the right to provide payment services on terms laid down by the Ministry of Finance. The Regulation also places some restrictions on the business activities of payment institutions. For example, payment institutions are not permitted to regard funds received from users as deposits, and these funds are not covered by deposit guarantees. Funds received from users shall be kept separate from the payment institution's own funds and, if they have not been transferred to a payee in the course of the following business day, shall be placed in a client account in a bank or invested in safe, liquid low-risk assets as determined by Finanstilsynet.

To operate as a payment institution in Norway, an entity must apply to Finanstilsynet for authorisation. Two types of authorisation as a payment institution may be granted, ordinary and limited. The latter authorisation requires less initial capital and own funds, but also places some restrictions on the payment institution's business activities. For example, a payment institution with a limited authorisation is restricted to providing money remittance services, and there is a ceiling on the amounts that may be transferred per month. In addition, payment institutions with limited authorisation are barred from providing services or establishing branches in other EEA member states. Payment institution with ordinary authorisations may perform all five payment services defined in Section 11 of the Financial Contracts Act.

In March 2013, 22 payment institutions were registered in Norway, 20 of which primarily provide money remittance services and 19 of these have a limited authorisation. The other two payment institutions are Teller AS and mCash Norge AS. Teller is an acquirer and processes card payments for Visa, MasterCard and American Express merchants, while mCash is a mobile payments provider.

E-money institutions

E-money institutions are allowed to issue electronic money. Electronic money (e-money) is defined in Section 4c-1 of the Financial Institutions Act:

"Electronic money" shall mean monetary value as represented by a claim on the issuer, which is stored on an electronic device, issued on receipt of funds for the execution of payment transactions and accepted as a means of payment by undertakings other than the issuer.

E-money is the result of a conversion to electronic form of funds that have been transferred from a user to an e-money institution. E-money institutions are subject to Chapter 4c of the Financial Institutions Act and the Regulation relating to Electronic Money Institutions. Banks and other credit institutions, post office giro institutions and Norges Bank are allowed to issue e-money.

Since e-money is considered to be cash stored electronically, and not deposits, e-money is not covered by deposit guarantees. Just as is the case with payment institutions, e-money institutions are obliged to keep customer funds separate from their own funds. E-money institutions are subject to higher initial capital and own-funds requirements than payment institutions.

In February 2013, two e-money institutions were registered in Norway:

SmartCash AS and BuyPass Originator AS. SmartCash is owned by Telenor, while BuyPass Originator is owned by the parent company Buypass, which in turn in owned by Evry and Norsk Tipping.

Telecommunication providers

In recent years, a number of telecommunication providers have developed new payment solutions. Telecommunication providers are exempt from the Payment Services Directive and the Electronic Money Directive as long as their activities are limited to payments for delivery of value-added services traditionally accessed by a telecommunications, digital or IT device. Value-added or content services are products or services delivered to such devices, where the telecommunications operator does not act solely as an intermediary. Thus, a mobile operator may offer limited payment solutions for products or services to be used on mobile phones without needing authorisation as a payment institution or e-money institution. Examples of such products or services are ring tones and directory enquiry services.

On the other hand, telecommunication providers are prohibited from offering payment solutions for physical products or services, such as the purchase of products from vending machines, unless they are authorised as a payment institution or e-money institution. Nor are telecommunication providers allowed to offer payment solutions for the purchase of films or books delivered to a mobile device, since telecommunication providers are only to be an intermediary between customer and vendor.

Competition issues – access to payment systems

One aim of the Payment Services Directive was to foster competition. The Directive requires that payment service providers be granted access to payment systems on equal terms. This requirement has been incorporated into Section 5-2 of the Payment Systems Act, which states that the rules on access to payment systems shall be objective, non-discriminatory and proportionate.

However, systems notified under the Finality Directive may be exempted from Section 5-2 of the Payment Services Act. Participation in these systems must be approved by the systems' owners. In Norway, the Norwegian Interbank Clearing System (NICS) has been notified under the Finality Directive. This is also the case of the national debit card BankAxept, through the notification of NICS. Thus, undertakings other than banks do not have access to these systems, unless the systems' owners allow it.

At the same time, it is important to keep risk in the systems at a low level. The aim of a level playing field must be balanced against risk considerations. If new providers were to participate in the systems, they would have to apply for participation through a private settlement bank. Such indirect participation would then make them dependent on credit lines from the settlement bank.

New Payment Services Directive

The Payment Services Directive is being revised. One point the European Commission has invited comment on is whether to merge the Payment Services Directive and the Electronic Money Directive.[2] However, such as merger will be difficult to accomplish, since the Electronic Money Directive has not been implemented in all member states. Therefore, the assumption is that the Commission will initially give priority to updating the Payment Services Directive.

The Commission is also considering eliminating certain exemptions in the Directive, including the exemption for telecommunication providers. This must be viewed in the light of the substantial changes in the number of payment solutions available since the Payment Services Directive was updated in 2007.

A third area on which the Commission has invited comment is access to payment systems. As noted above, the exemption from free access to notified systems may tilt the playing field. However, expanded access to notified systems may lead to a number of legal and practical issues, possibly requiring amendments to the Finality Directive.

2 European Commission (2012).

2. Interbank systems and settlement systems for foreign exchange and securities transactions

A failure in the payment system can have far-reaching consequences. In the course of a day, a large number of interbank transactions must be settled, the total value of which can be high. A well-functioning payment system ensures that funds are transferred securely and in a timely manner. This is essential for public confidence in deposit money.

All transfers between banks take place in interbank systems, which are systems for clearing, settling and/or transferring money 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. Losses arising from an interbank system failure can be greater for society than for system participants. If the system is designed and operated solely to serve the interests of system owners, insufficient attention may be paid to developing secure solutions. Under the Payment Systems Act and the Norges Bank Act, Norges Bank is responsible for supervising important interbank systems and for overseeing the payment system as a whole.

Maintaining the stability of an interbank system poses a particular challenge when that system is modified. Several changes were made to Norwegian interbank systems in 2012. For example, a fourth net settlement and caps on private settlement banks' exposure to the banks they serve were introduced. These changes, which improved efficiency and reduced credit risk in the system, were implemented without compromising stability.

In the view of Norges Bank, Norwegian clearing and settlement systems compare well internationally. International collaborative bodies for central banks and regulators have drawn up new international principles for regulation, supervision and oversight of financial market infrastructures.[10] Norges Bank has requested Norwegian systems to submit self-assessments of their systems on the basis of the new principles in the course of 2013.[11] Norges Bank plans to publish its own assessment of market operators on the basis of the new principles in spring 2014.

10 See CPSS-IOSCO (2012b) for methodology.

11 See CPSS-IOSCO (2012a) and Bakke, Husevåg and Igland (2013).

Financial market infrastructures in Norway

An interbank system is based on common rules for clearing, settlement and payment transfers between credit institutions. Norges Bank is the ultimate settlement bank in Norway (see Chart 1). Norges Bank's settlement system (NBO) receives clearings from the Norwegian Interbank Clearing System (NICS) and VPS, the Norwegian central securities depository (CSD) and payments sent to and from the Continuous Linked Settlement (CLS) system.

NICS relays payments for gross or net settlement in Norges Bank. Small-value payments, such as card and giro payments, are netted, leaving each bank with a single net credit or debit position vis-à-vis the other participant banks. These positions are cleared by NICS. The positions calculated by NICS are then sent to NBO for settlement. In NBO, banks' accounts are credited or debited to settle these positions, i.e. net settlement. Transactions not included in clearing are settled at Norges Bank one by one, i.e. gross transactions.

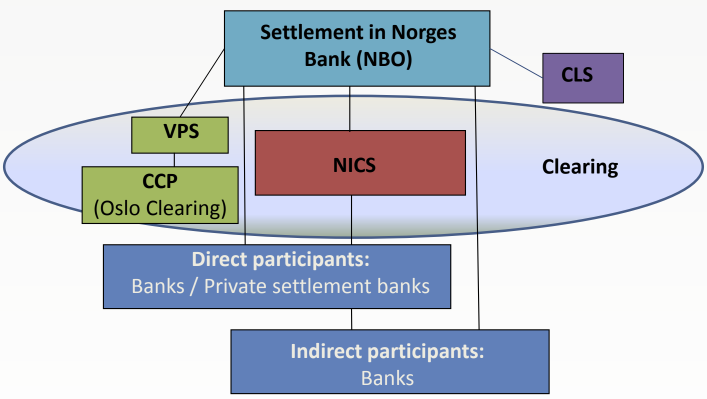
Most large banks and the two private settlement banks are directly involved in net settlement at Norges Bank (first-tier banks). For those banks (second-tier) whose positions are settled through a private settlement bank, the settlement bank takes over these banks' positions and settles on their behalf in NBO. Banks using a private settlement bank in the net settlement can also choose to send gross transactions directly to NBO for settlement. For banks with first-tier settlement, transactions exceeding NOK 25m are automatically relayed directly to NBO for settlement. Payments of less than NOK 25m can also be sent as gross transactions, in which case they must be specially marked.

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

Foreign exchange trades involving NOK are largely settled in CLS Bank (see page 30). Each foreign exchange trade is settled separately in the banks' accounts with CLS. Payments to and from CLS in NOK are made directly in NBO. The settlement participant can pay in the amount directly or via a correspondent bank.

Payments for trades in equities, equity capital instruments, notes and bonds are settled in the securities settlement system (VPO). For settlement of trades in equities and equity capital instruments, these trades are first reported to Oslo Clearing, currently the only central counterparty for trading in equity capital instruments at Oslo Børs. Oslo Clearing submits cleared cash and security positions to VPS. Each trade in short-term paper and bonds is sent directly to VPS by the invest-

Chart 1 Interbank systems in Norway[1]



1) The chart has been simplified for reasons of clarity. CCP = Central counterparty

Source: Norges Bank

ment firm. 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 VPS, while the cash positions are sent to NBO for settlement. The two systems jointly secure Delivery versus Payment (DvP).

Participation in the securities leg of settlement in VPO can be direct or indirect. Indirect participation means that one participant's position (the indirect participant) is netted against the positions of another participant (the direct participant). Direct participants must settle the cash leg of these positions in NBO. If they have an account with Norges Bank, they may settle the transaction on their own. If they do not, the cash leg must be settled through a bank that has such an account, referred to as a liquidity bank.

Banks' cash positions from derivatives trades via CCPs are settled in NBO or a private settlement bank. The CCP clears participants' cash positions and relays the result to Norges Bank or the private settlement bank.

There are three CCPs to derivatives trades in Norway: Oslo Clearing ASA (equity capital instruments), Nasdaq OMX Oslo NUF (energy derivatives etc.) and NOS Clearing ASA (freight derivatives, seafood derivatives, etc.). Oslo Clearing provides clearing services in three product segments: equities, equity derivatives and securities lending products. Members of Oslo Børs may participate in Oslo Clearing on their own behalf as direct clearing members or on behalf of themselves and other exchange members as general clearing members. Exchange members participating indirectly via a general clearing member are referred to as non-clearing members. Cash positions from Oslo Clearing are settled in NBO, while positions from the other CCPs are settled in private banks.

Table 1: Financial market infrastructures subject to supervision or oversight

System	Financial instrument	Operator	Supervision/ oversight	Administrative body
Norwegian securities settlement system (VPO)	Securities	VPS (Norwegian CSD)	Supervision and oversight	Supervision of VPS: Finanstilsynet Oversight of VPO: Norges Bank
Oslo Clearing settlement system (OCO)	Derivatives/ equities	Oslo Clearing ASA (OC)	Supervision and oversight	Supervision of OC: Finanstilsynet Oversight of OCO: Norges Bank
Continuous Linked Settlement (CLS)	FX transactions	CLS Bank	Supervision and oversight	Supervision of CLS: Federal Reserve Oversight of CLS: Central banks whose currencies are traded at CLS, including Norges Bank
Norwegian Interbank Clearing System (NICS)	Payments	NICS Operations Office	Supervision	Norges Bank
DNB Bank ASA settlement system	Payments	DNB Bank ASA	Supervision	Norges Bank
Norges Bank's settlement system (NBO)	Payments	Norges Bank	Oversight	Norges Bank
SpareBank 1 SMN settlement system	Payments	SpareBank 1 SMN	Oversight	Norges Bank

2.1 Interbank systems

2.1.1 Norwegian Interbank Clearing System (NICS)

The Norwegian Interbank Clearing System (NICS) is the banks' joint system for receiving and clearing payment transactions. In Norway, nearly all payment transactions are sent to NICS before being relayed to Norges Bank for settlement in Norges Bank's settlement system (NBO).

Average daily turnover in NICS was nearly 250bn in 2012. This is 13% higher than in 2011 (see Chart 2.1). At end-2012, 132 banks participated in the NICS daily clearings. NICS performs clearing for banks with settlement on two tiers:

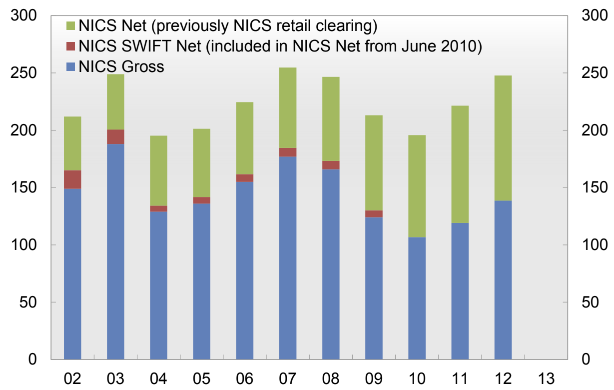
- 22 banks with settlement directly at Norges Bank (first-tier banks)
- 110 banks with settlement though a first-tier bank (private settlement bank) (second-tier banks)

Payment transactions sent to NICS may be submitted one by one (NICS Gross) or be included in a clearing in which a large number of transactions are settled simultaneously (NICS Net). First-tier banks participate in NICS Gross, and transactions are relayed continually to NBO for settlement in real time. NICS Net transactions are first cleared on a multilateral basis, after which second-tier banks' positions are included in the position of the first-tier bank they use as a settlement bank. These clearings from NICS are relayed to NBO for settlement four times a day:

- Early morning clearing at approximately 5.30 am
- Late morning clearing at approximately 11.00 am (new clearing as from 12 October 2012)
- Afternoon clearing at approximately 1.30 pm
- Final clearing at approximately 3.30 pm

The private settlement banks include second-tier banks' positions in their own clearing positions without requiring deposits or collateral as cover. The settlement banks also guarantee settlement for individual second-tier banks when settlement in NBO has been completed. In order for the private settlement banks to avoid losses and control and limit exposure to individual participant banks, the banking industry introduced a system of exposure caps in NICS Net from 3 September 2012.[12] The private settlement banks set caps individually for their participant second-tier banks. Transactions from a second-tier bank that has exceeded its cap will not be cleared, delaying payments to and from that bank.[13] It is important for Norges Bank that settlement banks set caps at a level where they are not exceeded so frequently as to cause settlement disruptions. From the start-up date of 3 September 2012 until the end of the year, there were two cases where caps were exceeded at the early morning clearing. It is the view of Norges Bank that this is an acceptable level.

