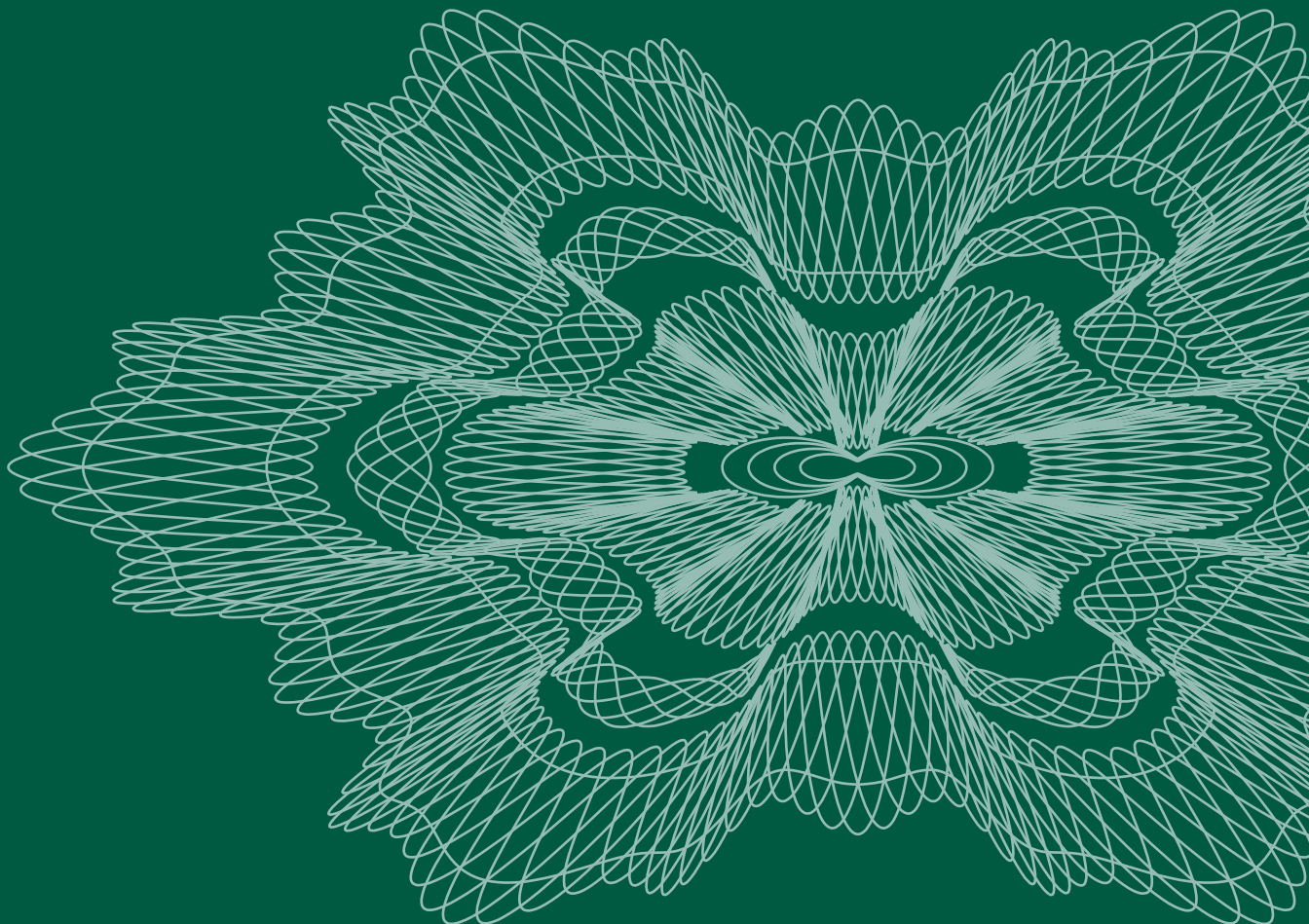




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CONTENTS

Securities settlement in Norway

By Vigdis Husevåg and Kristin Bjerkeland **144**

Liquidity and supply in the Norwegian government bond market

By Jesper Hein **157**

Norges Bank's submission of 27 August 2003 to Kredittilsynet **166**

Statistical annex **171**

Economic Bulletin contents 2003 **I**

Securities settlement in Norway

How will developments in Europe affect the Norwegian system?

Vigdis Husevåg, senior economist, Banking Department, and Kristin Bjerkeland, economist, Financial Infrastructure and Payment Systems Department, Norges Bank¹

The Norwegian securities settlement system was modernised in the spring of 2003, and the Norwegian Central Securities Depository (VPS), which had been a foundation, became a public limited company. Services related to securities settlements and the organisation of central securities depositories are also undergoing change in other countries. This article examines important changes in Norway and identifies some of the main trends in the Nordic countries and Europe in general. Against this background, we outline some possible future trends.

Securities are playing an increasingly important role in financing private and public activities and as a savings and investment instrument for households and enterprises. Market participants' perceptions of risk and profitability for different securities are affected by their confidence in the marketplaces where securities are traded. Smoothly functioning securities markets depend on the existence of safe, efficient securities settlement systems. Securities settlement systems are also very important for other payment and settlement systems, including those of central banks. This is partly because securities are used as collateral for various types of loans from the central bank. Thus, a smoothly functioning securities settlement system also affects the conduct of monetary policy.

The market value of listed Norwegian securities was NOK 1000 billion at the end of 2002, and stock market turnover averaged NOK 11.7 billion per day in 2002.² Because of the size and function of the securities markets, safe, efficient solutions for trading, clearing, settlement and ownership registration are very important. In Norway, most securities trading takes place on the Oslo Stock Exchange. The Norwegian Central Securities Depository (VPS) and Norges Bank handle settlement, while VPS handles clearing and registration.

The Norwegian systems are improved at regular intervals to provide Norwegian and foreign banks, brokers and investors with optimal conditions for securities trading. During the last few years, there has been considerable focus on making the Norwegian securities settlement system, VPO, safer and more efficient. The purpose of the Act relating to the Norwegian Securities Depository³, which entered into force on 1 January 2003, is to lay the foundation for safe, orderly and efficient registration of financial instruments (securities and derivatives) and appurtenant rights. The Act facilitated an important modernisation of the securities settlement process and abolished the VPS monopoly on securities registration. The main content of the Act is presented briefly in Box 1.

Systems for trading, settlement and registration of securities also change constantly in other countries. As a result of the EEA Agreement, Norwegian regulations must comply with the same requirements as regulations in EU member countries. The EU's work to establish a common capital market for member countries will also affect Norwegian systems. In addition, a number of international fora, both private and public, are preparing recommendations and standards for securities settlement systems. Of course, such international recommendations will also influence Norwegian systems and market participants.

This article starts with a brief description of how the Norwegian securities settlement system functions. We then consider the impact of the most recent modernisation on system safety and efficiency.⁴ The market structure and settlement systems are also being changed in other Nordic and European countries, and we examine some of these trends. Finally, we identify some of the challenges and opportunities that lie ahead for the Norwegian system. The article deals with securities, and other financial instruments, such as derivatives, are only mentioned by way of exception.

1. A brief description of the Norwegian securities settlement system

How do securities change owner?

The primary function of the securities market is to raise capital in the form of loan capital or equity (primary market) for private and public enterprises and to ensure that investors can easily trade securities, depending on what are favourable investment instruments, at any given time (secondary market).