Chart 2.1 Daily average turnover in NICS. In billions of NOK. 2002 – 2012



Source: NICS Operations Office

A more efficient payment system

The introduction of a fourth settlement (late morning settlement) on 12 October 2012 has improved payment system efficiency. The larger number of clearings mitigates the liquidity risk in the payment system, because the positions that build up between banks are reduced when there is less time between net settlements. At the

12 For further details, see Norges Bank (2012), p. 22.

13 If a participant bank has exceeded its cap at the early morning clearing, its position is omitted and moved to the next clearing. For the two intermediate clearings and for the final clearing, deadlines for cover are set at 15 and 30 minutes, respectively. If a higher cap is not set for the second-tier banks in question or they have not obtained sufficient liquidity by the deadline for the final clearing, those banks may be excluded from NICS.

same time, payments are received faster by the payee. More frequent clearings also reduce the risk for a bank that has exceeded its cap at the early morning clearing or that fails to meet the deadline for forwarding transactions for the late morning and afternoon clearings, since there is a short time until the next clearing. This reduces the risk in the payment system, while speeding up the crediting of customer accounts.

For some customers who need to make payments settled with finality in real time, ordinary crediting of payments may not be speedy enough. An example of this is when the seller of a vehicle wants confirmation of receipt of payment at the same time as the sale. To address the need for payments settled with finality in real time, on 3 May 2012, the banking industry approved the introduction of "instantaneous payments". These will be credit transfers in NOK that are relayed without delay between customer accounts in different banks.[14] The common infrastructure for instantaneous payments is planned for implementation in the course of 2013, though banks will be responsible for their own link-ups to the common platform.

Changes in the Nets Group corporate structure

Good governance promotes efficient and secure operation of payment systems. Under the Payment Systems Act, NICS Operations Office is responsible for setting up and operating NICS, and is subject to licensing and supervision by Norges Bank. NICS Operations Office has outsourced operation of NICS to Nets Norge Infrastruktur AS (NNI). NNI bases its delivery of NICS on deliveries of operating services from Nets Norway AS, another Nets Group company.

On 12 December 2012, NICS Operations Offers submitted a change notification concerning a planned merger of Nets Norway AS and Nets Denmark A/S to create a new company, Nets A/S, registered in Denmark. Changes in ownership, organisational and operational matters must be reported to Norges Bank (see Section 2-6 of the Payment Systems Act). Changes will not be approved if they compromise the quality of or increases the risk inherent in the delivery of operating services. Nor will approval be granted if the changes reduce the system owner's ability to control and monitor system operations.[15] It is the responsibility of NICS Operations Office that the operations centre functions in compliance with the Payment Systems Act, regardless of corporate structure. To discharge this responsibility, NICS Operations Office must

- have expertise in system operation
- be assured the ability to control and monitor service deliveries to NICS
- have the right of use and terms for changing supplier clearly stated in the contract, so that NICS can migrate operations to other service providers if necessary

Norges Bank approved the change notification of 12 December 2012. In its notification, NICS Operations Office stated its intention not to raise objections against the merger of Nets Norway AS and Nets Denmark A/S and pointed out matters that it would follow up to maintain adequate control and management after the restructuring. Once NICS Operations Office has negotiated a draft contract with NNI, it must submit a change notification concerning the contract. Norges Bank must approve the new change notification before the contract can be signed (see Section 2-6 of the Payment System Act).

Risk in NICS

As payment systems play a key role in the economy, a failure in these systems may cause considerable disruptions and have adverse spillover effects. Pursuant to Section 2-1 of the Payment Systems Act, interbank systems shall be organised to ensure financial stability. This entails daily follow-up of operational risk (i.e. planning how essential functions can be safeguarded in the event of a disruption) and mitigation of systemic risk (e.g. counteracting risk resulting from a liquidity shortage or solvency problems among system participants).

14 See Norges Bank (2012) for a detailed description of the arrangement.

15 Norges Bank can also set requirements that must be complied with before the change notification can be approved.

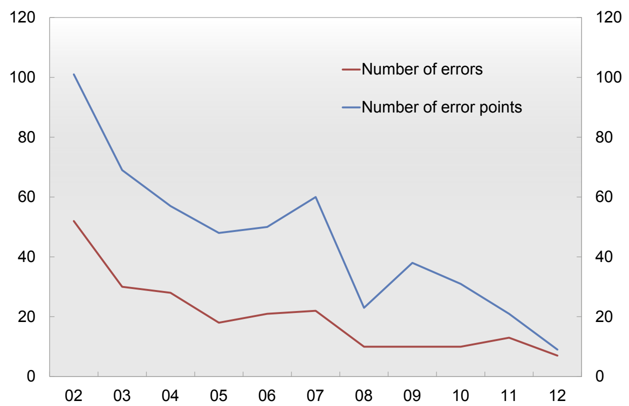
NICS Operations Office seeks to limit operational risk by system testing, technology upgrades and improvements in routines and procedures. Banks have helped to reduce financial risk in interbank systems by using a two-tier system of clearing and settlement, introducing settlement limits and not crediting payments until after settlement.

Follow-up of operational risk

NICS operated stably in 2012. The number of disruptions and error points (measure of disruption seriousness) was reduced sharply from 2011, despite substantial system changes during the year (see Chart 2.2). No disruption was classified as serious or critical. In four cases, the disruption was caused by errors in NICS's database solutions, while the remaining three disruptions were due to network problems.

NICS Operations Office is working to enhance system quality and resilience, including through self-certification (for first-tier banks) and self-declarations (for second-tier banks). Under these arrangements, banks are required to respond to a number of questions regarding their payment service routines and provide an assessment of their own competence in the area. The purpose of these arrangements is to raise banks' awareness of the need for preparedness for dealing with disruptions that may be transmitted to other banks via NICS.

Chart 2.2 Disruptions in NICS operations. Number of errors and error points. 2002 – 2012



Source: NICS Operations Office

Mitigation of systemic risk

NICS has been designed so that the system itself does not contribute to financial systemic risk. Banks' credit risk linked to payment settlements was eliminated in summer 2000, when banks stopped crediting customer accounts before receiving payment themselves in Norges Bank settlements.[16] Even though NICS has been designed to minimise operational and liquidity risk, such risks cannot be eliminated completely in the same way as credit risk. An operational failure may arise at NICS or at a bank. Necessary and efficient redistribution of liquidity will, in such a situation, depend on whether banks have confidence in one another, whether they have sufficient liquidity available at Norges Bank, and whether their routines for handling these situations are adequate.

Disruptions at one bank may impose high costs on other banks in the system. If one bank in the system is unable to send outgoing transactions, other banks will not receive transactions that they were expecting. If some of these banks depend on these incoming transactions, these banks, too, will be unable to meet their obligations. Berge and Christophersen (2011) analyse possible contagion effects of operational problems at a bank that prevent it from transmitting payment orders. The analysis showed that these problems generally did not have consequences for other banks' solvency. However, on certain settlement dates, usually days characterised by a high volume of individual payments and lower-than-normal liquidity, the result of a failure of the problem bank to transmit payments will be that one or more other banks in NBO would have insufficient liquidity to execute payments. The analysis showed that for only four banks (which are large and active in NBO), such an operational failure would lead to liquidity problems in other banks in the system.

16 Some of this credit risk will be reintroduced by instantaneous payments, though this probably involves limited amounts.

One situation that was not analysed by Berge and Christophersen (2011) are contagion effects when a bank does not have sufficient cover in net settlement. Nevertheless, an analysis that Norges Bank performed in winter 2013 shows that there is little likelihood that this will result in contagion effects.

Easier to change settlement bank

Norges Bank has concluded agreements with second-tier banks to allow them to participate directly in the NBO net settlements (in the first tier) if one of the private settlement banks is unable to perform its role as settlement bank. NICS Operations Office has established effective operating routines in NICS that will enable affected second-tier banks to quickly migrate to a new settlement bank. This requires that second-tier banks have appropriate routines and contingency plans to change settlement bank and that they have an agreement with a reserve settlement bank.

Under an agreement with Norges Bank, NICS Operations Office may decide to move settlement from second-tier banks to NBO if a private settlement bank is unable to perform its role as settlement bank. Such a decision requires that the second-tier banks have an ordinary account with Norges Bank and have authorised the operations office to implement this change. On 7 November 2012, NICS Operations Office sent a letter to all second-tier banks with an ordinary account with Norges Bank, with a request to return a written authorisation in this regard. By the beginning of May 2013, 104 of 106 such second-tier banks had returned the authorisation. The authorisations can expedite a transfer of affected second-tier banks to a new settlement banks and thus ensure financial stability, if a private settlement bank experiences operational problems or is placed under public administration. In addition, work on self-certification and self-assessment will bolster preparedness for managing such disruptions.

Norges Bank has examined whether second-tier banks have sufficient deposits and borrowing facilities at Norges Bank to be able to meet their obligations if they need to change settlement bank and participate in NBO on the first tier. Data from December 2012 show that 91 of the 110 second-tier banks had considerable available liquidity at Norges Bank. Nine of the second-tier banks would not have enough liquidity in NBO to cover clearing positions in at least one settlement, while six second-tier banks were on the borderline. Four of the second-tier banks had no available liquidity at Norges Bank. These banks would have to deposit funds or pledge securities in favour of Norges Bank to cover a clearing position from NICS or send a gross payment.

Norges Bank's assessment

In Norges Bank's opinion, NICS operated in a satisfactory and stable manner in 2012. The number of disruptions measured in terms of error points was low, having declined compared with the previous year. Norges Bank also has a favourable view of actions taken at NICS to reduce risk, especially the steps taken to make it easier to change settlement bank and the introduction of caps for banks with second-tier settlement.

NICS Operations Office will conduct a self-assessment of NICS in 2013 applying the new principles from CPSS-IOSCO. Norges Bank will issue its assessment in spring 2014. Norges Bank has previously evaluated NICS in accordance with international recommendations and found that the system was satisfactory (see Norges Bank (2007 and 2008)).

Contagion effects if a bank has insufficient funds to meet its net settlement obligations

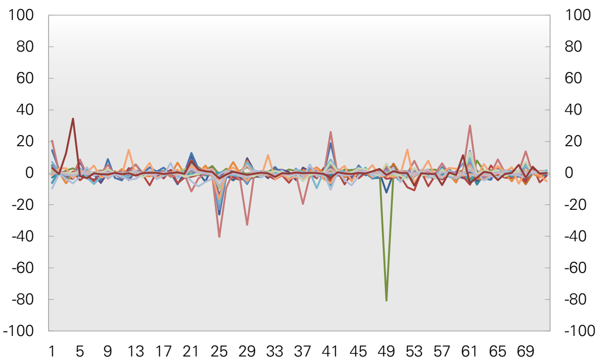
If a bank has insufficient liquidity to cover its clearing position, the entire clearing result is returned to NICS, which executes a new clearing excluding the payments due to and from the bank holding insufficient liquidity (so-called reversal). A new clearing will result in new positions for the remaining 21 banks. Banks with claims on the bank holding insufficient liquidity will have a larger payment obligation or a reduced credit payment in the revised net settlement. The new positions can be very different from the original clearing positions, and more banks can be left with insufficient liquidity to cover their new position.

The 22 banks taking part in net settlement in NBO have ample liquidity in NBO, and their clearing positions are generally low in relation to their liquidity levels (see Chart 1). This reduces the probability that a severe problem will arise and trigger contagion effects. In December 2012, no bank's payment obligations exceeded 40% of its available liquidity. Banks also receive real-time information through NBO Online, where they can monitor their position at all times. Thus, they have time to obtain necessary liquidity prior to net settlement, whether outgoing payments are small or large. Banks will not normally encounter problems settling their payment obligations in these settlements.

Based on data for NICS for December 2012, Norges Bank has analysed to what extent insufficient liquidity in one bank in the net settlements can cause settlement problems for other banks. The analysis is limited to six large banks. Norges Bank's analysis focuses on contagion effects among these six banks if one of them has insufficient liquidity in each of the four net settlements.

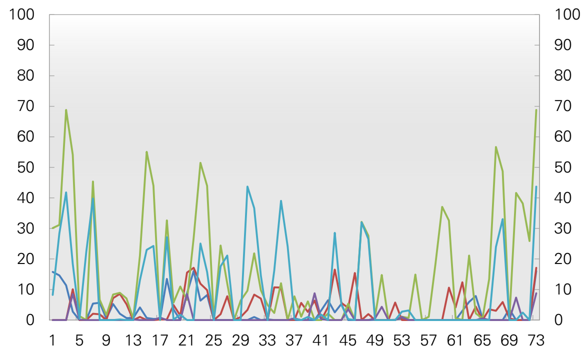
The analysis shows that the bilateral positions between the six banks were at generally low levels relative to their liquidity in NBO. A loss of one of these six banks in a net settlement would not constitute a risk that the other five banks would not be able to fulfil their obligations. This also applied to banks with very large bilateral positions. Chart 2 shows the five banks' liquidity needs at the time of the revised NICS clearing, the highest of which came to about 70 percent of that bank's available liquidity in December 2012.

Chart 1 Multilateral positions[1)] in the NICS clearing for the 22 first-tier banks. In percentage of the bank's available liquidity in NBO. All clearings in December 2012



1) A position above zero indicates that the bank has a pay-in obligation, while a position below zero indicates that the bank expects a pay-out.
Sources: NICS Operations Office and Norges Bank

Chart 2 Liquidity needs at five large banks at the time of a revised NICS clearing if one bank is unable to participate in the clearing. In percentage of the bank's available liquidity. All clearings in December 2012



Sources: NICS Operations Office and Norges Bank

2.1.2 Norges Bank's settlement system (NBO)

Norges Bank is the ultimate settlement bank in Norway, and interbank positions are settled in Norges Bank's settlement system (NBO). Nearly all banks in Norway have an account with Norges Bank. Twenty-two large and medium-sized banks participate directly in daily settlements in NBO. Most of these also actively relay gross payments throughout the settlement day.

Market participants' confidence that settlement in NBO will proceed as planned and without serious disruptions or delays is important for financial stability. This requires that NBO maintains a high quality of service, is reliable and performs its tasks without major disruptions. Furthermore, banks participating in the settlement system must meet their obligations by ensuring that deposits and borrowing facilities at Norges Bank are sufficient for settling all reported transactions without delay. As part of Norges Bank's efforts to promote financial stability, both NBO and the activities of banks are subject to ongoing oversight.

Oversight of NBO

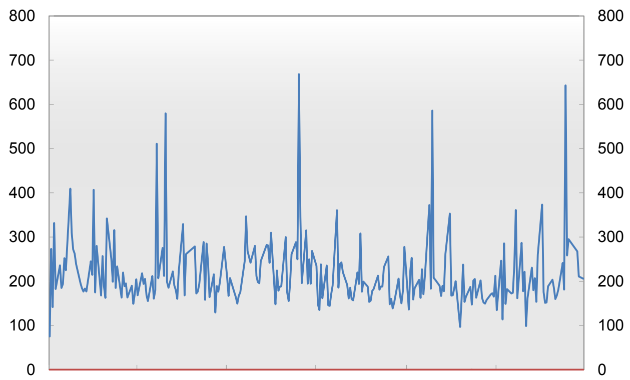
Operation of NBO has been stable since the new settlement system was introduced in April 2009. System availability was 99.99% in 2012. System availability was 99.97% for NBO Online, which gives banks access to account information, and 99.98% for the system that registers banks' collateral for loans.

During the year, new technical infrastructure for SWIFT and a new real-time gross settlement (RTGS) system were established. Furthermore, NBO's operating schedule was changed in October 2012 by the addition of a fourth daily settlement of payments cleared in NICS (see Section 2.1.1).

Activity of NBO participant banks

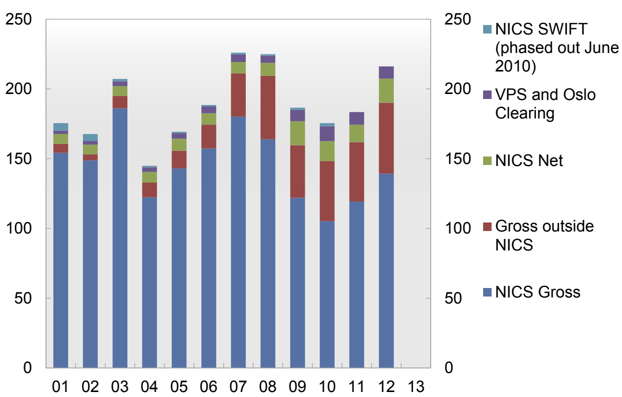
All participant banks need to be assured that they will receive expected incoming transactions in a timely manner. Normally, most banks have ample available liquidity in NBO for transaction purposes, and transactions are rarely stopped on account of insufficient cover. The risk of contagion effects from operational disruptions is especially high on days with very high turnover (see Chart 2.3).

Chart 2.3 Daily turnover in NBO in 2012. In billions of NOK.



Source: Norges Bank

Chart 2.4 Average daily turnover in NBO by settlement. In billions of NOK. 2001 – 2012



Source: Norges Bank

Average daily turnover in NBO in 2012 was approximately NOK 214bn, an increase of 17% from 2011, (see Chart 2.4).

Many types of payments are settled in NBO. Interbank balances in the form of customer payments, ATM transactions and bill payments are cleared in NICS four times daily and sent to NBO for settlement. Clearings of the cash leg of securities settlement are relayed to NBO twice daily, at 6.00 am and 12.00 noon. CLS pay-ins do not follow a particular schedule, but most are completed by 8.00 am.

All banks with an account with Norges Bank can send gross transactions directly to NBO. Most gross transactions are sent via NICS, which relays the transactions to NBO for direct settlement. Payments to and from the foreign exchange settlement bank CLS are sent as gross payments directly to NBO, and totalled approximately NOK 15bn daily in 2012. The average daily pay-in obligation for the four banks that pay in NOK for CLS settlement is approximately NOK 7.5bn (see more about CLS in Section 2.2). Other gross interbank payments take place throughout the day. The risk that a payment will not be executed is reduced if large gross transactions are settled in sufficient time before the settlement system closes for the day. A large portion of the transaction value of gross payments is settled at midday (see Chart 2.5).

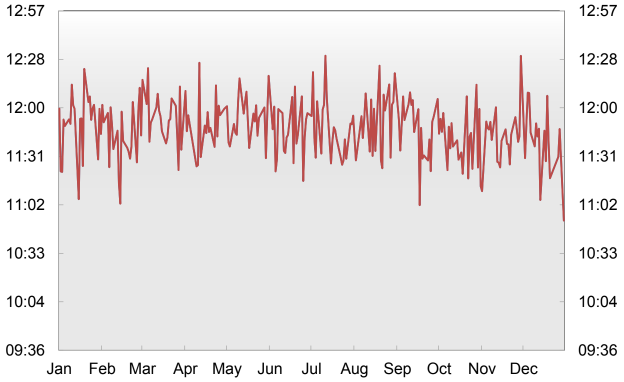
Compared with the value of banks' transactions, the total of banks' deposits at Norges Bank and the value of pledged securities is relatively high. The value of banks' securities pledged in favour of Norges Bank varied somewhat through 2012, but is normally around NOK 250bn–300bn (see Chart 2.6). Even so, interbank liquidity is not evenly distributed. Banks' maximum liquidity needs in the course of a settlement day compared with available liquidity vary considerably among the 22 first-tier banks (see Chart 2.7). As some banks' needs are relatively high on certain days, in the course of those days they will have drawn on nearly all of their available liquidity. It is important for these banks to have adequate liquidity management and established routines in place to enable them to quickly and efficiently obtain extra liquidity if necessary. Extra liquidity is available from the Scandinavian Cash Pool, for example (see Norges Bank (2004).

Norges Bank's assessment

In Norges Bank's opinion, operation of NBO was satisfactory and stable in 2012. There were few disruptions, and system availability of NBO was 100%.

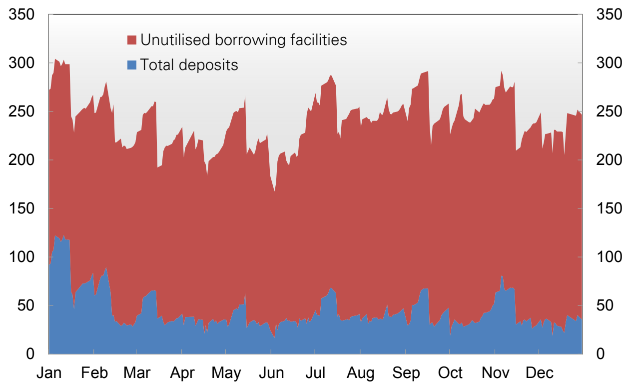
The system operator will conduct a self-assessment in 2013 applying the new CPSS/IOSCO principles. As oversight authority, Norges Bank will issue its evaluation in spring 2014. Norges Bank has previously assessed NBO in accordance with international recommendations and concluded that the risk in the system was satisfactorily low (see Norges Bank (2007 and 2008).

Chart 2.5 Average value-weighted point of time for gross payment by banks in NBO. 2012



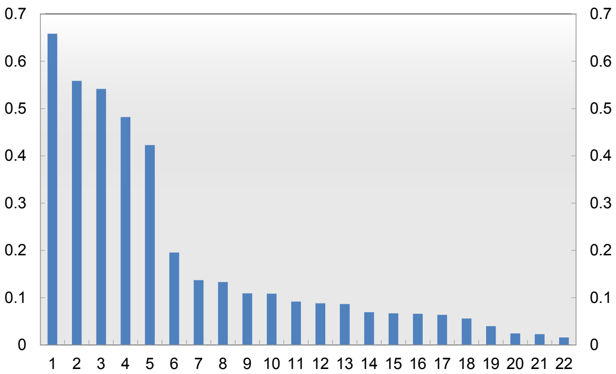
Source: Norges Bank

Chart 2.6 Bank's total deposits and unutilised borrowing facilities at Norges Bank (end of day). In billions of NOK. 2012



Source: Norges Bank

Chart 2.7 Liquidity fraction. Maximum liquidity needs during a single day for banks in NBO relative to the bank's available liquidity in NBO. Normal transaction order. Average for banks with direct settlement in NBO. 2012



Source: Norges Bank

2.1.3 Private settlement banks

There were three private settlement banks in Norway at end-2012. They participate directly in settlement in NBO (first tier) and settle payments on behalf of one or more participant bank (second tier) (see section on NICS). Private settlement banks reduce the number of settlement participants and thus the risk of delays in the execution of settlements. To mitigate the risk associated with the role of settlement bank, settlement limits (caps) have been introduced for second-tier banks (see Section 2.1.1).

DNB is the settlement bank for 98 participant banks and is the largest private settlement bank in Norway. The DNB settlement system has been stable in recent years. Nevertheless, the number of reported disruptions increased from one in 2011 to nine in 2012. However, none of the disruptions was particularly serious, and none had direct consequences for participant banks. The disruptions did not delay interbank settlement, but some of DNB's own transactions were postponed from one settlement to the following settlement the same day, and in one case from the final settlement to the early morning settlement the following day.

Minor settlement systems

SpareBank 1 SMN is the settlement bank for 11 small and medium-sized banks. This system is exempt from the licensing requirement because it has been considered to be less important for financial stability in Norway. Norges Bank thus does not supervise this system, but holds annual oversight meetings. In addition, Danske Bank is a private settlement bank for one bank.

Norges Bank's assessment

In Norges Bank's opinion, operations at the private settlement banks were stable in 2012. Norges Bank takes a positive view of the reduced risk for private settlement banks through the introduction of caps for banks with second-tier settlement.

DNB and Sparebank 1 SMN will perform a self-assessment of their systems in 2013. Norges Bank will issue its assessment in 2014. As part of its supervisory work, Norges Bank has previously assessed DNB's system in accordance with international recommendations, and concluded that the risk in the system was satisfactorily low (see Norges Bank (2007 and 2008)).

2.2 Settlement of foreign exchange transactions

CLS Bank International (CLS) is a settlement bank for foreign exchange transactions and settles trades in 17 different currencies[17]. CLS is located in New York and is subject to supervision by the Federal Reserve. The central banks for the remaining 16 currencies, including Norges Bank, participate in a cooperative oversight arrangement headed by the Federal Reserve. In July 2012, CLS was designated as one of eight systemically important Financial Market Utilities (FMUs) under the Dodd-Frank Act.

It is possible to participate in the CLS system either as a Settlement Member or as a Third Party. Settlement Members handle all of their own payments, while Third Parties make and receive payments via Settlement Members. If a Settlement Member needs to settle a transaction, either on its own behalf or on behalf of a Third Party, in a currency issued by a central bank in which it does not main-

17 USD, EUR, GBP, CAD, CHF, HKD, AUD, NZD, MXN, ILS, KRW, SGD, JPY, ZAR, DKK, SEK and NOK.

tain an account, the Settlement Member must use a correspondent bank (called a Nostro). In January 2013, CLS had 62 Settlement Members. DNB is the sole Norwegian Settlement Member, but Nordea, Danske Bank, and Skandinaviske Enskilda also make payments in NOK to CLS through Norges Bank's settlement system (NBO).

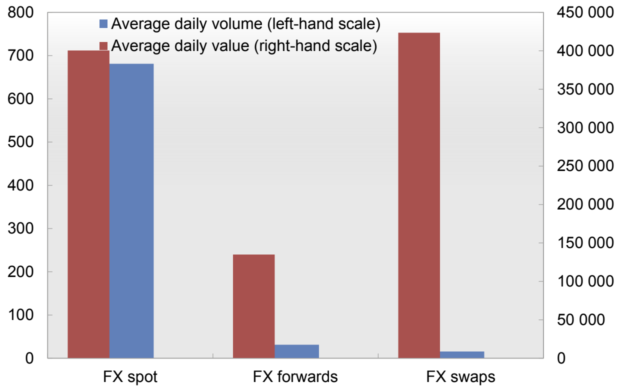
CLS settles payment instructions related to foreign exchange spot trades, foreign exchange swaps and foreign exchange forwards. The settlement risk in these transactions is mitigated because each leg of a transaction is matched on a payment versus payment (PvP) basis. Settlement is ensured because all participants hold an account with CLS, and CLS holds an account with all central banks in whose currencies it settles payment instructions. CLS also settles payment instructions related to over-the-counter (OTC) credit derivative and non-deliverable forward (NDF) contracts, which are settled in cash and there is no exchange of principal. In addition, CLS settles the exercise of foreign exchange option contracts. However, these payment instructions cannot be separated from payment instructions from spot or forward contracts.

Most transactions settled by CLS are spot transactions. However, in terms of settlement value, the value of swap transactions is just as high (see Chart 2.8).

Transactions in CLS are settled on a gross basis, but pay-ins are made on a net basis. In addition, banks can trade down their positions through bilateral currency trades. The result is that banks' pay-in requirements will be substantially lower than values settled. Net liquidity out of and into NBO is between 3% and 5% of the value of the transactions settled (see Chart 2.9).

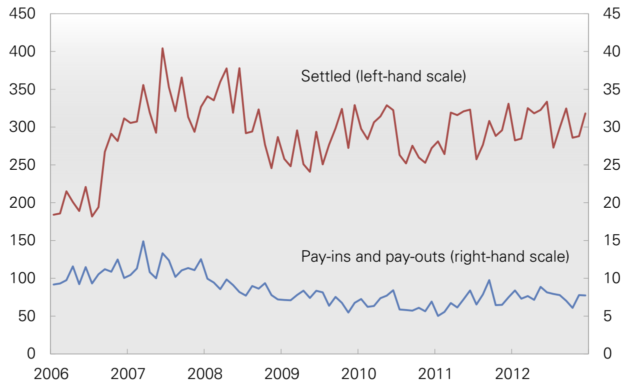
CLS is working to add a number of new currencies to its settlement system). In the course of 2013, CLS is also likely to begin providing same-day settlement[18], initially between USD and CAD.

Chart 2.8 Average daily volume and daily value by instrument. In billions of USD. December 2012



Source: CLS

Chart 2.9 Value of daily NOK settlements in CLS, and pay-ins and pay-outs in NOK. Monthly average. In billions of NOK. 2006–2012



Sources: CLS and Norges Bank

18 Settlement on the transaction date. Ordinarily, settlement takes place three days after the transaction date.

New principles for financial market infrastructures

On 16 April 2012, the Committee on Payment and Settlement Systems (CPSS[1]) and the International Organization of Securities Commissions (IOSCO[2]) published a report containing new principles for regulation, supervision and oversight of financial market infrastructures (FMIs). These principles are intended to promote the safety and efficiency of financial market infrastructures and foster financial stability.

Financial market infrastructures comprise multilateral systems for recording, clearing or settling payments, securities and derivatives trades or other financial transactions.

The new principles supersede the *Core principles for systemically important payment systems* (CPSS 2001), the *Recommendations for securities settlement systems* (which also covers central securities depositories) (CPSS-IOSCO 2001 and 2002) and the *Recommendations for central counterparties* (CPSS-IOSCO 2004). The new principles are common to the five types of FMI:

- Systemically important payment systems
- Securities settlement systems
- Central securities depositories
- Central counterparties
- Trade repositories

1 See http://www.bis.org/cpss/index.htm

2 See http://www.iosco.org

A single set of principles is intended to ensure greater coherency and consistency in the regulation, supervision and oversight of various systems. However, not all principles apply to all types of FMI, since they differ in their activities. For example, principles concerning credit and liquidity risk are not relevant for trade repositories, whose activities solely are related to recording transactions. Table 1 provides an overview of the principles that apply to the various types of FMI.

In addition to these principles, the CPSS-IOSCO report introduces five oversight expectations applicable to critical service providers for FMIs, such information technology and messaging providers.[3] The expectations are intended to ensure that the operations of a critical service provider are held to the same standard as if the FMI provided the service.

As CPSS and IOSCO do not have legislative powers, they cannot direct FMIs to comply with the new principles. National regulators thus have the responsibility for implementing a supervisory and regulatory regime that ensures that FMIs comply with these principles. In the report, CPSS-IOSCO sets forth five responsibilities for central banks, market regulators and other relevant authorities. Below is a review of what these responsibilities entail and how Norges Bank will ensure compliance with them.

3 CPSS-IOSCO (2012) (see Annex F).

A: Regulation, supervision and oversight of FMIs

FMIs should be subject to appropriate and effective regulation, supervision, and oversight by a central bank, market regulator, or other relevant authority.

Norges Bank oversees Norwegian FMIs. The Bank's oversight activities currently cover NICS, VPO, Oslo Clearing's settlement system DNB's and SpareBank 1 SMN's private settlement system and Norges Bank's own settlement system. VPS and Oslo Clearing are subject to supervision by Finanstilsynet, while Norges Bank supervises NICS and DNB's settlement system.[4] Thus, many of these systems are subject to both supervision and oversight.

DNB's and SpareBank 1 SMN's settlement systems are what are referred to as "quasi-systems". A quasi-system is "[a] commercial institution responsible for clearing and settling payments on behalf of customers which represent, by value, a substantial percentage of payments in a particular currency, a significant proportion of which are internalised by being settled across the books of the institution rather than through an organised payment system" (see CPSS (2005) p. 20). While important quasi-systems may be subject to oversight,[5] the CPSS-

4 SpareBank 1 SMN's settlement system is exempt from the licensing and supervision requirement (cf. Section 2-3 of the Payment Systems Act).