New capital may be acquired by issuing new securities. A registrar registers these securities in VPS in the issuers' securities account.⁵ After the investors have registered as buyers (subscribed shares), a settlement

¹ Our thanks go to colleagues at Norges Bank and other Nordic central banks, in particular to Gunnvald Grønvik and Helge Eide, for helpful comments and contributions.

² By way of comparison, Norway's GDP was approximately NOK 1600 billion in 2002.

³ Titles of Acts are given in full in the literature list.

⁴ See Brufnot and Flatraaker (1997) and NOU (2000:10) for a more detailed description of the system prior to the changes.

⁵ A registrar is an enterprise that has been approved by VPS to manage securities accounts in VPS on behalf of the issuer or investor.

Box 1: The new Act relating to the Norwegian Securities Depository

The new Act relating to the Norwegian Securities Depository entered into force on 1 January 2003 and replaced the former Act relating to the Norwegian Securities Registry of 1985. With this change, VPS' legal monopoly as a securities depository was abolished, and a licence from the Ministry of Finance is now required of any entity wishing to operate as a securities depository. According to the Act, a securities depository shall be organised as a public limited company. Since a securities depository serves a very important function in the securities market, any winding-up shall in general be conducted according to the rules in the Bank Guarantee Act (Proposition no. 39 (2001-2002) to the Odelsting, p. 9) concerning the initiation of insolvency proceedings.

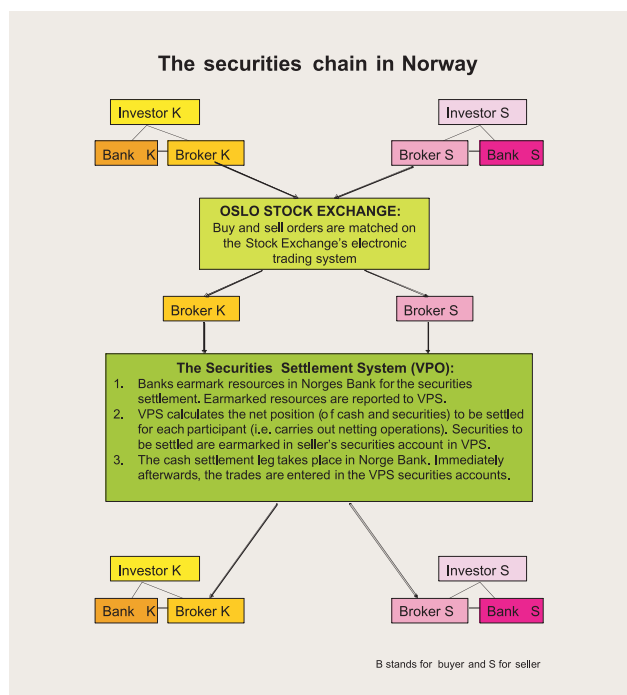
The purpose of the new Act is to lay the foundation for secure, orderly and efficient registration of financial instruments and appurtenant rights. An investor will be required to establish an account in a securities depository before acquiring financial instruments. One of the main purposes of such registration is to establish legal protection for various transactions. According to the new Act, rights in a securities depository take legal effect immediately after registration. An individual who has already entered a right in the depository will have priority over colliding rights (including claims from creditors) that have been submitted at a later time (Proposition no. 39 (2001-2002) to the Odelsting, p. 9).

All financial instruments may be entered in the securities depository. The Act requires registration for equities and subscription rights in Norwegian public limited companies and for Norwegian bearer bonds. Registration in a securities depository assumes that the rights are not connected with a physical document or that such a document has been destroyed, placed in safe custody or otherwise taken out of circulation.

The point of departure and main rule in Norway is that financial instruments are registered in the securities depository in the investor's name. In some cases, the custodian bank is allowed to register, which means that the name of the actual owner does not appear in the securities depository. The custodian bank must be approved by Kredittilsynet (Financial Supervisory Authority of Norway). Registration of equities by the custodian bank is not permitted for Norwegian investors (see the Norwegian Public Limited Companies act).

will be made where the issuing enterprise is the seller and the subscribing investor is the buyer. Somewhat simplified, we can say that a securities trade has been settled when the buyer has received the security and the seller has received the money and these transactions cannot be reversed. Securities that are settled in VPO do not exist in physical form but only as registrations in VPS. Transfer of ownership of the securities is executed by means of electronic registration in VPS.

The process that occurs from the time an investor decides to trade securities until the trade has been settled is called the securities chain. This process is presented schematically in Chart 1. The chart illustrates a trade that is initiated via a broker on the Oslo Stock Exchange between a buyer (B) and a seller (S) (secondary market). Both the securities and the cash leg of the transaction are settled in VPO.⁶ The chart also illustrates settlement in the primary market, although the trade then takes place between the issuer and the investor.



Investors who wish to trade securities on the Oslo Stock Exchange must have an account with a broker and a bank, as indicated in the chart.⁷ A securities transaction is initiated when a broker (securities dealer) places a trade order in the Oslo Stock Exchange's electronic trading system, either on her own or on an investor's behalf. The trade order specifies the securities that the investor wishes to buy or sell, the volume and the bid price. The stock exchange's electronic system connects matching buy and sell orders, and trades are concluded continuously as soon as a buy and a sell order match with regard to price, volume and any other terms. The buying and selling brokers must then report the trade for settlement in VPO.

⁶ Transactions that are conducted without a broker are settled in accordance with special routines described in NOU 2000:10, p. 32.

⁷ This applies to investors that are not brokers or banks.

In addition to Norges Bank, which is responsible for issuing and trading government securities, 19 banks and 23 brokers currently participate in VPO. There are two securities settlements daily in Norway, one at around 6 am and one at 12 noon.

To simplify, we present the VPO process in three steps. First, prior to each settlement, banks must earmark funds to cover their expected position in the settlement. These earmarked funds are reported to VPS. The broker's financial positions in VPS are settled over the banks' accounts in Norges Bank on the basis of guarantee bank agreements.⁸ Therefore, the banks' expected position in a settlement is the sum of the positions of the brokers for whom the bank is a guarantor and the bank's own position.

The next stage in the process is that VPS clears each participant's net position in the settlement on the basis of stock exchange transactions that have been sent in to VPO for settlement. A net cash position and a net position for each security is calculated for all participants. The calculated net positions are multilateral, i.e. they represent the total net position of the participant in relation to the other participants in the settlement.⁹ Net settlement therefore saves liquidity for participants, in contrast to separate settlement of each individual transaction (gross settlement). Securities to be settled are reserved in the sellers' securities account in VPS.

The third and final stage of the process is the actual

cash settlement in Norges Bank and the book entry of the securities in VPS. As soon as the cash position is settled and entered in each bank's settlement account in Norges Bank, VPS enters the transactions in the securities accounts with immediate legal effect. Net positions amounting to about NOK 2.5 billion are settled daily in connection with securities settlements in Norges Bank.

As described above, investors do not participate in VPO unless the investor is a bank or a broker that is trading on their own behalf. After the securities settlement is completed, a cash settlement must be made between investors, brokers and banks, as shown at the bottom of the chart. Norwegian investors' stock transactions are entered directly in the investor's securities account in VPS.¹⁰ Foreign investors may register securities in the name of their bank. Such a bank is called a custodian bank and it has an account in VPS on behalf of the investor. With regard to bonds, both Norwegian and foreign investors may register in their own name or in the name of their custodian bank. Registration at the investor level is also very common in the other Nordic countries, while registration via the custodian bank is more common in other countries.