5 CPSS (2005), p. 20, *Central bank oversight of payment and settlement systems* (http://www.bis.org/publ/cpss68.pdf)

Table 1: Relevant principles for various FMIs

Principle	Type of FMI: Payment systems	Central securities depositories	Securities settlement systems	Central counterparties	Trade repositories
1. Legal basis	x	x	x	x	x
2. Governance	x	x	x	x	x
3. Framework for the comprehensive management of risks	x	x	x	x	x
4. Credit risk	x		x	x	
5. Collateral	x		x	x	
6. Margin				x	
7. Liquidity risk	x		x	x	
8. Settlement finality	x		x	x	
9. Money settlements	x		x	x	
10. Physical deliveries		x	x	x	
11. Central securities depositories		x			
12. Exchange-of-value settlement systems[1]	x		x	x	
13. Participant-default rules and procedures	x	x	x	x	
14. Segregation and portability				x	
15. General business risk	x	x	x	x	x
16. Custody and investment risk	x	x	x	x	
17. Operational risk	x	x	x	x	x
18. Access and participation requirements	x	x	x	x	x
19. Tiered participation arrangements	x	x	x	x	x
20. FMI links		x	x	x	x
21. Efficiency and effectiveness	x	x	x	x	x
22. Communication procedures and standards	x	x	x	x	x
23. Disclosure of rules, key procedures, and market data	x	x	x	x	x
24. Disclosure of market data by trade repositories					x

1 Exchange-of-value (EoV) setlement systems involve 14 simultaneous exchange of two assels in a transaction, e.g. settlement of foreign exchange or securities transactions.

IOSCO provides no guidelines for applying the principles to such systems. Because of the important role of larger private settlement banks in the Norwegian payment system, it is the view of Norges Bank that they should, as a main rule, comply with the principles applying to systemically important payment systems. An important consideration is for the principles to be implemented for all private settlement banks subject to supervision.

As mentioned, the new report also recommends that FMI's critical service providers should be subject to oversight. Norges Bank will be concerned with which providers an FMI uses and, in certain cases, may bar FMIs from using certain providers.

B: Regulatory, supervisory and oversight powers and resources

Central banks, market regulators and other relevant authorities should have the powers and resources to carry out effectively their responsibilities in regulating, supervising, and overseeing FMIs.

Under the Payment Systems Act, Norges Bank has the responsibility for licensing and supervising interbank systems whose operations are critical for financial stability. For example, Norges Bank may require that a system be altered if it is not organised to ensure financial stability. Supervisory responsibility for central counterparties and VPS (the central securities depository) rests with Finanstilsynet. The Norges Bank Act confers on Norges Bank a responsibility for overseeing the financial infrastructure and quasi-systems (see A above).

C: Disclosure of policies with respect to FMIs

Central banks, market regulators, and other relevant authorities should clearly define and disclose their regulatory, supervisory, and oversight policies with respect to FMIs.

In the *Annual Report on Payment Systems* 2011 and in a separate letter to system owners, Norges Bank announced that the new principles will be implemented in its oversight of financial market infrastructures. Furthermore, Norges Bank has requested that NICS Operations Office, VPS, Oslo Clearing, DNB and SpareBank 1 SMN conduct a self-assessment under the new principles in the course of 2013. A self-assessment will also be conducted of Norges Bank's settlement system. Norges Bank plans to publish its own assessment of market operators in spring 2014.

D: Application of the principles for FMIs

Central banks, market regulators, and other relevant authorities should adopt the CPSS-IOSCO Principles for financial market infrastructures and apply them consistently.

Norges Bank publicly endorsed the new principles in the *Annual Report on Payment Systems* 2011 and will apply the principles on FMIs and quasi-systems located in Norway (cf. A and C).

E: Cooperation with other authorities

Central banks, market regulators, and other relevant authorities should cooperate with each other, both domestically and internationally, as appropriate, in promoting the safety and efficiency of FMIs.

Norges Bank cooperates with Finanstilsynet on supervision and oversight of Norwegian FMIs (see page 22), and Norges Bank and Finanstilsynet have published two memoranda of understanding (MoU) with detailed descriptions of the working relationship and division of roles between the two institutions.[6] Internationally, Norges Bank collaborates with other central banks on monitoring the foreign exchange settlement activities of CLS Bank (see page 30). Further ahead, Norges Bank will likely participate in the supervision of cross-border central counterparties. Norges Bank is engaging in a dialogue with other central banks on the understanding and application of these principles.

6 http://www.norges-bank.no/en/financial-stability/oversight/oversight-of-payment-systems/collaboration-finanstilsynet/

2.3 Securities trading and securities settlement

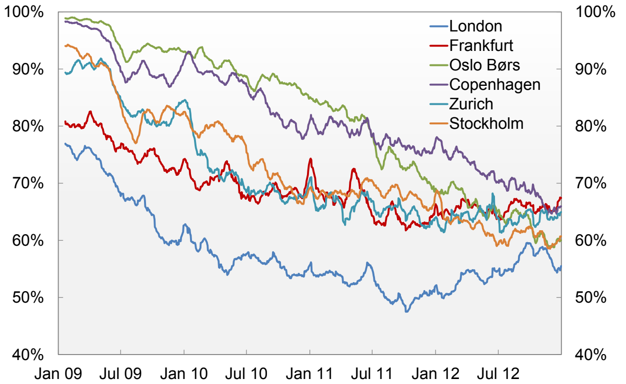
An efficient and secure infrastructure for the execution and settlement of trades is required to ensure the smooth functioning of securities markets. The securities market infrastructure must meet strict requirements. In Norway, the key elements of this infrastructure are the securities exchange Oslo Børs, Oslo Clearing and the Norwegian Central Securities Depository (VPS).

Securities can be traded directly between buyer and seller, on alternative trading venues or on an exchange. Recently, there has been rising tendency to use alternative trading venues, such as multilateral trading facilities (MTFs)[19], both in Norway and other countries (see Section 2.3.1).

Changes in equity trading patterns affect the way transactions are settled at VPS and Norges Bank. Equities traded on exchanges or alternative trading venues are settled via

19 An MTF is an organised trading venue operated by banks, etc. (see Chapter 11 of the Securities Trading Act).

Chart 2.10 Market share for selected stock exchanges. 15-day moving average. 1 Jan. 2009 – 31 Dec. 2012



Source: BATS Chi-X Europe

a central counterparty (CCP) (see Section 2.3.3). Over-the-counter (OTC) trades are settled directly between buyer and seller in the securities settlement system.

The EU is establishing a series of new regulations and directives on financial markets (see box on page 39). The new initiatives are aimed at increasing market resilience, lowering risk and improving market transparency. At the same time, stricter reporting requirements, greater harmonisation of solutions and mandatory use of CCPs for trading equity capital instruments may also increase costs for infrastructure and market participants.

2.3.1 Securities trading

Lower market share for Oslo Børs

In recent years, the emergence of new alternative trading venues has resulted in a fragmentation of equities trading in Europe. Oslo Børs and other exchanges have lost substantial market share (see Chart 2.10). In terms of the number of transactions, Oslo Børs had a market share of nearly 100% at the beginning of 2009, while at end-2012, it was just over 60%. In particular, the MTF BATS CHI-X and Nasdaq OMX Nordic Stockholm have taken market share from Oslo Børs. Equity trades on Oslo Børs are settled through Oslo Clearing (see Section 2.3.3).

Turnover on Oslo Børs has also declined for both equities and fixed-income instruments. In the period 2008–2012, the annual value of fixed-income instruments traded declined from NOK 5 800bn to NOK 2 800bn, while equity turnover fell from NOK 2 500bn to NOK 1 000bn. The number of daily equity trades on Oslo Børs declined from approximately 91 000 in 2011 to 85 500 in 2012, while the corresponding figure for fixed-income instruments increased from 80 in 2011 to 82 in 2012.[20]

Algorithmic trading

In recent years, there has been a growing volume of computer-driven equity trading, where algorithms are used to generate orders automatically. The most aggressive type of algorithmic trading is known as high frequency trading (HFT) (see Norges Bank (2012)).

To relieve the strains on trading venues', brokers' and investors' technical systems, on 1 September 2012, Oslo Børs implemented an order-to-executed-ratio to limit the number of orders members may place without incurring a charge. A member with more than 70 registered orders for each order executed will incur a charge of NOK 0.05 per order. Activity that improves market quality or liquidity is excluded from this rule. Examples are orders with a one second or more presence in the order book, or orders that rest less than one second, but are amended to improve price (narrower bid/ask spread) or liquidity (higher volume at the best price). No participants had been invoiced for exceeding the order limit by end-2012. Similar order limits have been implemented at a number of other European exchanges.

Algorithmic trading requires fast trading systems. To meet this need, on 12 November 2012, Oslo Børs introduced a new trading platform, Millennium Exchange. This platform is much faster than the old trading platform and is used by exchanges worldwide. The new trading platform makes it simpler for market participants to use prices on Oslo Børs as benchmarks.

Acquisition of other exchanges

In January 2012, Oslo Børs acquired 100% of the shares in the Swedish exchange Burgundy AB. Burgundy is licensed as a regulated trading venue and as an MTF. According to Oslo Børs, the acquisition will improve its clients' access to Nordic markets because more companies

20 Trading in fixed-income instruments largely comprises repo transactions between Norges Bank and large banks. In these repo transactions, Norwegian government bonds are swapped for cash in NOK.

and securities will be listed. On 30 April 2013, the Ministry of Finance approved the merger between Oslo Børs and Burgundy and will permit Oslo Børs to establish a branch in Sweden.

In February 2013, Oslo Børs acquired 90.2% of the shares in the fish and seafood derivatives exchange Fish Pool ASA. Oslo Børs explained that the reason for the purchase was to bolster its position as the world's leading fish and seafood exchange.

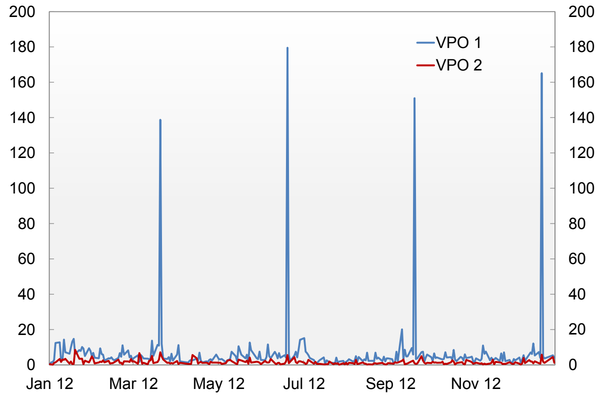
2.3.2 Securities settlement

Payments for trades in equities, equity capital instruments, notes and bonds are settled in the securities settlement system (VPO) (see box on page 21). VPS, the Norwegian central securities depository (CSD), is supervised by Finanstilsynet, and VPO is subject to oversight by Norges Bank. Norges Bank holds two annual oversight meetings with VPS, which Finanstilsynet attends as an observer.

There are two daily net settlements in VPO: one at around 6 am and the other at 12 noon. In 2012, the morning settlement accounted for 82% of daily volume. The average daily amount settled in VPO in 2012 was NOK 8.7bn. The amounts settled can vary considerably (see Chart 2.11). On days when Treasury bills in the swap arrangement mature, which occurs four times a year, the amount settled has totalled nearly NOK 180bn.

A key measure of the efficiency of securities settlement is the percentage of trades settled on the original (agreed) settlement day, referred to as the settlement ratio. When measuring the settlement ratio, a trade is considered settled when all the securities and the entire cash amount have been delivered. Partial deliveries, i.e. settlements where only part of the trade has been completed, are excluded from the calculation. Settlement of trades can fail for several reasons. For example, the parties may be unable to deliver the cash leg, or the transaction may be unmatched. According to VPS data, the settlement ratio in the Norwegian securities settlement system was just over 96% in 2012 which, according to VPS, corresponds to the settlement ratios of other international markets.

Chart 2.11 Daily turnover in the securities settlement system. In billions of NOK. 2012



Source: VPS

Institutions placed under public administration and the securities settlement system

Norges Bank (as operator of NBO) and VPS have been engaged in a joint project to clarify securities settlement procedures if a bank is placed under public administration. A key question is whether the Payment Systems Act allows a bank under public administration to send and receive payments on the date the bank is placed under public administration. On 19 December 2012, VPS and Norges Bank each sent a letter to the Ministry of Finance requesting clarification on this and other questions. Once the Ministry has issued its clarification, VPS and Norges Bank will jointly decide whether the rules should permit payments to and from a bank under public administration. Amending the rules in this way will enable a larger proportion of trades to be settled if a bank needs to be closed and will bring VPO more in conformity with international standards. VPS and Norges Bank have requested that the statement from the Ministry be applicable under the current net settlement system and also if VPO is restructured to include settlement of transactions one by one (gross settlement).

Status of the Target2-Securities (T2S) project

To promote a single securities market in Europe, the ECB/Eurosystem[21] has established the Target-2-Securities (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 EUR and other European currencies. The planned go-live of T2S is June 2015. Cur-

21 The Eurosystem includes the European Central Bank (ECB) and the central banks of states where the euro is the national means of payment.

rently, 22 central securities depositories (CSDs) are participating in the project, all of which, except for the Danish CSD VP Securities, settle trades in EUR. CSDs are to migrate to T2S in four waves, with the last wave scheduled to migrate in February 2017. VP Securities is set to migrate in 2018. T2S requires a standardised legal framework for CSDs in countries using T2S. If the project is to be completed as planned, the EU regulation on CSDs should be approved before T2S goes live (see box on page 39).

In February 2012, VPS announced that it would not be participating in T2S when it goes live in 2015. However, VPS has decided to work towards joining T2S at a later date, most likely 2018/2019.[22] This decision was made after VPS and Norges Bank had been in negotiations with the ECB, and discussed possible Norwegian participation with Norwegian market participants. During the negotiations phase, VPS, Norges Bank and DNB (as representative of the Norwegian market) were members of the T2S Advisory Group, which provided input from market participants to the project. Following VPS's decision to defer participation, Norwegian market participants are excluded from the advisory group.

Norges Bank's assessment

In Norges Bank's opinion, operation of the securities settlement system was stable in 2012. System availability was 99.8%.

VPS will perform a self-assessment in accordance with the CPSS-IOSCO principles in the course of 2013. Norges Bank will issue its assessment in spring 2014.

2.3.3 Central counterparties

A central counterparty (CCP) is an institution that interposes itself between counterparties to a trade, becoming the buyer to the seller and the seller to the buyer. The original contract between the two parties is replaced with two new ones: one contract between the buyer and the CCP and one between the seller and the CCP. Both the buyer and the seller must post collateral or "margin" with the CCP. Buyers and sellers may use different CCPs.

22 VPS (2012).

Oslo Clearing

In 2010, Oslo Clearing was licensed as a CCP for equity trades on Oslo Børs. The Ministry of Finance required that all participants on Oslo Børs should have the possibility to choose between at least two different CCPs. Oslo Clearing is currently the only CCP on the exchange and is subject to supervision by Finanstilsynet. Norges Bank is the oversight authority for Oslo Clearing and arranges two oversight meetings per year, in which Finanstilsynet participates as observer.

At end-2012, Oslo Clearing had 18 clearing members, which all together had 21 clearing memberships. Of these 21, 14 participate on their own behalf as direct clearing members, with the remaining seven participating on their own or other exchange members' behalf as general clearing members (see box on page 21). In addition, Oslo Clearing has a CCP (LCH.Clearnet), which is a member for derivatives trading. Direct members of Oslo Clearing are typically major banks, while other institutions are ordinarily indirect participants.

All equity trades on Oslo Børs are reported to Oslo Clearing, which computes each investment firm's net position in cash for each equity. These net positions are then sent to VPS for clearing and settlement in the securities settlement system (VPO). Oslo Clearing participates in VPO with its own account with Norges Bank.

New clearing model

In September 2012, Oslo Clearing completed an update of its clearing model, CLARA, a key element of which was a joint clearing and margin model for all product segments. Up that time, Oslo Clearing had separate rules and margin for equities and derivatives, respectively. The new model will make it easier to comply with the European Market Infrastructure Regulation (EMIR)[23] (see below).

Following the update of the clearing model, clients must opt for whether to have their account segregated from that of their clearing member by becoming "registered clients".

23 See box on page 39 for a description of EMIR. Its full name is Regulation (EU) 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories.

A registered client is protected against the clearing member's insolvency by having segregated accounts for positions and collateral. If the clearing member becomes insolvent, the positions and collateral can be moved to another clearing member. Previously, Oslo Clearing had a contract with most end clients who participated in derivatives clearing, but now clients must decide themselves whether to conclude this kind of contract. The option to be a registered client is in compliance with the requirements of EMIR.

Unless end clients choose the registered client option, margin requirements will be calculated per clearing member and not per end client. The clearing member will have its end clients' positions netted against one another (and against its own position), thus reducing its margin requirement. Another way the new model reduces margin requirements is that positions in equities and in equity derivatives with the same underlying instrument may be netted.

End clients that are not registered clients no longer post margin to Oslo Clearing, but to the clearing member directly. The clearing member, and not Oslo Clearing, will be liable for covering positions of an end client in default. Thus, some of the risk has been moved from Oslo Clearing to the clearing members. As a service to its members, Oslo Clearing computes the margin requirement for each end client, enabling clearing members to issue margin calls to end clients. Inadequate margin call routines may increase the risk in the system.

Uncertainty surrounding implementation of EMIR
Oslo Clearing is in the process of conforming to the requirements in EMIR. As of spring 2013, EMIR had not been integrated into the EEA Agreement, primarily because the regulation grants powers to the European Securities and Markets Authority (ESMA),[24] which has raised constitutional questions that are as yet unresolved.[25]

All CCPs established in the EU (and in any EEA states that have implemented legal framework equivalent to EMIR) must apply for reauthorisation under EMIR or EMIR-equivalent framework. This application must be filed no later than six months after the date the EMIR technical standards entered into force (15 March 2013), and the authorisation will be effective for the entire EU. CCPs established in third countries, i.e. outside the EU, may offer services to banks established in the EU, provided they have ESMA recognition as a third-country CCP (TC-CCP).

Owing to the uncertainty surrounding the implementation of EMIR in Norway, there is an effort to enable Oslo Clearing to apply for recognition as a TC-CCP. If Oslo Clearing does not receive EMIR authorisation or third-country recognition in a timely manner, the company will no longer be allowed to provide clearing services to banks domiciled in the EU. About half of Oslo Clearing's clients are from the EU. Recognition as a TC-CCP requires, among other changes, amendments to the Norwegian Securities Trading Act in order to harmonise Norwegian law with EMIR. A working group appointed by the Ministry of Finance has drafted proposed amendments to this effect. The proposed amendments were submitted to the Ministry in a letter of 22 March 2013. The proposal is now being circulated for comment, with a consultation deadline of 26 July 2013.

Acquisition of Oslo Clearing
On 17 December 2012, Oslo Børs announced its intention to sell Oslo Clearing to the Swiss SIX Group, subject to Ministry of Finance approval. If the Ministry approves the sale, the parties expect the sale to be completed in 2014 Q2. SIX is responsible for operation of the Swiss financial market infrastructure and is subject to supervision and oversight by the Swiss Financial Market Supervisory Authority and the Swiss National Bank.

Requirements for more CCPs on Oslo Børs
In 2010, Oslo Børs was granted authorisation to establish Oslo Clearing. The Ministry of Finance set the condition that at least two CCPs would be available to trading members on Oslo Børs. In 2010, Oslo Børs signed a memorandum of understanding with London-based LCH.

24 See box on page 39 for a description of ESMA.

25 See Meld. St. 5 (2012 – 2013)

Clearnet on an interoperability[26] arrangement for clearing equity trades. Oslo Børs and LCH.Clearnet were already collaborating on derivatives. The necessary agreements are expected to be concluded by the end of 2013 Q2. According to Oslo Børs, progress has been slower than anticipated on account of delays in approval by EU authorities of the legal content of these agreements.

Norges Bank's assessment

In Norges Bank's assessment, operation at Oslo Clearing in 2012 was stable. System availability was 100% for equities and 99.85% for derivatives.

Oslo Clearing will conduct a self-assessment in 2013 in accordance with CPSS-IOSCO, after which Norges Bank will issue its assessment.

26 Collaboration between CCPs is often referred to as interoperability.

Other authorised CCPs

There are two CCPs in Norway in addition to Oslo Clearing: Nasdaq OMX Oslo NUF and NOS Clearing ASA. Nasdaq OMX is a branch of Nasdaq OMX Stockholm and settles trades in energy derivatives. NOS Clearing is a CCP for freight and seafood derivatives. In July 2012, NOS Clearing was acquired by Nasdaq OMX Stockholm AB, which is owned by Nasdaq OMX Group Inc. The aim is to integrate NOS Clearing into Nasdaq OMX in 2013.

Neither the branch Nasdaq OMX nor NOS Clearing is subject to oversight by Norges Bank, since they are not deemed systemically important financial market infrastructures. Norges Bank has meetings with Nasdaq OMX and NOS Clearing to keep apprised of developments in the two companies. Finanstilsynet supervises the Oslo branch of Nasdaq OMX and NOS Clearing.

New EU regulation of financial infrastructure

The EU is currently establishing a number of new regulations and directives on financial markets and financial infrastructure. There are several objectives:

- more effective competition in financial markets;
- greater transparency with regard to trades and prices;
- less risk of ambiguity as to the ownership of shares, and
- reduced risk of market failure through new technology introduced by market participants.

The work on the various new initiatives is not synchronised; while some have been adopted and implemented, others are still being circulated for comment. However, sufficient progress has been made on all the initiatives for the main features to be outlined.

European Market Infrastructure Regulation (EMIR)

At the Pittsburgh Summit in 2009, G20 leaders decided on measures to reduce risk and improve transparency in the OTC[1] derivatives market.[2] In response, the EU adopted EMIR on 4 July 2012. Main obligations under EMIR are:

- relevant OTC derivatives contracts to be cleared through a central counterparty (CCP),
- risk management for both CCP-cleared and non-CCP-cleared derivatives contracts (bilateral clearing), and
- all derivatives contracts to be reported to trade repositories.

Detailed provisions for EMIR, referred to as technical standards, have been drawn up by the European Securities and Markets Authority (ESMA), including the criteria determining if a class of derivatives should be subject to the clearing obligation[3], risk management requirements for CCPs and requirements to report derivatives trades to trade repositories. EMIR entered into force in August 2012 in the EU, while the standards drawn up by ESMA entered into force on 15 March 2013. The Ministry of Finance has begun an effort to harmonise Norwegian legislation with EMIR.

Markets in Financial Instruments Directive II (MiFID II)

MiFID II is an expanded and updated version of the Markets in Financial Instruments Directive (MiFID) imple-

1 Over-the-counter (OTC) derivatives contracts are not traded on a stock exchange.

2 G20, The Pittsburgh Summit 2009, http://www.g20pittsburghsummit.org/

3 Settlement via a central counterparty.

mented in 2007. The main objective of MiFID II is to promote efficient and robust financial markets and improve investor protection. The directive requires clients to be categorised as counterparties, professional investors or retail investors, with different requirements regarding the obligation to provide advice and information applying to the three categories. MiFID was expanded both to follow up the G20 leaders' decision at the Pittsburgh Summit in 2009 and in response to trends in the market. The European Commission launched a consultation in 2011 with proposals for new legislation in this area. The main points in the proposal are:

- Raise transparency requirements by establishing a new category of regulatory trading platform, organised trading factilities (OTFs), which includes all organised trading facilities that are not captured by the categories "regulated markets" or "multilateral trading facilities (MTFs)" in the current regulations. OTFs will be subject to similar pre-trade transparency requirements as today's regulated marketplaces.
- Introduce new requirements to reduce the risk of instability and market manipulation associated with high frequency trading (HFT). HFT traders will be subject to risk control requirements and restrictions on the speed of order changes, and higher reporting requirements with regard to trading strategies, models and systems.
- Investment firms offering direct market access (DMA) to its clients will be subject to stricter requirements with regard to their risk control systems and monitoring (pre- and post-trade) of clients' trades.

Parts of the proposal will be implemented as a regulation to ensure that certain provisions are harmonised across national borders, while other parts will be implemented as a directive.

New EU regulatory framework for central securities depositories

In March 2012, the European Commission published a proposal for a new legal framework for central securities depositories (CSDs), although the date of its introduction has not been decided. The new framework contains the following key elements:

- standardisation of the length of the settlement cycle;
- rules for penalties for settlement fails of transactions;
- rules concerning CSD links, and
- a provision stating that a CSD authorised to operate in one EU country should be entitled to provide services across the entire EU without being subject to an establishment requirement.

Links between CSDs allow investors to choose their CSD without restriction. This may result in increased competition between CSDs in different countries. When the regulation is implemented, a CSD authorised in one member state can provide services across the entire EU without being subject to an establishment requirement. ESMA plans to draft standards to supplement the regulation by 2014 and entry into force in the EU is scheduled for 2015. The standards will as far as possible be in line with the new CPSS-IOSCO principles for financial market infrastructures (FMIs).

Securities Law Directive (SLD)

Securities are often held through a chain of account providers, known as a "holding chain". When the holding chain crosses international borders, different laws are applicable to the same underlying securities, leading to legal ambiguity. In 2010, the European Commission held a public consultation on a directive to harmonise legislation for the registration of ownership of securities and the transfer of ownership, the Securities Law Directive (SLD). Under the SLD:

- all account providers must be regulated at EU level and should be subject to a detailed supervision framework;
- conflict-of-laws arrangements must be clarified, and
- investor rights must be guaranteed (for example receipt of dividends or interest, and voting rights).

The SLD will thereby enhance protection of the investor's rights as owner of a security and promote cross-border competition. The SLD is expected to be introduced in 2013. Existing legislation in Norway is on the whole in accordance with the draft directive.

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General data

Table 1: General statistical data for Norway

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Population (as at 1 Jan., in millions)	4,53	4,56	4,58	4,61	4,65	4,69	4,75	4,81	4,87	4,93	5,00
GDP, market value (in billions of NOK)	1 532	1 592	1 753	1 959	2 181	2 306	2 560	2 357	2 544	2 750	2 915
Mainland GDP, market value (in billions of NOK)	1 225	1 273	1 366	1 465	1 603	1 757	1 863	1 876	1 987	2 090	2 206
Total household consumption (in billions of NOK)	670	710	757	798	853	911	958	979	1 041	1 079	1 120
1 USD in NOK (annual average)	7,97	7,08	6,74	6,45	6,42	5,86	5,64	6,28	6,05	5,61	5,80
1 EUR in NOK (annual average)	7,51	8,00	8,37	8,01	8,05	8,02	8,22	8,73	8,01	7,79	7,47

Means of payment in Norway

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Money supply (M2)	**882,915**	**904,217**	**972,013**	**1,085,330**	**1,233,749**	**1,440,205**	**1,494,802**	**1,529,940**	**1,609,936**	**1,709,189**	**1,772,477**
Narrow money supply (M1)	**399,712**	**427,689**	**472,058**	**552,246**	**679,503**	**760,448**	**736,491**	**744,260**	**788,613**	**828,816**	**846,467**
Banknotes and coins	40,283	41,685	43,340	46,530	48,247	49,543	49,128	48,399	48,725	48,983	48,388
Deposits in current accounts	359,429	386,004	428,718	505,716	631,256	710,905	687,363	695,861	739,888	779,833	798,079
Other deposits	**409,704**	**407,457**	**423,184**	**435,483**	**473,108**	**559,351**	**657,162**	**693,888**	**731,271**	**780,481**	**846,383**
Certificates of deposit + units in money market funds	**73,499**	**69,072**	**76,771**	**97,601**	**81,138**	**120,406**	**101,149**	**91,792**	**90,052**	**99,892**	**79,628**

Tabell 3: Bank liquidity (in millions of NOK)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Sight deposits, annual average	15,647	24,690	21,337	28,666	24,536	24,867	41,713	75,111	46,832	46,498	32,167
Banks' deposits at the central bank at the reserve rate										1 039[1)]	1,312
Deposits at the central bank (F-deposits)										26 344[1)]	11,402
Lending (F-loans + D-loans), annual average	538	2,978	18,788	14,694	34,411	46,670	67,515	66,242	72,759	32,351	15,352

[1] Average as from 3 October 2011

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	**41,767**	**41,562**	**43,728**	**45,887**	**49,218**	**50,439**	**50,413**	**50,356**	**50,450**	**50,315**	**51,179**
Total banknotes	**37,811**	**37,429**	**39,429**	**41,382**	**44,523**	**45,858**	**45,838**	**45,704**	**45,676**	**45,463**	**46,379**
1000-krone	22,599	22,167	23,555	24,649	25,818	26,179	25,371	24,382	23,134	21,678	21,180
500-krone	7,626	7,732	8,278	9,060	10,374	11,213	11,882	12,722	13,623	14,542	15,633
200-krone	4,573	4,674	4,792	4,819	5,296	5,381	5,522	5,580	5,846	6,103	6,335
100-krone	2,270	2,091	2,012	2,021	2,119	2,121	2,083	2,029	2,062	2,099	2,149
50-krone	744	765	793	833	916	964	980	993	1,012	1,041	1,080
Total coins	**3,955**	**4,133**	**4,299**	**4,506**	**4,695**	**4,581**	**4,575**	**4,652**	**4,774**	**4,852**	**4,800**
20-krone	1,387	1,561	1,667	1,778	1,849	1,665	1,541	1,556	1,599	1,629	1,638
10-krone	1,085	1,051	1,049	1,076	1,145	1,214	1,259	1,276	1,307	1,323	1,317
5-krone	505	515	538	563	598	630	654	664	674	679	662
1-krone	666	686	718	753	799	845	884	912	941	962	943
0.5 krone	182	191	199	208	218	228	237	245	253	260	241
0.1 krone	130	129	128	128	86	:	:	:	:	:	:

Payment infrastructure

Table 5: Institutional infrastructure

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of banks	**153**	**152**	**148**	**149**	**147**	**149**	**149**	**149**	**145**	**142**	**138**
Savings banks	129	129	127	126	124	123	121	118	113	111	109
Commercial banks	16	15	13	14	15	16	18	20	20	19	17
Number of foreign bank branches in Norway	8	8	8	9	8	10	10	11	12	12	12
Electronic money institutions		4	5	5	4	3	3	3	3	3	2

Table 6: Number of agreements

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Online banking agreements	**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**	**5,772,707**	**6,092,944**
Online banking agreements - retail customers	:	:	:	3,221,839	3,683,843	4,089,644	4,471,351	4,865,720	5,097,505	5,300,353	5,595,545
Online banking agreements - corporate customers	:	:	:	60,954	325,478	348,493	369,893	433,782	451,725	472,354	497,399
Agreements to offer electronic invoicing (eFaktura)[1] - corporate customers	:	:	:	:	330	460	532	648	772	945	1,071
Agreements to accept electronic invoicing (eFaktura)[1] - retail customers	:	:	:	:	2,149,356	2,914,946	4,074,429	5,249,722	6,358,929	7,932,093	9,713,391
Company terminal giro agreements					27,904	28,707	29,127	32,983	33,466	26,153	15,846
Postal giro agreements	1,787,462	1,707,428	1,540,768	1,453,825	1,189,770	1,152,349	906,957	810,818	759,995	723,867	681,023
Direct debit agreements (Avtalegiro and Autogiro)	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	13,162,659	14,393,988
Avtalegiro - payees	6,883	7,194	7,905	8,761	9,554	10,373	11,135	11,945	12,619	13,130	13,572
Autogiro - payees	1,265	1,232	1,187	1,243	1,441	1,350	1,170	1,342	716	708	690

[1] Includes interbank agreements to send and receive electronic invoices (eFaktura).