According to CESR/ECB (2003, p. 26), the standard settlement day in most countries is three days after the trading day (T+3 settlement, where T is the trading day). T+3 is also the standard in Norway, but same day settlement, or T+0 settlement, is also possible. All securities

Box 2: Risk in securities settlement

The following is a brief overview of the types of risk associated with securities settlement. More detailed definitions are provided in BIS (2001).

Credit risk

The risk of loss equivalent to the full value of a transaction. Participants in VPO are protected against this risk because the transfer of securities is linked to the transfer of payment in a way that ensures payment on delivery (Delivery Versus Payment - DVP). This means that the securities are transferred if and only if the cash settlement has been executed.

Liquidity risk

The risk that the cash or securities are not received at the agreed time.

Market risk (replacement risk)

The risk of loss because a trade is not settled as agreed, making it necessary to trade again at a less favourable price. Market risk depends on price volatility, the length of the settlement period and liquidity in the market.

Operational risk

The risk of error in computer systems and internal control. Operational risk may, for example, be the result of inadequate procedures, malfunctions in computer systems, a breach of rules, fraud, fire or terrorist attacks.

Legal risk

The risk of loss due to a lack of clarity or uncertainty about legal aspects of the settlement system.

Custody risk

The risk of loss when the custodian holding securities or money on behalf of others becomes insolvent or defaults.

Systemic risk

The risk that one market participant's financial problems will spread to others, thus threatening financial stability.

⁸ When brokers are part of a bank group, their transactions are settled over the bank's account in Norges Bank. Other brokers who participate in VPO must enter into an agreement with a bank regarding the right to draw on the bank's account in Norges Bank.

⁹ In such a settlement, the numerical value of participants' net debit positions and net credit positions is the same (zero sum game).

¹⁰ Norwegian investors" refers to investors that are resident in Norway (physical persons) or companies that are registered in Norway.

trading entails a certain degree of risk that the trades initiated cannot be settled on the agreed day. This risk may be due to the seller's lack of securities, the buyer's lack of sufficient cover or both.

The size of the Norwegian market and the degree of internationalisation

The market value of listed Norwegian securities was NOK 1000 billion at the end of 2002, while stock market turnover in 2002 averaged NOK 11.7 billion per day. According to the *Annual Report on Payment Systems 2002*, an average of approximately NOK 2.5 billion was settled in VPO daily (see Norges Bank 2003, p. 53). The amount has been roughly the same following the introduction of two settlements daily in March 2003. Approximately 90 per cent of the volume is settled in the morning settlement.

There are currently 44 brokers on the Oslo Stock Exchange. Fifteen of these are remote members, i.e. brokers that are not established in Norway. Roughly 27 per cent of the market value of shares listed on the Oslo Stock Exchange was owned by foreign investors in 2002, but they accounted for more than 50 per cent of the transactions.

2. Developments in the Norwegian securities settlement system

The new Act relating to the Norwegian Securities Depository has made it possible to modernise the Norwegian system to bring it into line with international recommendations in the area.¹¹ The Act abolishes VPS's exclusive right to register securities in Norway and provides for important changes connected with settlement and collateralisation. According to the old Norwegian Securities Registry Act of 1985, rights registered in VPS were not protected under the law in the event of bankruptcy until the day after registration. Therefore, securities settlement and collateralisation of securities in VPS were executed only once a day. According to the new Act, rights in VPS are legally binding immediately upon registration. The systems for both settlement and collateralisation were therefore modernised in spring 2003. The modernised VPO now has two net settlements daily and it is possible to settle a trade on the same day that it is initiated on the stock exchange (T+0 settlement). Two-thirds of the collateral used by banks for various types of loans in Norges Bank is collateralised in VPS. This collateral may now be changed through the day with immediate legal effect. This may contribute to making the money market more efficient and to simplifying monetary policy management.

Conversion of VPS

VPS was established in 1985 as a self-owned foundation and in spring 2003 was converted to a public limited company through an initial public offering. The conversion is described in the prospectus from VPS (see VPS 2003). VPS is now mainly owned by the largest users, a model that is also common in other countries. In some countries, the central bank is also a shareholder, but

Box 3: The authorities' role and responsibility in connection with securities settlement.

Norges Bank

According to the Norges Bank Act, "Norges Bank shall promote an efficient payment system domestically as well as vis-à-vis other countries." Efficiency is also contingent on systems that are sufficiently robust. As settlement bank for the cash leg of securities settlements, Norges Bank will regularly evaluate the significance of these settlements for financial stability (see Norges Bank 2002, p. 11).

Pledged securities in VPS account for approximately two-thirds of the value of banks' collateral for loans in Norges Bank.

The Ministry of Finance

VPS's registration activities are subject to a licence from the Ministry of Finance (see Act relating to the Norwegian Securities Depository, chapter 3). VPS was granted such a licence on 29 January 2003.

Kredittilsynet (Financial Supervisory Authority of Norway, previously the Banking, Insurance and Securities Commission)

Kredittilsynet's activities are regulated by the Financial Supervision Act. Section 3, paragraph 1 states that "The Banking, Insurance and Securities Commission shall ensure that the institutions that it supervises operate in an appropriate and proper manner in accordance with law and provisions issued pursuant to law and with the intentions underlying the establishment of the institution, its purpose and articles of association." VPS is subject to Kredittilsynet's supervision (Act relating to the Norwegian Securities Depository, Section 10, paragraph 1 and the Financial Supervision Act, section 1, paragraph 11).

Unlike the registration activities of VPS, a licence is not required for the securities settlement system (VPO). According to the Payment Systems Act, such a system must be approved by Kredittilsynet in order to be covered by the Act's legal protection rules for clearing and settlement agreements. VPO has had such approval since 6 June 2001.

¹¹ See for instance the BIS and IOSCO recommendations concerning measures to reduce risk associated with securities settlements (see BIS/IOSCO (2001 and 2002)).

Norges Bank has decided not to own shares in VPS. Sveriges Riksbank has chosen the same solution.

VPS must give other market participants access to the VPS depository if they so desire.¹² This means that registration and settlement can in principle be executed in separate institutions. This change in type of company will make it easier for VPS to enter into alliances and cooperation with other national market participants, and will allow for mergers with central securities depositories in other countries. It must be assumed, however, that the barriers to entry are considerable for this type of operation, in both the Norwegian and other securities markets.

Functional changes in VPO

Improved predictability in VPO

Previously, transactions were netted in VPO each evening despite the fact that VPS had no information about how much money the participants had available for the settlement. Consequently, there was no guarantee that the settlement would be approved in Norges Bank's balance check the next morning. The settlement was never rejected by Norges Bank, but delays due to brokers' lack of cover were not unusual.

As of the spring of 2003, banks were required to earmark funds in Norges Bank for the securities settlement. These amounts are entered as constraints when transactions are netted in VPS, and the arrangement therefore places greater demands than previously on banks' liquidity management. If banks have not allocated adequate liquidity, transactions for which cover is lacking will be postponed until the next settlement. This ensures that settlements are not delayed pending participants' acquisition of financial cover, and settlements in Norges Bank are now executed at fixed times of the day. VPO has thus become more predictable and more in line with international recommendations in this area.

Is VPO more efficient?

Settlement of transactions that lack cash or securities cover in the morning settlement is automatically postponed until the second settlement of the day, at which time settlement is executed if there is cover. The introduction of two settlements daily thus means that more transactions can be settled on the agreed day. On the other hand, splitting the transactions into two settlements may in principle result in less favourable netting and thus somewhat reduced settlement efficiency. Since about 90 per cent of the transaction volume is settled in the first settlement, however, this effect is probably limited. In addition, final settlement of securities and cash can take place on trading day (T+0 settlement). One

advantage of T+0 settlement is that investors' exposure to liquidity and market risk is short-term, while a disadvantage is that brokers have little time to raise cover for the settlement. Irrespective, participants in VPO now have a wider range of choices, which can increase settlement efficiency.

VPO was also modernised in the years before the introduction of the new Act relating to the Norwegian Securities Depository. In 1999, VPS implemented an optimisation model for clearing and a securities borrowing scheme as an integrated part of cover check in VPS. So far, only foreign lenders have participated in this scheme. This is because Norwegian market participants' securities lending has been taxed on a par with sale, making securities lending unattractive. It has now been decided that these tax rules will be changed, and this will probably increase liquidity in the borrowing scheme and result in the settlement of a larger number of transactions on the agreed day.¹³ This is also in line with international recommendations. As a result of the improvements, the portion of transactions that are settled on the agreed day has increased from roughly 80 per cent at the end of the 1990s to the current level, which is about 97 per cent (see VPS 2002, p. 15).

3. Developments and trends in Europe

Background: past and present

Historically, each country has had its own securities system with trading, clearing and settlement in the country's own currency. Trading has taken place on the national stock exchange, securities settlement has been executed in the country's central securities depository and the cash leg has been settled at the central bank.¹⁴ Both regulations and practice have often favoured domestic trades and the central securities depositories have usually had a statutory monopoly in their own country. The national securities settlement systems have focused activity on domestic transactions in domestic currency, while cross-border securities trading has generally gone through banks.

In the last few years, technological developments, deregulation of capital markets and an increase in cross-border trade have changed this picture. National statutory monopolies have been abolished, and many market participants are expanding their services and seeking new markets with the aid of new technology. International recommendations and harmonisation of regulations and practice in the EU have also had an impact on developments. International recommendations have been developed in tandem with technological developments and have promoted modernisation of the

¹² Potential competitors may also choose to establish their own registries.

¹³ Proposition No. 42 (2002-2003) to the Odelsting "Om lov om endringer i skatteloven mv. (Concerning the Act relating to amendments in the Taxation Act etc.)" was approved by the Odelsting on 8 May 2003 and by the Lagting on 27 May 2003. It has not yet been decided when the amendments will enter into force.

¹⁴ See Padoa-Schioppa (2002) and Sveriges Riksbank (2003).

systems in many countries, including Norway. The introduction of the euro has played a significant role for the EU countries, especially for those in the euro area. The elimination of foreign exchange risk in connection with cross-border trades in this area has been important. Padoa-Schioppa (2002, p. 12) points out that investors are increasingly making cross-border trades within the euro area and this increases demand for a common infrastructure.

Increased cross-border trading and improved opportunities for fast settlement and less risk influence system design trends. In the following, we will focus on three main issues: cash settlement in the central bank or a private bank, net or gross settlement and finally, settlement with exposure to an unknown counterparty or a central counterparty.¹⁵ First, we will briefly review trends in the redesign of infrastructure for securities trading and settlement.

Dominant trends

*Consolidation, integration and automatisisation*¹⁶

The rapid technological developments in the last few decades have provided new possibilities for securities settlements systems and have made it possible to integrate, consolidate and automatise systems in a completely new way. Automatisisation allows for STP (straight through processing), which means that all necessary functions in the securities chain are integrated. This means that the entire process, from the initiation of a trade to settlement, is completely automated. A system using STP can reduce the time lag between the conclusion of a trade on the stock exchange and settlement and registration, and reduces the risk of manual error. Integration implies that various market operators' systems are linked together (technically), thus enabling them to send transactions back and forth. This makes it easier to send transactions to systems in other countries.

Consolidation of the securities infrastructure encompasses mergers, acquisitions, outsourcing, alliances, joint ventures and reorganisation of financial institutions. Consolidation may be horizontal or vertical. Horizontal consolidation entails the merger of institutions with the same functions and responsibilities, whereas vertical consolidation involves a merger of organisations that perform different services in the securities chain. Horizontal consolidation paves the way for acquiring larger market shares and helps to cut costs

because of the economies of scale characterising infrastructure services in the securities market. Vertical consolidation may result in an enterprise performing several or all services involved in trading (i.e. the enterprise may be a market place, a depository, a clearing and settlement house, a bank, a broker and a central counterparty.) The primary advantage of vertical consolidation is that STP becomes simpler and that customers only have to relate to one market operator and one set of standards and routines.¹⁷

Efficiency gains and risk reduction have been the drivers behind the consolidation and automatisisation trends. Both market participants and central banks in the EU and the G-10 countries have worked towards such a development by, among other things, preparing international recommendations (see Box 4). The EU is seeking to promote rules and regulations that are conducive to market-based consolidation and automatisisation. Such a development may facilitate cross-border securities trading and thus contribute to a more efficient and safe inner market. Accordingly, extensive work is under way to harmonise the regulations and practices in the EU countries and remove national barriers to integration and consolidation.¹⁸ Although the EU authorities are seeking to promote cross-border consolidation and cooperation, it is up to the market participants to exploit the possibilities afforded by a level playing field.

Consolidation and automatisisation may help to stabilise the financial infrastructure and increase efficiency in the securities markets (See Sveriges Riksbank (2003), p. 65). On the other hand, consolidation may also raise politically sensitive and complicated issues with regard to national considerations and competitive conditions between different market participants, for example securities depositories and banks.¹⁹ Consolidation may also increase operational vulnerability because one market participant's operational problems will have an impact on others. A breakdown in a consolidated infrastructure probably results in higher systemic risk, higher risk of contagion and appurtenant high costs. Horizontal consolidation may also imply a monopoly for a market operator in a large geographical area where a number of competitors operated previously. Potential problems connected with a monopoly may, however, be alleviated by means of regulations.²⁰ Consolidation that results in cross-border systems challenges market participants to cooperate across traditions, language and culture and imposes strict demands on global standards.

¹⁵ A central counterparty is a market operator who steps in as a legal counterparty between buyer and seller in a trade.

¹⁶ A more detailed review of trends up to 2001 is provided in Weme and Axelsen (2001).

¹⁷ STP may also be implemented with horizontal consolidation. Participants in a consolidated securities depository which is common to several countries may then execute trades with each other quickly and without manual handling.

¹⁸ See European Parliament (2002), Giovannini Group (2002 and 2003) and Committee of Wise Men (2001).

¹⁹ Consolidated central securities depositories may, for example, take over banks' services connected with cross-border settlement services (see Sveriges Riksbank (2003, p. 65) and Berg and Kruse (2000, pp. 140-141).

²⁰ Padoa-Schioppa (2003, p. 11) points out that the EU Commission has focused on ensuring that barriers to entry for incumbent market operators should be minimised and that users should have maximum freedom of choice. This type of solution may, however, be difficult to implement in practice because it is expensive and technically complicated.

Box 4: International recommendations

The most important international recommendations (the list is not complete) are described briefly below.

The first important international initiative came in 1988 with the report *Clearance and Settlement in the World's Securities Markets* from the Group of Thirty. This report recommended establishing a central securities depository in all national securities markets for electronic recording of securities.