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of issued cards	**6,395**	**6,931**	**7,616**	**7,872**	**9,187**	**9,908**	**10,629**	**11,644**	**12,190**	**12,345**	**12,607**
Chip cards	:	:	:	:	1,235	2,540	3,848	6,516	10,066	11,600	12,053
Magnetic stripe cards	:	:	:	:	7,953	7,368	6,781	5,127	2,124	745	553
Number of functions in issued cards	**10,575**	**11,322**	**12,298**	**12,449**	**14,169**	**15,335**	**16,772**	**17,837**	**19,015**	**19,480**	**19,819**
Debit functions	**8,212**	**8,600**	**9,326**	**9,107**	**10,138**	**10,519**	**11,899**	**11,789**	**12,968**	**13,564**	**13,620**
BankAxept	4,362	4,527	4,985	4,894	5,537	5,569	6,218	6,057	6,620	6,897	6,945
Payment cards issued by international card companies	3,850	4,073	4,341	4,214	4,601	4,949	5,681	5,732	6,349	6,667	6,675
Billing functions (payment cards issued by international card companies)	**438**	**451**	**470**	**451**	**478**	**522**	**535**	**542**	**528**	**593**	**566**
Credit functions	**1,925**	**2,271**	**2,502**	**2,891**	**3,553**	**4,294**	**4,338**	**5,506**	**5,519**	**5,322**	**5,634**
Domestic credit cards	681	646	535	546	548	647	625	629	642	662	630
Payment cards issued by international card companies	1,244	1,624	1,967	2,345	3,005	3,647	3,713	4,877	4,877	4,660	5,004
Number of terminals that accept BankAxept cards	**82,294**	**93,456**	**94,386**	**96,591**	**100,021**	**109,821**	**119,953**	**122,359**	**125,684**	**130,397**	**137,564**
ATMs	**2,188**	**2,217**	**2,180**	**2,184**	**2,250**	**2,272**	**2,283**	**2,253**	**2,193**	**2,194**	**2,157**
Payment teminals (EFTPOS)	**80,106**	**91,239**	**92,206**	**94,407**	**97,771**	**107,549**	**117,670**	**120,106**	**123,491**	**128,203**	**135,407**
Owned by banks	65,374	66,207	68,197	66,786	74,303	75,460	77,804	77,892	:	:	:
Owned by others	14,732	25,032	24,009	27,621	23,468	32,089	39,866	42,214	:	:	:
Number of locations with payment terminals (EFTPOS) that accept BankAxept cards	**52,705**	**59,100**	**63,976**	**73,242**	**78,656**	**85,490**	**94,708**	**96,152**	**97,722**	**100,758**	**105,726**

Retail payment services

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	**960.4**	**1,039.3**	**1,144.9**	**1,235.5**	**1,341.0**	**1,476.3**	**1,602.6**	**1,699.8**	**1,835.6**	**1,975.4**	**2,139.0**
Debit and credit transfers (giros)	**440.5**	**442.8**	**465.6**	**480.4**	**489.3**	**510.7**	**526.6**	**540.0**	**561.9**	**573.9**	**595.5**
Electronic[1]	331.3	348.9	384.3	411.8	437.4	462.3	483.9	503.6	533.5	550.0	574.8
Paper-based	109.3	93.9	81.3	68.6	51.9	48.4	42.7	36.5	28.4	23.9	20.7
Payment cards (goods purchases)	**517.8**	**595.0**	**678.1**	**754.2**	**851.0**	**965.1**	**1,075.6**	**1,159.5**	**1,273.5**	**1,401.4**	**1,543.4**
Electronic	508.0	584.7	664.2	737.9	830.7	960.3	1,073.2	1,157.7	1,271.8	1,399.6	1,541.3
Manual	9.8	10.3	13.9	16.3	20.4	4.8	2.4	1.9	1.7	1.8	2.1
Cheques	**2.0**	**1.5**	**1.2**	**0.8**	**0.7**	**0.5**	**0.4**	**0.3**	**0.2**	**0.2**	**0.1**

[1] Figures for electronic giros up until and including 2001 do not include miscellaneous credit transfers, e.g. standing orders.

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	**440.3**	**442.8**	**465.6**	**480.4**	**489.3**	**510.7**	**526.6**	**540.0**	**561.9**	**573.9**	**595.5**
Credit transfers[1]	**393.9**	**395.5**	**418.2**	**431.6**	**439.6**	**453.5**	**467.2**	**474.5**	**491.3**	**497.9**	**513.1**
Electronic	**299.9**	**314.8**	**348.5**	**371.9**	**395.6**	**412.7**	**430.5**	**443.6**	**467.1**	**477.1**	**495.1**
Company terminal giro	153.2	164.4	160.2	95.8	51.5	46.1	43.2	44.1	44.9	47.1	14.5
Online banking	81.4	101.5	138.4	227.8	293.6	318.8	340.4	349.7	371.6	378.1	427.1
Online banking solutions for retail customers	:	91.6	112.0	131.8	144.0	154.2	171.2	205.4	220.2	229.6	243.0
Online banking solutions for corporate customers	:	9.9	26.4	96.0	149.6	164.6	169.2	144.4	151.4	148.4	184.1
Mobile banking	-	-	-	-	:	:	:	0.1	0.2	0.8	3.3
Mobile banking solutions for retail customers	-	-	-	-	:	:	:	0.1	0.2	0.8	3.3
Mobile banking solutions for corporate customers	-	-	-	-	-	-	:	0.0	0.0	0.0	0.0
Telegiros	26.8	25.5	24.8	21.8	16.9	13.9	12.2	12.7	11.1	9.7	8.3
Miscellaneous other electronic credit transfers	38.5	23.4	25.1	26.4	33.6	33.8	34.7	37.1	39.5	41.5	41.9
Paper-based	**94.0**	**80.6**	**69.7**	**59.8**	**44.0**	**40.8**	**36.7**	**30.9**	**24.2**	**20.8**	**18.0**
Company terminal giros and online banking as money order	4.9	4.2	3.0	2.6	1.0	1.7	1.3	1.2	0.9	0.7	0.6
Postal giros	61.7	52.1	44.6	38.0	32.6	29.0	26.1	23.8	19.9	17.7	15.7
Giros delivered at the counter - account debits	27.1	24.4	22.0	19.2	10.4	10.1	9.3	5.9	3.4	2.4	1.8
Miscellaneous giros registered in banks[2]	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct debits	**31.3**	**34.1**	**35.8**	**39.9**	**41.8**	**49.6**	**53.4**	**59.9**	**66.4**	**72.8**	**79.7**
Giros delivered at the counter - cash payments	**15.0**	**13.2**	**11.6**	**8.9**	**7.8**	**7.6**	**6.0**	**5.6**	**4.2**	**3.1**	**2.7**

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

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total use of Norwegian cards (in Norway and abroad)	**631.1**	**704.7**	**786.6**	**862.2**	**957.6**	**1,070.7**	**1,182.0**	**1,259.7**	**1,368.8**	**1,492.9**	**1,630.4**
Goods purchases	**517.8**	**595.0**	**678.1**	**754.5**	**851.0**	**965.1**	**1,075.6**	**1,159.5**	**1,273.5**	**1,401.4**	**1,543.4**
Goods purchases without cashback	385.2	456.8	533.6	618.5	769.1	887.4	1,002.4	1,088.5	1,208.3	1,340.8	1,487.5
Goods purchases with cashback	132.6	138.2	144.6	135.9	81.9	77.7	73.2	71.1	65.2	60.6	55.9
Cash withdrawals without goods purchases	**113.3**	**109.7**	**108.5**	**107.8**	**106.6**	**105.6**	**106.4**	**100.1**	**95.3**	**91.6**	**86.9**
Use of Norwegian cards by function											
Debit functions	**601.4**	**669.5**	**743.6**	**809.2**	**904.2**	**1,001.3**	**1,102.8**	**1,172.1**	**1,270.6**	**1,375.4**	**1,487.7**
BankAxept	548.3	615.3	681.7	745.7	817.4	896.1	987.7	1,045.0	1,123.6	1,207.7	1,299.1
Payment cards issued by international card companies	53.1	54.2	61.9	63.5	86.8	105.3	115.1	127.1	146.9	167.7	188.6
Billing functions (payment cards issued by international card companies)	**13.9**	**14.8**	**16.3**	**19.1**	**17.7**	**20.5**	**22.6**	**21.4**	**19.1**	**19.5**	**20.5**
Credit functions	**15.7**	**20.4**	**26.7**	**33.9**	**35.7**	**48.8**	**56.5**	**66.2**	**79.1**	**98.1**	**119.7**
Domestic credit cards	4.5	5.3	5.7	6.1	6.5	7.8	8.8	8.0	6.7	6.2	6.3
Payment cards issued by international card companies	11.2	15.1	21.0	27.8	29.2	40.9	47.8	58.2	72.4	91.9	113.5
Prepaid (e-money)[2]	**:**	**:**	**:**	**:**	**:**	**:**	**:**	**:**	**:**	**:**	**2.4**
Use of Norwegian cards abroad	**31.5**	**36.2**	**38.3**	**38.8**	**50.6**	**70.4**	**74.4**	**82.7**	**103.4**	**122.9**	**154.4**
Goods purchases	23.2	27.0	29.8	30.6	42.3	58.2	60.3	69.0	88.9	107.7	138.4
Cash withdrawals	8.3	9.2	8.6	8.3	8.3	12.2	14.1	13.7	14.5	15.2	15.9
Use of foreign cards in Norway	**8.6**	**9.5**	**10.8**	**13.6**	**14.3**	**14.3**	**16.3**	**17.5**	**19.3**	**22.5**	**27.1**
Goods purchases	7.3	8.1	9.3	12.4	12.6	11.7	13.5	15.1	17.0	20.1	24.7
Cash withdrawals	1.4	1.4	1.5	1.3	1.7	2.7	2.8	2.4	2.3	2.4	2.3

[1] Figures in the table apply to both manual and electronic card use (card use in EFTPOS terminals and online). Figures for 2001 do not include the use of international payment cards in terminals owned by entities other than banks and oil companies.

[2] Includes use of e-money cards in EFTPOS terminals that accept BankAxept cards.

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Use of Norwegian terminals[1]	**633.3**	**709.6**	**780.9**	**857.3**	**941.1**	**1,035.1**	**1,146.3**	**1,221.4**	**1,308.6**	**1412.7**	**1526.1**
Cash withdrawals from ATMs	103.5	102.1	99.3	98.7	99.8	95.9	94.9	88.8	83.0	78.7	73.3
Goods purchases in EFTPOS terminals that accept BankAxept	500.8	575.6	638.5	718.1	797.6	868.1	967.5	1,064.5	1,151.2	1236.8	1348.7
Of which BankAxept goods purchases with cashback	132.6	138.2	144.6	135.9	81.9		73.2	71.1	65.2	60.6	55.9
Goods purchases in other Norwegian payment terminals	29.0	31.9	43.1	40.5	43.7	71.0	84.0	68.2	74.4	97.2	104.1
Use of Norwegian cards in Norwegian terminals	**621.7**	**696.2**	**772.3**	**846.8**	**927.0**	**1,021.9**	**1,130.0**	**1,203.9**	**1,289.2**	**1,390.0**	**1,499.1**
Cash withdrawals from ATMs	**102.1**	**100.3**	**99.2**	**98.8**	**98.1**	**93.3**	**92.1**	**86.4**	**80.7**	**76.3**	**71.0**
BankAxept	96.6	95.6	93.2	91.7	88.7	86.7	84.5	78.9	74.6	70.5	65.3
Domestic credit cards	1.0	1.4	1.1	0.8	1.1	0.9	0.8	0.7	0.7	0.6	0.6
Cards issued by international card companies	4.5	3.3	4.9	6.3	8.4	5.6	6.8	6.7	5.4	5.2	5.0
Goods purchases in payment terminals	**519.6**	**595.9**	**673.1**	**748.0**	**828.9**	**928.6**	**1,037.9**	**1,117.5**	**1,208.5**	**1,313.7**	**1,430.5**
BankAxept - goods purchases (including purchases with cashback) in EFTPOS terminals	451.7	519.7	588.4	654.1	728.7	809.4	903.1	966.1	1,048.9	1137.1	1233.6
BankAxess - goods purchases	-	-	-	-	-	-	0.0	0.0	0.1	0.2	0.2
Domestic credit cards - goods purchases	3.0	3.8	4.1	4.8	5.3	6.7	7.8	7.1	5.8	5.3	5.3
Cards issued by international card companies - goods purchases	34.4	41.9	51.8	61.3	70.4	90.9	105.9	119.5	133.5	154.6	166.6
E-money cards - goods purchases[2]											2.4
Cards owned by oil companies	30.5	30.4	28.8	27.8	24.5	21.6	21.1	24.8	20.3	16.7	22.4
Use of foreign cards in Norway	**11.6**	**13.4**	**8.5**	**10.5**	**14.1**	**13.2**	**16.3**	**17.5**	**19.4**	**22.7**	**27.0**

[1] Figures for card use for goods purchases at payment terminals/EFTPOS terminals include online card use.
[2] Includes use of e-money cards in EFTPOS terminals that accept BankAxept cards.

Table 11: Cross-border transfers registered in the Register of CrossborderTransactions and Currency Exchange (in millions of transactions)

	2006	2007	2008	2009	2010	2011	2012
Transfers from Norway	**5.4**	**6.3**	**6.52**	**6.79**	**7.34**	**8.15**	**9.01**
SWIFT	5.2	5.9	5.92	6.09	6.58	7.34	7.96
Foreign currency cheques	0.1	0.1	0.16	0.17	0.17	0.16	0.12
Other transfers (MoneyGram, Western Union, etc.)	0.2	0.3	0.44	0.52	0.59	0.65	0.92
Transfers to Norway	**2.8**	**2.8**	**2.87**	**2.91**	**3.12**	**3.36**	**3.59**
SWIFT	2.8	2.7	2.82	2.86	3.07	3.30	3.53
Foreign currency cheques	-	0.0	0.03	0.03	0.03	0.03	0.02
Other transfers (MoneyGram, Western Union, etc.)	-	0.0	0.02	0.02	0.02	0.03	0.04

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	**6,225.1**	**6,934.7**	**8,963.5**	**8,247.9**	**9,272.8**	**10,837.8**	**11,686.8**	**11,508.8**	**12,496.3**	**13,279.2**	**13,733.5**
Debit and credit transfers (giros)	**5,943.5**	**6,653.3**	**8,656.0**	**7,909.5**	**8,904.8**	**10,428.8**	**11,229.7**	**11,031.0**	**11,986.0**	**12,727.3**	**13,130.7**
Electronic[1]	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	12,607.6	13,054.2
Paper-based	486.3	411.3	372.4	247.4	224.7	216.5	186.8	162.5	131.3	119.7	76.6
Payment cards (goods purchases)[2]	**224.9**	**236.6**	**265.0**	**305.5**	**352.2**	**396.1**	**445.8**	**465.8**	**500.1**	**544.2**	**595.0**
Electronic	215.4	227.9	254.1	289.5	336.3	390.2	442.2	463.3	497.6	541.3	590.9
Manual	9.5	8.7	10.9	16.0	15.9	6.0	3.5	2.5	2.5	2.9	4.1
Cheques	**56.6**	**44.9**	**42.5**	**32.9**	**15.8**	**12.9**	**11.3**	**12.0**	**10.3**	**7.7**	**7.7**

[1] Number of electronic giros in 2001 does not include miscellaneous credit transfers, e.g. standing orders.
[2] Figures for electronic card use in the years 2006 - 2011 included cashback in previously published Annual Reports on Payment Systems. As from the 2012 Report, figures no longer include cashback.