In 1990, the central banks in the G-10 countries established the Committee on Payment and Settlement Systems (CPSS) as a forum for monitoring and analysing domestic and cross-border settlements. CPSS has prepared a number of international recommendations. The Bank for International Settlements (BIS) has supported this initiative by providing facilities for the secretariat and publishing the recommendations. In 1992, the BIS published the report *Delivery Versus Payment in Securities Settlement Systems* (BIS 1992). The report outlines models of how participants in the settlement can be protected against credit risk, both in gross and net settlements.

Since the middle of the 1990s, there has been considerable focus on risk and efficiency in connection with cross-border settlements. The BIS report *Cross-Border Securities Settlement* discusses, among other things, international central securities depositories (BIS 1995). There are a number of international reports on this subject and in the autumn of 2002, the Group of Thirty published a report called *Global Clearing and Settlement of Securities. A Plan of Action* (Group of Thirty 2002).

In 1998, the European Central Bank's predecessor, the European Monetary Institute (EMI), published *Standards for the use of EU securities settlement sys-*

tems in ESCB credit operations. Requirements concerning settlement based on delivery versus payment – DVP – and settlement in central bank money by 2002 led to modernisation of the systems in a number of countries. (EMI 1998)

According to Financial Services Action Plan, one of the EU's goals is to create an integrated financial market by 2005. To achieve this, it is necessary to modernise the processes for cross-border securities settlement. National tax rules and questions regarding legal security may constitute barriers that must be eliminated. A number of EU reports on these subjects have been prepared (European Parliament 2002, Giovannini Group 2002 and 2003 and Committee of Wise Men 2001). Legal security is taken account of in the EU's Directive on Settlement Finality from 1998.

From a global perspective, the BIS and the International Organization of Securities Commissions (IOSCO) published 19 recommendations for securities settlements in 2001 (BIS/IOSCO 2001). These recommendations and the appurtenant methods report from 2002 (BIS/IOSCO 2002) are used in the IMF's Financial Sector Assessment Program.

Under the auspices of the European System of Central Banks (ESCB) and the Committee of European Securities Regulators (CESR), a working group was established in 2001 to assess the BIS/IOSCO recommendations from a European perspective. In the summer of 2003, the group published its consultative report *Standards for securities clearing and settlement systems in the European Union* (CESR/ECB 2003). The 19 standards are based on the BIS/IOSCO recommendations but have been adapted to conditions in the EU. When the standards are in their final form and efforts to limit the scope of the standards are finalised, the standards will be more binding for the members than the BIS/IOSCO recommendations.

Settlement in a central bank or a private bank?

Settlement of the cash leg of securities transactions has traditionally been made via banks' accounts at the national central bank, primarily because there is no credit or liquidity risk associated with deposits in the central bank. In general, the central banks, in their capacity as settlement bank, have laid down requirements as to the design of the system and monitored its effect on the country's financial stability, in line with international recommendations.

Demand for systems providing settlement in a number of currencies has risen as cross-border trade has become

an increasing trend. This kind of system is operated by the two international central securities depositories (ICSDs) in Europe, Euroclear and Clearstream, both of which provide cash clearing and securities settlement services. This is possible because Euroclear and Clearstream also offer banking services. In a multi-currency settlement system, central bank settlements can be impractical since no international central bank offers settlement in several currencies (see Padoa-Schioppa 2002, p. 13). According to international recommendations, assets used to settle the ultimate payment obligations arising from securities transactions should carry little or no credit or liquidity risk. If central bank money

is not used, steps must be taken to protect members of central securities depositories (CSDs) from potential losses and liquidity pressures arising from the failure of the cash settlement agent whose assets are used for that purpose. Participation in the European System of Central Banks for credit operations, however, requires settlement of pledged securities in a system based on central bank money (EMI, 1998, p. 12).

Types of settlement – gross, net or both?

International recommendations can be followed whether transactions are settled individually (gross settlement) or on a net basis. In principle, gross settlement requires more liquidity than net settlement, in terms of both cash and securities. Liquidity is costly for participants, and as the day proceeds, managing liquidity becomes more important as the need for liquidity increases. Costs can be reduced, however, by using lending arrangements for both securities and cash and systems that optimise the use of liquidity. Net settlement is based on a specified number of settlements per day at designated times. In the event of failure to settle, the payment transaction is postponed to the next designated time. With gross settlements, on the other hand, trades can be settled as soon as cover is available.

Gross and net settlement systems are both available in Europe, and some clearing houses offer both settlement arrangements, enabling participants to choose the most suitable solution for each trade. The Danish securities settlement system, like the Norwegian system, is based on a number of fixed net settlements that include both equities and bonds. Both in Denmark and Norway, the bulk of transactions are completed during the first settlement on the settlement day. The Danish system also includes settlement in euro, and the system is synchronised with settlements in Euroclear.²¹

Up to autumn 2003, Sweden had net settlements once every morning. These settlements were completed in the form of four independent net settlements: equities in Swedish kroner, equities in euro, bonds in Swedish kroner and bonds in euro.²² Finland has had one net settlement for equities per day and gross settlement for bonds. Sweden and Finland are changing to new systems based on gross settlement in autumn 2003. Both the new Swedish system (NewClear) and the new Finnish system (HEXClear) include functions for liquidity optimisation so that as many transactions as possible are settled. Optimising is achieved, for example, by settling several individual transactions at the same time.²³ The decision made by Sweden and Finland to change to gross settlement-based systems is largely based on the aim of promoting cross-border trade.

The new Act relating to the Norwegian Securities Depository provides for the introduction of gross settlements in the Norwegian securities settlement system, but no decision has been made to establish such a system.

Central counterparty

A central counterparty (CCP) is an entity that interposes itself as a legal counterparty between buyer and seller in a securities trade so that buyer and seller do not deal directly with each other. The buyer and seller only have risk in relation to the CCP, and not in relation to each other. All securities trading entails a certain degree of risk that trades cannot be settled on the agreed day because of insufficient cover. By settling via a neutral counterparty, buyer and seller avoid exposure to this risk from an unknown counterparty. Market and liquidity risk in the event of a default of a participant is thereby borne by the CCP for a fee paid by the participants. In these situations, the CCP may impose fines and provide compensation in the form of cash or securities to the relevant market participants.

The total market and liquidity risk associated with settlement through a CCP can be reduced compared with normal trading. The reason for this is that the CCP can control its risk more effectively than individual participants in a trade, partly through risk diversification. A CCP can also offer other services, for example services relating to anonymity and services facilitating cross-border settlement. CCPs often also offer liquidity-saving functionality to participants, for example through netting of positions.

CCPs have traditionally been offered in connection with trade in financial derivatives. Over the past few years, there has been an international trend towards increased use of CCPs in securities settlements and particularly when large amounts and cross-border trades are involved. The London Clearing House, Clearnet and Eurex Clearing offer CCP services in connection with securities settlements (cf. Table 1).

In Norway, no CCP has been established for securities settlement, but the Norwegian Futures and Options Clearing House (NOS) acts as a CCP for derivatives trading. NOS also acts as central counterparty in the lending arrangement for securities offered in connection with securities settlements. The VPS states in the prospectus for the public offering (VPS 2003, p. 36) that the Nordic securities depositories, stock exchanges and banks have jointly assessed the need for and alternative models for a CCP in the Nordic region. The VPS points out that even though there is little need in the Norwegian market for a central counterparty, a CCP solution should be offered to international market participants as this is

²¹ A more detailed explanation of the synchronisation with Euroclear is given in Berg and Kruse (2000, p. 133). In Denmark, participants are also offered simple functionality for gross settlements without liquidity-optimising functions, although this is not used to any extent.