Table 13: Debit and credit transfers (giros) (in billions of NOK)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	**5,943.5**	**6,653.3**	**8,656.0**	**7,909.5**	**8,904.8**	**10,428.8**	**11,229.7**	**10,031.0**	**11,986.0**	**12,727.3**	**13,130.7**
Credit transfers[1]	**5,714.4**	**6,431.5**	**8,396.5**	**7,612.6**	**8,624.8**	**10,149.4**	**10,991.7**	**10,798.5**	**11,740.3**	**12,482.8**	**12,881.6**
Electronic	**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**	**12,377.1**	**12,815.5**
Company terminal giro	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	3,225.4	1,042.6
Online banking	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	8,492.0	11,163.2
Online banking solutions for retail customers	:	332.6	436.4	517.3	585.4	650.1	775.6	966.9	1,078.3	1,184.6	1,286.3
Online 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	7,307.4	9,876.8
Mobile banking	-	-	-	:	:	:	:	0.2	0.3	1.0	12.6
Mobile banking solutions for retail customers	-	-	-	:	:	:	:	0.2	0.3	1.0	12.6
Mobile banking solutions for corporate customers	-	-	-	-	-	:	:	0.0	0.0	0.0	0.0
Telegiros	54.3	51.0	48.4	43.8	37.5	31.0	29.7	32.8	29.0	26.1	22.3
Miscellaneous other electronic credit transfers	166.3	150.4	151.5	155.9	352.6	543.8	487.6	504.5	650.2	632.6	574.8
Paper-based	**406.4**	**354.1**	**291.4**	**163.5**	**168.2**	**156.9**	**132.1**	**117.2**	**103.9**	**105.7**	**66.2**
Company terminal giros and online banking as money order	36.8	33.4	27.2	4.5	11.7	15.7	10.5	13.8	11.4	7.7	7.4
Postal giros	175.7	184.6	161.1	103.0	81.7	72.0	62.6	53.1	43.5	38.0	32.0
Giros delivered at the counter - account debits	190.0	136.1	103.1	55.9	74.7	69.2	59.0	50.3	48.9	60.0	26.8
Miscellaneous giros registered in banks[2]	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Direct debits	**149.2**	**164.6**	**178.5**	**212.9**	**223.5**	**219.7**	**183.4**	**187.3**	**218.3**	**230.5**	**238.7**
Giros delivered at the counter - cash payments	**79.8**	**57.2**	**81.0**	**83.9**	**56.5**	**59.7**	**54.7**	**45.3**	**27.4**	**14.0**	**10.4**

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

Table 14a: Use of payments cards (in billions of NOK)[1]

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total use of Norwegian cards (in Norway and abroad)	**382.9**	**411.6**	**440.0**	**480.8**	**510.8**	**556.6**	**609.0**	**625.1**	**653.7**	**695.2**	**741.9**
Goods purchases	224.9	236.6	265.0	305.4	352.2	396.1	445.8	465.8	500.1	544.2	595.0
Cashback from EFTPOS terminals	47.5	48.3	48.3	49.4	28.8	28.1	27.8	27.8	25.7	24.3	23.0
Cash withdrawals without goods purchases	110.4	126.6	126.7	126.0	129.8	132.4	135.5	131.4	128.0	126.7	123.8
Use of Norwegian cards abroad	**29.3**	**33.6**	**34.4**	**35.5**	**40.5**	**58.5**	**62.2**	**66.8**	**75.1**	**87.6**	**102.9**
Goods purchases	17.4	20.4	21.8	23.5	28.5	40.7	41.9	45.6	53.8	65.9	80.3
Cash withdrawals	11.9	13.3	12.6	12.0	12.0	17.8	20.3	21.1	21.4	21.7	22.6
Use of Norwegian cards by function											
Debit functions	**344.5**	**371.0**	**393.5**	**429.1**	**447.3**	**483.7**	**525.9**	**535.8**	**561.4**	**589.5**	**619.7**
BankAxept	309.7	335.7	354.1	386.9	398.0	422.2	461.7	465.2	487.0	507.6	529.6
Payment cards issued by international card companies	34.8	35.4	39.4	42.2	49.2	61.5	64.3	70.6	74.4	81.9	90.1
Billing functions (payment cards issued by international card companies)	**17.5**	**16.9**	**17.8**	**19.7**	**19.0**	**22.9**	**25.1**	**22.9**	**20.5**	**21.7**	**23.3**
Credit functions	**20.8**	**23.8**	**28.8**	**32.0**		**50.0**	**58.0**	**66.4**	**71.9**	**84.0**	**98.6**
Domestic credit cards	8.3	7.5	7.6	5.3	8.7	9.5	10.1	8.9	8.3	8.4	9.3
Payment cards issued by international card companies	12.5	16.2	21.1	26.7	35.8	40.4	47.9	57.4	63.5	75.7	89.4
Prepaid (e-money) [2]	:	:	:	:	:	:	:	:	:	:	**0.2**
Use of foreign cards in Norway	**5.9**	**6.9**	**8.5**	**9.6**	**10.2**	**10.0**	**12.2**	**12.6**	**13.7**	**15.5**	**17.3**
Goods purchases	4.2	5.0	6.3	7.7	7.9	6.3	8.4	9.3	10.6	12.3	14.2
Cash withdrawals	1.7	1.9	2.2	1.8	2.4	3.7	3.8	3.3	3.1	3.2	3.1

[1] Figures in the table apply to both manual and electronic card use (card use in EFTPOS terminals and online). Figures for 2001 do not include the use of international payment cards in terminals owned by entities other than banks and oil companies.
[2] Includes use of e-money cards in EFTPOS terminals that accept BankAxept cards.

Table 14b: Use of terminals (in billions of NOK)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Use of Norwegian terminals[1]	**367.0**	**395.1**	**419.7**	**454.8**	**483.1**	**515.4**	**570.6**	**583.7**	**605.0**	**637.4**	**670.1**
Cash withdrawals from ATMs	114.0	115.0	113.1	112.0	119.2	117.8	118.5	113.2	109.5	108.0	104.2
Goods purchases in EFTPOS terminals that accept BankAxept cards	183.5	211.2	231.2	272.6	305.8	319.7	364.7	395.7	422.5	454.0	484.7
Cashback with goods purchases using BankAxept cards	47.5	48.3	48.3	49.4	28.8	28.1	27.8	27.8	25.7	24.3	23.0
Goods purchases at other Norwegian payment terminals	21.9	20.5	27.1	20.8	29.3	49.8	59.6	47.0	47.3	51.0	58.3
Use of Norwegian cards in Norwegian terminals	**357.6**	**387.5**	**413.3**	**452.3**	**473.1**	**505.8**	**558.5**	**571.0**	**591.0**	**621.9**	**653.1**
Cash withdrawals from ATMs	**112.4**	**112.6**	**112.8**	**112.1**	**116.9**	**114.1**	**114.8**	**109.9**	**106.4**	**104.8**	**101.0**
BankAxept	105.0	105.7	104.2	101.9	103.1	103.2	102.8	98.4	96.8	95.4	91.7
Domestic credit cards	1.4	2.1	1.7	1.3	1.6	1.4	1.4	1.2	1.1	1.0	1.0
Cards issued by international card companies	6.0	4.9	7.0	8.9	12.2	9.5	10.6	10.4	8.5	8.4	8.3
Cashback with goods purchases using BankAxept cards	**47.5**	**48.3**	**48.3**	**49.4**	**28.8**	**28.1**	**27.8**	**27.8**	**25.7**	**24.3**	**23.0**
Good purchases in payment terminals	**197.6**	**226.5**	**252.2**	**290.8**	**327.4**	**363.6**	**416.0**	**433.4**	**459.2**	**492.8**	**528.9**
BankAxept - goods purchases in EFTPOS terminals	157.2	181.6	201.7	235.4	266.1	290.9	331.0	338.9	364.3	387.4	414.3
BankAxess - goods purchases	-	-	-	-	-	-	0.0	0.1	0.2	0.5	0.5
Domestic credit cards - goods purchases	4.3	5.0	5.1	5.7	5.9	6.8	7.7	6.7	6.0	5.8	5.8
Cards issued by international card companies - goods purchases	24.6	28.0	33.1	36.6	44.8	55.1	63.9	74.3	76.1	84.7	92.7
E-money cards - goods purchases[2]	:	:	:	:	:	:	:	:	:	:	0.2
Cards owned by oil companies	11.6	12.0	12.4	13.1	10.6	10.8	13.3	13.4	12.5	14.4	15.4
Use of foreign cards in Norwegian terminals	**9.4**	**7.5**	**6.3**	**2.5**	**10.0**	**9.6**	**12.0**	**12.6**	**13.7**	**15.5**	**17.0**

[1] Figures for card use for goods purchases at payment terminals/EFTPOS terminals include online card use.
[2] Does not include use of e-money cards in EFTPOS terminals that accept BankAxept cards.

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

	2006	2007	2008	2009	2010	2011	2012
Transfers from Norway	**:**	**5,791.42**	**6503.06**	**6549.53**	**7,124.45**	**9,909.61**	**9,206.35**
SWIFT	:	5,153.21	5818.30	5544.91	5,496.78	7,928.95	7,274.50
Foreign currency cheques	766.23	636.92	683.04	1002.64	1,625.50	1,978.37	1,928.58
Other transfers (MoneyGram, Western Union, etc.)	0.62	1.28	1.72	1.99	2.17	2.29	3.26
Transfers to Norway	**:**	**4,047.01**	**4578.06**	**4377.50**	**4,366.06**	**5,023.60**	**5,634.59**
SWIFT	:	4,039.78	4574.04	4376.45	4,365.00	5,022.86	5,633.92
Foreign currency cheques	5.18	7.15	3.93	0.91	0.93	0.62	0.52
Other transfers (MoneyGram, Western Union, etc.)	0.04	0.08	0.10	0.14	0.12	0.12	0.16

Interbank

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
NICS											
NICS Gross	300	596	611	532	547	593	605	524	568	548	594
NICS SWIFT Net[1]	4,925	5,155	4,480	4,744	5,301	5,908	6,390	6,269	-	-	-
NICS Net (million)[2]	3.7	4.0	4.3	4.7	5.1	5.5	5.9	6.5	6.8	7.2	7.8
NBO											
Total number of transactions									1,151	1,138	1235
RTGS Gross transactions outside of NICS[3]						199	272	158	288	288	386

[1] Phased out in June 2010.
[2] Previous NICS Retail and NICS SWIFT Net payments below NOK 25m included as from June 2010 in NICS Net.
[3] Does not include transactions related to account management, interest, notes/coins or the government consolidated account scheme (SKK).

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

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
NICS	**212.5**	**248.7**	**195.7**	**200.8**	**224.8**	**254.5**	**246.6**	**213.1**	**196.5**	**221.4**	**247.8**
NICS Gross	149.5	187.8	129.4	135.5	155.3	176.8	165,9[1]	124.1	107.2	119.1	137.7
NICS SWIFT Net[2]	16.2	12.6	5.2	5.7	6.7	7.6	7.3	6.1	-	-	-
NICS Net[3]	46.8	48.3	61.1	59.6	62.8	70.1	73.4	82.9	89.3	102.3	109.2
NBO	**169.2**	**206.8**	**152.3**	**160.8**	**185.2**	**226.1**	**224.9**	**186.6**	**176.4**	**183.4**	**215.0**
NICS Gross	149.5	187.7	128.9	135.5	155.3	180.2	163,9[1]	122.0	106.3	119.3	137.7
RTGS Gross transactions outside of NICS	4.8	7.2	11.1	12.1	16.1	31.1	45.6	37.7	42.5	42.5	51.1
NICS SWIFT Net[2]	5.5	2.1	1.0	0.9	1.0	1.2	1.1	1.6	-	-	-
NICS Net[3]	6.9	6.7	7.6	8.5	8.1	8.1	9.2	17.1	16.3	12.5	17.4
VPO and Oslo Clearing	2.5	3.1	3.7	3.8	4.7	5.5	5.1	8.2	10.5	9.0	8.8
VPO					4.4	5.1	4.9	8.0	10.4	8.9	8.7
Oslo Clearing					0.3	0.4	0.3	0.2	0.1	0.1	0.1

[1] Gross transactions through NICS: The difference in value under NICS and NBO is partly due to the use of a backup solution in October 2008.
[2] Phased out in June 2010.
[3] Previous NICS Retail and NICS SWIFT Net payments below NOK 25m included as from June 2010 in NICS Net.

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

	2006	2007	2008	2009	2010	2011	2012
Norges Bank's settlement system (NBO): Banks with account in Norges Bank	145	142	143	140	134	129	130
Norges Bank's settlement system (NBO): Banks with retail net settlement in Norges Bank	23	23	22	21	21	21	22
DNB	104	103	103	106	105	103	98
Sparebank 1 Midt-Norge	17	18	16	16	13	12	11
Norwegian Interbank Clearing System (NICS)	146	146	143	145	142	138	132

Table 19: Participation in SWIFT

	2005		2006		2007		2008		2009		2010		2011		2012	
	Norwegian	Total	Norwegian	Total	Norwegian	Total	Norwegian	Total	Norwegian	Total	Norwegian	Total	Norwegian	Total	Norwegian	Total
Total	**32**	**7,863**	**32**	**8,103**	**32**	**8,386**	**35**	**8,830**	**36**	**9,281**	**37**	**9,705**	**38**	**10,118**	**39**	**10729**
Members	14	2,229	13	2,289	13	2,268	13	2,276	13	2,356	13	2,344	13	2,334	13	2398
Sub-members/ domestic users covered by members abroad	11	3,060	11	3,124	10	3,209	12	3,305	12	3,306	12	3,331	13	3,355	11	3340
Participants	7	2,574	8	2,690	9	2,909	10	3,249	11	3,619	12	4,030	12	4,429	15	4541

Table 20: SWIFT message traffic to/from Norway (in millions of transactions)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of messages sent	11.2	12.9	18.6	22.1	30.1	42.3	57.6	53.0	45.1	35.3	36.0
Number of messages received	8.7	10.4	13.7	13.5	15.3	17.3	20.2	19.4	20.4	21.8	22.0
Global SWIFT traffic	1,817	2,048	2,299	2,518	2,865	3,501	3,854	3,760	4,032	4,431	4,589