²² Modernisation in Sweden is explained in more detail by Sveriges Riksbank (2002, pp. 55-56). A gross settlement arrangement such as that for Denmark, mentioned in footnote 21 above, has also been available to Sweden.

²³ In its initial phase, NewClear will have some designated settlement times every day, but the system allows for settlement on a continuous basis throughout the day.

a well-known, internationally used settlement method. According to the prospectus, the VPS aims to establish CCP solutions for the Norwegian market in the next few years. The VPS can establish these solutions alone or in collaboration with other actors.

In principle, a CCP can be organised in a number of ways. The models known to us are based on gross securities settlement, where a CCP function is offered only for the most liquid securities. It is also possible to offer the function on a voluntary basis, so that national investors can settle trades without using a CCP. Transactions can also be sent via a bank to an international CCP.²⁴

There is no legal obstacle to establishing a CCP in Norway. Norwegian legislation has been modernised to provide for sound management of a CCP arrangement, and the Securities Trading Act contains rules that apply to the establishment of both Norwegian and foreign CCPs. The legal requirements applicable to a CCP are the same for both derivatives settlement and securities settlement. These requirements include authorisation from the Ministry of Finance and supervision by Kredittilsynet. The Securities Trading Act includes requirements with regard to risk mitigation, safety and appropriate capital for a CCP.

The most recent international recommendations relating to securities settlement concern the question of CCPs. The Group of Thirty (2002, pp. 8-9) recommends that the use of CCPs should be expanded and that market participants and relevant public institutions should collaborate on these issues.²⁵ The Group of Thirty expects the benefits to outweigh the costs in most markets.

The Bank for International Settlements (BIS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) also recommend that the costs and benefits of a CCP be evaluated while at the same time emphasising the need for a sound legal basis. It is stressed that the risk undertaken by a CCP should be carefully managed. Neither the G30 nor BIS and IOSCO recommend without reservation that a CCP

should be introduced in settlement systems in all countries. Whether the benefits outweigh the costs depends on the size of the market, the extent of cross-border trade and participants' demand and willingness to pay for this function. As the ECB points out (2003, p. 49), there is widespread consensus among market participants that clearing with a CCP will play an increasingly important role in reshaping the securities markets.

Infrastructure in the Nordic countries and Europe

Major constellations in Europe

The European infrastructure for securities trading and settlement has been changed in recent years and the focus has shifted from national markets to solutions that serve the needs of both national and international markets. This has resulted in more integrated systems, domestic and cross-border consolidation and increased automation. However, the most prominent change in Europe is the establishment of some major clearing and settlement bodies, with Europe's two international central securities depositories Euroclear and Clearstream in separate constellations.

Sveriges Riksbank (2003, p. 60) points out that the European infrastructure is defined by three constellations in particular: the UK market (London), a group including the French stock exchange, and a group concentrated around the German stock exchange. In the London market, trading is carried out on the London Stock Exchange, while the London Clearing House is the CCP. Securities settlement is provided by CRESTCo, with cash settlement at the Bank of England. The Paris, Amsterdam and Brussels stock exchanges merged in autumn 2000 to form the pan-European stock exchange Euronext. Clearnet is the CCP, while settlement services are provided by Euroclear.

Following the merger in 2002, CRESTCo is now part of the Euroclear group.²⁶ The merger made a substantial contribution to horizontal consolidation of the infrastructure of CSDs in Europe. The group is in the process

Table 1. Infrastructure for securities trading and settlement in selected European countries.

Function	UK	France, Netherlands, Belgium	Germany, Luxembourg
Market place	London Stock Exchange	Euronext	Deutsche Börse ⁽²⁾
Central counterparty (CCP)	London Clearing House	Clearnet	Eurex Clearing ⁽²⁾
Securities settlement, register	CRESTCo ⁽¹⁾	Euroclear ⁽¹⁾	Clearstream ⁽²⁾
Cash settlement	Bank of England	Respective central banks	Germany: Bundesbank, Luxembourg: Clearstream

⁽¹⁾ CRESTCo and Euroclear are part of the same group.

⁽²⁾ Deutsche Börse, Eurex Clearing and Clearstream are part of the same group.

²⁴ For a closer study of services and risk management in central counterparties, see Sveriges Riksbank (2003), Knott and Mills (2002) and Hills, Rule, Parkinson and Young (1999).

²⁵ The Group of Thirty was established as a private, non-profit international body composed of very senior representatives of the private and public sectors and academia (see www.group30.org for more information).

²⁶ For more information, see www.crest.co.uk, www.euroclear.com and press release of 23 September 2002.

Table 2. Infrastructure for securities trading and settlement in the Nordic region

Function	Norway	Iceland	Denmark	Sweden	Finland
Market place	Oslo Stock Exchange	Reykjavik Stock Exchange	Copenhagen Stock Exchange	Stockholm Stock Exchange (1)	Helsinki Stock Exchange (1)
Securities settlement, depository	VPS	ISD ⁽²⁾	VP	VPC	APK ⁽¹⁾
Cash settlement	Norwegian central bank	Icelandic central bank	Danish central bank	Swedish central bank	Finnish central bank

⁽¹⁾ The Stockholm Stock Exchange, the Helsinki Stock Exchange and APK are part of the same group.

⁽²⁾ The Reykjavik Stock Exchange and ISD form part of the same group (from June 2002).

of integrating its systems by developing a joint settlement system for Euronext and the London Stock Exchange, to be completed by 2005. The London Clearing House and Clearnet also plan to merge under the name of LCH Clearnet. This merger will be an important horizontal consolidation of the infrastructure for CCPs in Europe.²⁷

As mentioned above, Euroclear and Clearstream are both ICSDs that offer settlement in a number of currencies. Clearstream is also the national CSD in Germany and Luxembourg, while Euroclear plays a similar role for the UK, France, the Netherlands and Belgium. The cash leg of the settlement is conducted in the respective central banks, except for Luxembourg where this leg is handled by Clearstream.

The third major constellation is based on a model for vertical consolidation, with trading (Deutsche Börse), CCP (Eurex Clearing) and settlement (Clearstream) within one and the same group. This vertical consolidation was completed in July 2002 with the incorporation of Clearstream into the Deutsche Börse Group²⁸.

Table 1 provides an overview of important centres for securities trading and settlement in Europe today.²⁹

Even though securities settlement in Norway is handled by VPS and Norges Bank, Norges Bank is linked up to both Euroclear and Clearstream as about 30 per cent of the collateral used by banks to obtain loans in Norges Bank consists of securities registered in these two ICSDs.

Infrastructure and participants in the Nordic region

Typical characteristics of the Nordic markets have been a lack of integration and a large number of institutions. Despite a number of attempts to establish cooperation and alliances over the past few years, the Nordic countries have largely retained their original infrastructure with a stock exchange and CSD in each country. This picture changed somewhat from 4 September 2003 with the merger between the Swedish OM (owner of the Stockholm Stock Exchange) and the Finnish stock

exchange HEX to form a new company, OMHEX.³⁰ OMHEX has two divisions, OM Technology and HEX Integrated Markets. The latter includes the Stockholm Stock Exchange, the Helsinki Stock Exchange, the Finnish Central Securities Depository (APK) and stock exchanges and CSDs in Estonia and Latvia. A central counterparty for securities settlement in the Nordic region has so far not been established. OMHEX, however, is planning to establish a joint Nordic-Baltic central counterparty for securities.