Prices

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

	2004 til 2008[1]			2010 til 2012[2]							
				Non-loyalty schemes				Loyalty schemes			
	2004	2006	2008	2010	2011	2012	2013	2010	2011	2012	2013
Payments											
Online banking (with CID), per payment	2.0	2.1	2.0	1.6	1.5	1.7	1.3	0.1	0.0	0.0	0.0
Online banking, annual fee				29.0	10.6	19.6	14.2	0.2	0.3	1.6	1.5
Direct debit (AvtaleGiro), per payment			2.1	1.6	1.5	1.6	1.4	0.1	0.0	0.0	0.0
Mobile banking (with CID), per payment				1.7	1.6	1.7	1.3	0.1	0.1	0.0	0.0
Mobile banking - transfers between own accounts, per transfer				0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0
Mobile banking - information by SMS				2.4	2.5	2.5	2.4	1.8	2.1	1.4	1.1
Credit transfer via postal giro, per payment	6.5	6.9	7.0	7.2	7.5	8.1	8.8	7.7	8.1	8.3	9.2
Giro over the counter - account debit, per payment	30.0	33.4	33.6	46.9	49.0	56.5	63.3	38.6	39.9	54.6	61.3
Giro over the counter - cash payment, per payment	41.9	42.0	43.7	62.8	63.4	79.1	81.8	57.4	59.9	78.2	80.5
BankAxept cards in payment terminals (EFTPOS), per payment	2.1	2.3	2.3	1.7	1.6	1.8	1.5	0.0	0.0	0.1	0.0
Credit cards from international card companies, annual fee				136.9	158.5	150.3	145.8	17.5	20.2	27.4	14.3
BankAxept cards (combined with debet card from int. card comp.), annual fee	265.9	260.7	266.6	243.3	246.2	260.7	268.2	192.1	191.1	208.6	218.8
Cheques - retail customers, per cheque booklet				14.1	19.3	21.3	17.8	20.8	15.3	4.2	18.4
Cheques - retail customers, per cheque payment	20.6	27.3		23.5	21.0	40.0	44.0	22.8	23.7	35.7	38.7
ATM withdrawals using BankAxept											
Own bank's ATMs during opening hours, per withdrawal	0.0	0.2	0.2	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.0
Own bank's ATMs outside opening hours, per withdrawal	3.9	3.9	3.8	2.5	2.4	2.5	2.7	0.0	0.0	0.1	0.0
Other banks' ATMs during opening hours, per withdrawal	4.7	6.4	6.6	5.0	4.9	4.9	4.9	5.1	5.2	5.5	4.8
ATM withdrawals using credit cards from international card companies											
Own bank's ATMs during opening hours, per withdrawal				25.3	25.3	24.8	24.3	29.8	29.4	29.3	30.1
Other banks' ATMs during opening hours, per withdrawal				25.4	24.9	24.9	24.4	29.9	29.5	29.3	30.2

[1] Average fees for customers who do not belong to loyalty schemes or receive any other discounts. Fees are based on a survey of 24 banks with an 85% market share by deposits in transactional accounts. Average fees are calculated by weighting each bank's fees by deposits in transactional accounts and then weighting average fees for commercial and savings banks by their percentage share of payment service transactions.

[2] New average fees as from 2009 for 104 banks with a 93% market share by deposits in salary accounts. Fees from Finansportalen (Norwegian Consumer Council). Average fees are calculated by weighting each bank's fees by the bank's percentage of deposits on salary accounts. For banks with several customer loyalty schemes, the median fee for the bank's customer loyalty schemes has been used to calculate the average fee for all banks for services under customer loyalty schemes.

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

	2002	2004	2006	2008	2010	2011	2012	2013
Payments								
Electronic giro services								
Direct Remittance without notification	2.8	3.0	3.4					
Direct Remittance with notification	4.8	5.2	5.5					
Direct Remittance with CID	1.4	1.5	1.6					
Other company terminal giro without notification	2.1	1.6	1.7					
Other company terminal giro with notification	3.6	3.8	3.7					
Other company terminal giro with CID	1.0	1.0	2.0					
Online banking - without notification				1.5	1.5	1.5	1.5	1.5
Online banking - with notification				4.2	4.2	4.2	4.2	4.2
Online banking - with CID				1.1	1.1	1.1	1.1	1.1
Paper-based giro services								
Direct Remittance sent as money order	32.6	35.7	47.9					
Other company terminal giro sent as money order	32.6	35.3	37.2					
Corporate online banking sent as money order				50.2	73.1	73.0	74.8	77.1
Receipt of payments								
Electronic giro services								
Direct debits (Avtalegiro) without notification from the bank	1.4	1.5	1.4	1.3	1.2	1.3	1.3	1.3
Optical Character Recognition (OCR) - File	1.1	1.2	1.3	1.3	1.3	1.4	1.4	1.5
GiroMail				0.0	0.0	0.0	0.0	0.0
Paper-based giro services								
Optical Character Recognition (OCR) - Return	3.7	3.9	4.4	3.3	3.9	4.4	2.9	2.8

[1] Average fees for customers who do not belong to loyalty schemes or receive any other discounts. Fees are based on a survey of 24 banks with an 85% market share by deposits in transactional accounts. Average fees are calculated by weighting each bank's fees by deposits in transactional accounts and then weighting average fees for commercial and savings banks by their percentage share of payment service transactions.

Table 23: Prices for transfers from Norway to EU/EEA countries. Weighted average (NOK) for a sample of banks. 1 January each year

	Electronic payment order/ automated processing								Manual payment order							
	2006	2007	2008	2009	2010	2011	2012	2013	2006	2007	2008	2009	2010	2011	2012	2013
Ordinary SWIFT transfer in NOK																
Without BIC and IBAN, NOK 2 500	59.9	64.7	64.7	65.8	63.8	64.3	61.3	61.5	136.4	136.4	145.8	157.8	157.1	161.7	162.9	157.83
With BIC and IBAN, NOK 2 500	40.6	45.6	45.4	58.3	57.0	56.9	56.4	55.4	125.0	128.6	131.0	143.0	146.1	150.2	152.3	156.32
Ordinary SWIFT transfer in EUR																
Without BIC and IBAN, NOK 2 500 equivalent	59.9	63.4	63.6	64.6	60.9	65.1	61.3	61.5	136.4	136.4	145.8	157.8	157.1	157.9	159.1	154.69
With BIC and IBAN, NOK 2 500 equivalent	32.5	33.9	29.9	29.7	28.9	28.7	28.7	27.6	110.1	122.6	126.5	139.9	142.8	146.6	148.7	150.44
SWIFT express transfer in NOK																
Without BIC and IBAN, NOK 150 000	299.2	348.0	332.7	349.3	330.2	331.7	338.9	339.8	381.1	381.6	387.7	405.0	396.3	402.7	402.6	391.75
With BIC and IBAN, NOK 150 000	289.9	305.7	300.3	308.1	299.4	300.1	307.5	305.6	371.5	373.9	373.0	390.3	385.3	391.3	391.8	390.40
SWIFT express transfer in EUR																
Without BIC and IBAN, NOK 150 000 equivalent	299.2	348.0	333.2	349.8	330.2	340.9	348.5	339.9	381.1	381.6	387.8	405.1	396.3	399.3	399.1	388.88
With BIC and IBAN, NOK 150 000 equivalent	282.4	303.4	298.0	304.8	296.5	296.8	294.4	289.4	362.3	373.9	372.4	389.6	384.6	390.5	391.1	390.40
Cheques to other countries																
Equivalent to NOK 2 500	-	-	-	-	-	-	-	-	202.5	204.6	207.1	221.5	218.4	203.6	222.9	251.30

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

	Receipt of payments from EU/EEA countries							
	2006	2007	2008	2009	2010	2011	2012	2013
Receipt of payments in EUR								
Without BIC and IBAN, NOK 2 500 equivalent[1]	86.4	80.8	80.8	59.9	63.0	61.1	60.8	58.2
Without BIC and IBAN, NOK 150 000 equivalent	93.0	85.1	84.6	62.8	66.0	64.4	81.6	81.2
With BIC and IBAN, NOK 2 500 equivalent[1]	13.2	12.6	10.4	16.0	17.2	18.5	18.6	21.7
With BIC and IBAN, NOK 150 000 equivalent	29.6	12.6	10.4	16.0	17.2	18.5	18.6	21.7
Receipt of payments in other currencies								
Without BIC and IBAN, NOK 2 500 equivalent[1]	96.5	92.9	90.6	70.2	71.6	70.5	70.2	65.7
Without BIC and IBAN, NOK 150 000 equivalent	96.5	98.0	96.4	96.7	93.2	92.2	91.4	88.1
With BIC and IBAN, NOK 2 500 equivalent[1]	96.5	92.3	90.2	69.6	71.1	70.5	70.2	65.7
With BIC and IBAN, NOK 150 000 equivalent	96.5	95.2	94.5	74.2	73.9	73.3	90.4	86.3

[1] Price data for the period 1 Dec. 2004 – 1 Jan. 2006 refer to payments in the amount of NOK 50 000.

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: A form of direct debit allowing an enterprise to draw funds from a payer's bank account for outstanding receivables on the due date.

Avtalegiro: A form of direct debit whereby funds to cover recurring payments are automatically drawn from the payer's bank account on the due date.

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

BankAxess: Payment solution for online payments from bank accounts using BankID.

BankID: A PKI-based (public key infrastructure) form of electronic identification which can be used for online payments or payments via mobile device.

Bedriftsterminalgiro (company terminal giro systems): Payment solutions for enterprises. The solutions require installation of software in the user's/enterprise's computer system. Used for both individual payments and retail payments to payees with or without bank accounts.

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

Electronisk handelsformat (EHF): A data interchange format for electronic invoicing used in Norway and based on the CEN BII standard.

EVRY: Formerly EDB ErgoGroup. IT company established through the merger of Ergo Group AS and EDB Business Partner ASA. The company is a key provider of IT services to DNB, the Sparebank 1-group and Norges Bank.

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

Nasdaq OMX Oslo NUF (branch of Nasdaq OMX Stockholm): Central counterparty for energy derivatives.

Nets: Nordic company providing payment, card and information services established through a merger of BBS (Norwegian company providing centralised management of payment transactions) and its Danish counterpart PBS Holding.

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

NICS: Norwegian Interbank Clearing System is the banks' joint clearing system for transactions denominated in NOK. It is used by all banks that are part of the industry's common payment services infrastructure. Cleared positions in NICS are settled in NBO.

NOS Clearing: Central counterparty for freight derivatives, seafood derivatives, etc.

Oslo Clearing: Central counterparty for trading in equity capital instruments and derivatives with securities as the underlying instrument.

PEOPPL (Pan-European Public Procurement Online): A European e-commerce pilot project intended to simplify cross-border tendering and facilitate doing business with public sector entities in EU countries other than the one in which a contractor is domiciled.

Postal giro: The payer sends a paper-based credit transfer through the post to Nets, instead of paying a giro over the counter at a bank.

VPO: Norwegian securities settlement system.

VPS: The Norwegian Central Securities Depository.

Guide to the tables

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

Some data that appeared in the *Annual Report on Payment Systems* in 2011 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.
- General data: Statistics Norway and Finanstilsynet (Financial Supervisory Authority of Norway).
- Information about giros, cheques, payment cards, ATMs and payment terminals: Finance Norway, Nets Norway AS, EVRY AS, Skandinavisk Data Center AS, Eika-Gruppen AS, Nordea Bank Norge ASA, DNB, Danske Bank, Skandinaviska Enskilda Banken AB, Cultura Sparebank, Teller AS, Visa Norge Bankgruppe FLI, Eurocard, Filial av Eurocard AB, SEB Kort AB Oslo branch, Diners club Norway, Ikano Bank SE Norway branch, Handelsbanken, Elavon Financial Services Norway branch, American Express Company AS, GE Money Bank, Entercard Norge AS, Statoil Norge AS, ST1 Norge AS, Uno-X Finans AS and A/S Norske Shell.
- Information about withdrawals from ATMs using domestic credit cards and payment cards issued by international card companies was provided by the owners of the ATMs until end-2005. Information as from 2006 has been provided by card issuers.
- Information about cross-border payments other than those executed using 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).
- Fees for retail payment services as from 2009 are based on price information for 92 banks from www.finansportalen.no. These banks had 93 % of the market measured by salary account deposits at the end of November 2012. Prior to 2009, fees for retail customers, fees for corporate customers and cross-border payments were collected from price lists and a survey of 23 banks. These banks had 85 % of the market measured by deposits. All fees are as at 1 January.

Comments on individual tables

Table 6 – Number of agreements

- The number of agreements to offer and accept eFaktura electronic invoicing refers to interbank agreements to send and receive electronic invoices. They do not include sending and receiving bilaterally, via access points or electronic invoice transmitters, The number of agreements to receive EHF invoices refers to agreements to receive electronic invoices in EHF-format transmitted via access points in the PEOPPL infrastructure

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

- The table shows all payment cards in Norway except for e-money cards and virtual cards (accounts in card systems that do not have physical cards, e.g.travel accounts).

- 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 EFTPOS terminals owned by banks in the period 1991–2009 refers to terminals owned and leased by banks. Since 2009, most banks have transferred their lease agreements to Nets, so that the terminals are owned by Nets instead. Thus, as from 2010, only a minority of terminals are owned by banks. The number of locations with payment terminals refers to shops, post office branches, etc.

Tables 8 and 12 – Use of payment services

- Miscellaneous other credit transfers (standing orders etc.,) are not included in the figures for electronic credit transfers prior to 2002.

- Approximately 30% payments by cheque up to 2005 have been estimated by Norges Bank.

- For Table 12, cashback was included in the figures for use of electronic cards in 2006–2011 in previous publications. As from this year, cashback is not included in the figures.

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

- Figures for miscellaneous giros registered in banks include both cash payments and account debits. Figures for cash payments in 2005 have been estimated by Norges Bank in consultation with Nets (formerly 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. As from 2007, figures for online banking also include payments made by mobile phone/mobile banking.

- Tables 10a and 14a – Use of payment cards

- The tables show total use of payment cards (Norwegian cards in Norway and abroad, and foreign cards in Norway) excluding e-money cards used in terminals other than those that accept BankAxept cards and virtual cards (accounts in card systems that do not have physical cards, e.g. travel accounts).

- Figures for use of cards in 2001 refer to manual use of payment cards and use of such cards in terminals that accept Bankkort/BankAxept cards. Figures as from 2002 refer to all manual and electronic use of payment cards.

- 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.

- 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 2012, 3% of transactions and 2% of the turnover constituted such use of cards abroad.

Tables 10b and 14b – Use of terminals

- The tables show total use of Norwegian and foreign cards in domestic terminals. To illustrate terminal usage, the use of oil companies' cards are included, even though such cards are not defined as payment cards and included in Tables 10a and 14a.

- Figures for cashback up to 2006 are based on estimates from Nets 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.

- Information on ATM withdrawals using domestic credit cards and payment cards issued by international card companies until end-2005 comes from ATM owners, whereas information as from 2006 comes from card issuers.

- Use of e-money cards in EFTPOS terminals that accept BankAxept cards are included in the figures from 2012. Relevant e-money cards include international e-money cards (VISA Cash) and universal gift cards.

Tables 11 and 15 – Cross-border transfers registered in the Register of Crossborder Transactions and Currency Exchange

- The statistics refer to payments registered in the Register of Crossborder Transactions and Currency Exchange in the period 2006–2012. There is some uncertainty attached to the figures for 2006, as well as the figures under "Other transfers" for 2012.

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

- Fees for retail payment services (Table 21) are based on price information from www.finansportalen.no. There are two average fees for each service, one for loyalty scheme customers and one for non-loyalty scheme customers. Average fees are calculated by weighting fees for each bank based on that bank's share of salary account deposits. When a bank has more than one loyalty scheme with different fees for a service, the median of these fees is used to calculate the average fee for all banks for services in loyalty schemes.

- Fees for corporate customers are collected from online price lists, and fees for cross-border payments are taken from surveys. Fees relate only to customers that do not belong to loyalty schemes or receive any other discounts. Average fees are calculated by weighting fees for each bank based on the bank's share of deposits in transactional accounts.

- The fee for a postal giro refers to each form sent. Postage is an additional charge.

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

- Cross-border fees refer to fixed sum transfers in the EEA with or without BIC and IBAN information. Fees 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 0.5 of the unit used

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