The stock exchanges in Copenhagen, Stockholm, Reykjavik and Oslo have signed a cooperation agreement to form an alliance called NOREX. The alliance enables the stock exchanges in the different countries to use the same trading system and offers joint membership. The individual stock exchanges have retained the share quotations and trading they had before the alliance was formed.

Table 2 shows the institutions that offer securities trading and settlement services in the Nordic region.

Sveriges Riksbank (2003, p. 61) points out that technological developments in the Nordic countries are advanced, and that the degree of automation is generally high. It is, however, difficult to achieve full straight through processing as long as trading and settlement procedures are not fully integrated.

Sweden, Finland, Iceland and Norway will be introducing new systems or making changes to their existing systems in the course of 2003. The settlement systems in Sweden and Finland have been modernised largely to promote cross-border trade. Modernisation also prepares the systems for the possibility of linking settlement to a future central counterparty, for example through OMHEX.

4. Challenges and opportunities for the Norwegian system

International recommendations identify principles for risk management and efficiency in securities settlement systems. The recommendations allow for different system designs, so that they can be met in both gross and

²⁷For more information see www.clearnetsa.com and www.lch.com.

²⁸For more information, see www.clearstream.com.

²⁹For more information, see ECB (2003, especially p. 535) and the relevant websites.

³⁰For more information, see www.omhex.com and OMHEX press releases of 4 September 2003.

net systems, systems with or without a CCP, and systems based on cash settlement in a central bank or a private bank. When choosing functions in a system, private CSDs must identify what is in demand in their market.

In developing the Norwegian securities settlement system, both VPS and Norges Bank have placed emphasis on international standards and recommendations. The securities settlement system is therefore mainly consistent with all the important international standards. Moreover, as a member of the EEA, Norway has implemented EU requirements in national legislation, in line with EU countries.

Securities settlement systems are undergoing constant development to improve efficiency and security. Private CSDs must assess settlement services on a continuous basis against demand and users' willingness to pay. Being the settlement bank for securities trades allows the central bank to influence the way settlement is conducted. For example, central banks decide on the most appropriate settlement order. They can also steer demand towards more efficient solutions through the terms and prices they set for the various services. In addition, the central banks of the EU and G10 countries are drawing up common recommendations for these systems.

Like other national CSDs in Europe, the VPS is now a limited company with no monopoly position. This presents new opportunities and new challenges. Possible developments in the period ahead are presented in the following.

Possible developments in the next few years

The current securities settlement system may be developed in various ways. The introduction of more than two net and/or gross settlements will afford additional opportunities during the day to settle transactions for which there is initially insufficient cover. Same-day trading and settlement will also be possible for a longer part of the day than is the case with today's relatively short window.³¹ The time window can also be expanded by postponing the morning settlement until a later time in the day. Opening the stock exchange earlier in the morning will have the same effect. .

An increase in the volume of cross-border trading may boost participants' demand and willingness to pay for the establishment of links between CSDs to facilitate settlement of cross-border trades. Settlement on a trade-by-trade basis (gross) is often regarded as the most suitable method in this context. It is, however, also possible to synchronise net settlement in different countries to promote cross-border settlement.

If securities are quoted on the Oslo Stock Exchange in foreign currency, settlement must be conducted in a private bank as Norges Bank only offers settlement in

NOK. The VPS is aware of this and, in collaboration with Den norske Bank, the largest private Norwegian bank, has developed systems for settlement in EUR and USD (see VPS 2003, p. 36).

The conversion of the VPS into a public limited company makes it easier to collaborate and possibly merge with other institutions, providing the possibility of efficiency gains and promoting automation (STP) in the securities chain. A merger between national institutions may also facilitate various forms of cooperation with foreign institutions.

A joint Nordic-Baltic solution where one or more settlement currencies are included may also be a possibility for the future. Further cooperation and consolidation within or outside OMHEX is also a viable option. Nordic-Baltic consolidation can create a joint Nordic-Baltic domestic market that will probably be more competitive in relation to other markets. In order to facilitate further consolidation, issues connected with governance, the location of the main office and job distribution must be resolved.

CSDs in most European countries, including Norway, are members of the European Central Securities Depositors Association (ECSDA).³² The two international CSDs Euroclear and Clearstream are also members. The ECSDA has developed a standard for establishing links between CSDs in order to facilitate settlement of cross-border trades. The ECSDA will probably continue to play an important role as a forum for cooperation between the national and international CSDs in Europe.

Possible long-term developments

Developments in trading patterns and trading volume in domestic markets and across borders may influence the settlement services that are in demand and the requirements imposed on settlement systems by national and international authorities. Trading volumes, for example, will be affected by the extent to which investors place funds in interest-bearing securities and equity instruments rather than bank deposits.

In addition, trading patterns may shift towards stock exchanges that are open 24 hours a day in many countries. In a few years' time, it may be possible for anyone wishing to do so to trade securities directly on multi-national stock exchanges via the Internet, with multicurrency real-time settlement in their own cash and securities accounts. This would require access to cash and securities in real time, possibly using a form of credit card. A third party would then be required to guarantee the settlement of both cash and securities for an appropriate fee. However, how costly this solution will be is currently a very open question and the extent of the demand for this type of technology is unknown.

The range of options available to users may also be

³¹ It is currently only possible to conduct trades with same-day settlement from the time the stock exchange opens at 10 a.m. until the deadline for registration of transactions for the morning settlement at 11.30 a.m.

³² For more information, see www.ecsda.com.

greater in most markets in the future, enabling them to choose between various settlement solutions such as net or gross, with or without a central counterparty, and cash settlement in a private or a central bank. The services that are in demand will probably continue to vary widely between different types of investor.

It is also possible that both national and international CSDs will have a role to play in the long run, although the division of tasks between them may be different. The national CSDs will probably focus in particular on settlement and registration of national securities, while international CSDs will probably offer a wide range of services. International CSDs will thus supplement rather than replace national CSDs. National systems may include various options for more advanced solutions, offered via a link to the large international systems.

Literature:

- BIS (1992): *Delivery versus payment in securities settlement systems*. Report prepared by the Committee on Payment and Settlement Systems (CPSS) of the central banks of the Group of Ten countries. Bank for International Settlement (BIS), September 1992.
- BIS (1995): *Cross-border securities settlement*. Report prepared by the Committee on Payment and Settlement Systems (CPSS) of the central banks of the Group of Ten countries. Bank for International Settlement (BIS), March 1995.
- BIS (2001): *A glossary of terms used in payments and settlement systems*. Committee on Payment and Settlement Systems (CPSS). Bank for International Settlement (BIS), January 2001, revised July 2001.
- BIS/IOSCO (2001): *Recommendations for securities settlement systems*. Committee on Payment and Settlement Systems (CPSS), Technical Committee of the International Organization of Securities Commissions (IOSCO). Bank for International Settlement (BIS), November 2001.
- BIS/IOSCO (2002): *Assessment methodology for "Recommendations for securities settlement systems"*. Committee on Payment and Settlement Systems (CPSS), Technical Committee of the International Organization of Securities Commissions (IOSCO). Bank for International Settlement (BIS), November 2002.
- Berg, Jesper and Mogens Kruse (2000): *"Værdipapirafvikling i internationalt perspektiv" (Securities settlement in an international perspective)*. Kvartalsoversigt (quarterly report from Danmarks Nationalbank), 2nd quarter 2000, pp. 131-141.
- CESR/ECB (2003): *Consultative report. Standards for securities clearing and settlement systems in the European Union*. Committee of European Securities Regulators (CESR), European Central Bank (ECB), July 2003.
- Committee of Wise Men (2001): *Final report of the Committee of Wise Men on the regulation of European securities markets*. European Union, 15 February 2001.
- ECB (2003): *Blue Book: payment and securities settlement systems in the European union*. Addendum incorporating 2001 figures. European Central Bank (ECB), 3 September 2003.
- EMI (1998): *Standards for the use of EU securities settlement systems in ESCB credit operations*. European Monetary Institute (EMI), January 1998.
- European Parliament (2002): *Report on communication from the Commission to the Council and the European Parliament: Clearing and settlement in the European Union. Main policy issues and future challenges*. (COM (2002) 257-C5-0325/2002-2002/2169 (COS)). A5-0431/2002. Committee on Economic and Monetary Affairs, 4 December 2002.
- Flatraaker, Dag-Inge and Geir Bruflot (1997): "The Norwegian settlement system for securities trading". *Economic Bulletin* 3/1997, pp. 257-265.
- Giovannini Group (2002): *Cross-border clearing and settlement arrangements in the European Union*. *Economic papers*, no. 163, European Commission, Directorate-General for Economic and Financial Affairs, February 2002.
- Giovannini Group (2003): *Second report on EU clearing and settlement arrangements*. European Union, April 2003.
- Group of Thirty (1988): *Clearance and settlement systems in the world's securities markets*. Washington.
- Group of Thirty (2002): *Global clearing and settlement of securities*. A plan of action. Washington.
- Hills, Bob, David Rule, Sarah Parkinson and Chris Young (1999): "Central counterparty clearing houses and financial stability". *Financial Stability Review* (Bank of England), June 1999, pp. 122-134.
- Knott, Raymond and Alastair Mills (2002): "Modelling risk in central counterparty clearing houses: a review". *Financial Stability Review* (Bank of England), December 2002, pp. 162-174.

NOU (2000:10): Act on the registration of financial instruments (Act relating to the Norwegian securities depository) Ministry of Finance, Oslo.

Norges Bank (2002): "Norges Banks oversight and supervision of the payment system". *Economic Bulletin* no. 1/2002 pp. 10-12.

Norges Bank (2003): *Annual Report on Payment Systems for 2002*, April 2003.

Padoa-Schioppa, Tommaso (2002): "Clearing and settlement of securities: A European perspective". *Payment Systems Worldwide*, Vol. 13, no. 1, pp. 9-15

Proposition no. 39 (2001-2002) to the Odelsting: Om lov om registrering av finansielle instrumenter (verdi-papirregisterloven. (Concerning the Act on the registration of financial instruments (Act relating to the Norwegian securities depository)). Ministry of Finance, Oslo.

Proposition no. 42 (2002-2003) to the Odelsting: Om lov om endringer i skatteloven mv (Concerning amendments to the Taxation Act etc). Ministry of Finance, Oslo. .

Sveriges Riksbank (2002): "Central counterparty clearing for the securities market". *Financial Stability Report* No 2/2002, pp. 47-58.

Sveriges Riksbank (2003): "Consolidation trends in the financial infrastructure". *Financial Stability Report* No 1/2003, pp. 60-66.

VPS (2002): *Annual Report 2002*. Norwegian Central Securities Depository (VPS), Oslo.

VPS 2003: Prospectus. Public offering of all 5 000 000 shares in VPS Holding ASA 24. March 2003 Norwegian Central Securities Depository (VPS), Oslo.

Weme, Sindre and Kristine Andenæs Axelsen (2001): "Det europeiske verdipapirmarkedets infrastruktur i støpeskjeen (The European securities market's infrastructure in transition)". *Penger og Kreditt* no. 1/2001 pp. 36-42.

Legislation referred to in article:

Financial Supervision Act: Act No. 1 of 7 December 1956 on the supervision of credit institutions, insurance companies and securities trading, etc.

Norges Bank Act: Act no. 28 of 24 May 1985 on Norges Bank and the Monetary System.

Payment Systems Act: Act no. 95 of 17 December 1999 relating to Payment Systems etc.

Public Limited Companies Act: Act No. 45 of 13 June 1997 relating to Norwegian public limited companies.

Securities Depository Act: Act no. 64 of 5 July 2002 on Registration of Financial Instruments.

Securities Registry Act: Act no. 62 of 14 June 1985 relating to a Central Securities Registry (The Act was replaced by the Securities Depository Act of 1 January 2003).

Securities Trading Act: Act no. 79 of 19 June 19.97 on Securities Trading.

Liquidity and scarcity in the Norwegian government bond market

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The Norwegian government issues debt in the bond and bill market. Market prices for these instruments contain information about market expectations concerning the required real rate of return and inflation. The quality of the information depends in part on the efficiency of price formation.

This article describes the structure of the Norwegian government bond market and liquidity in the market. The article also considers the impact of supply and demand on price formation in the government bond market. Compared with other government bond markets, liquidity in the Norwegian market is considered to be relatively limited, and there are signs of a scarcity premium in price formation.

Introduction

Pricing in financial markets is anchored in the risk-free yield curve.¹ It is normally derived from the government securities market and contains information about the market's perception of future required real rate of return and inflation. A central bank can use the information to derive market expectations concerning monetary policy.

The quality of the information that can be derived from prices depends on market efficiency and on the existence of and variations in different price premia. Government debt policy is thus geared towards underpinning liquidity in the government bond market with a view to reducing the price premia. This also contributes to reducing government borrowing costs.²

This article is structured as follows: After defining liquidity in general, the structure and liquidity in the Norwegian government bond market are considered. We then attempt to estimate different measures of the liquidity premium on Norwegian government bonds compared with bonds issued by other institutions. The paper concludes with a description of the impact of the market's limited size on the pricing of government bonds.

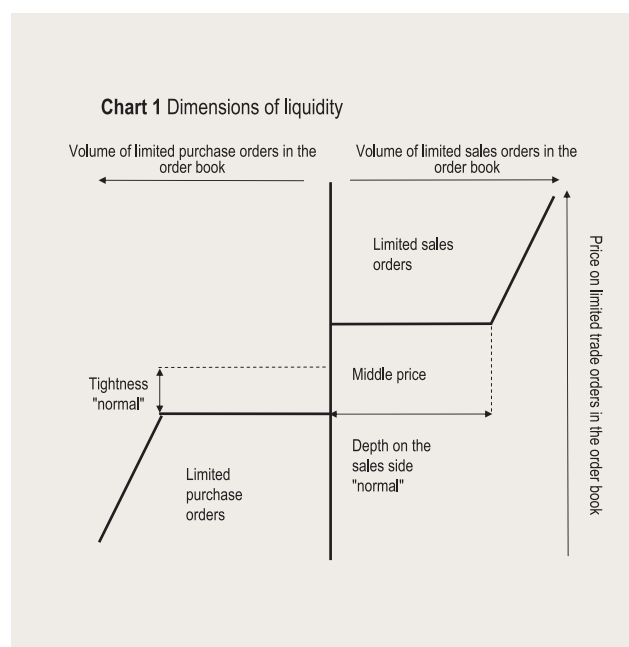
1. Liquidity in general

Liquidity is a relatively vague concept, but the following three dimensions are often attributed to liquidity in the literature:

- *Tightness* describes the spread between tradable prices and the middle rate, and is thus an expression of transaction costs in the market.
- *Depth* describes the volume that can be transacted without price impact.
- *Resiliency* describes the market's capacity to return to normal after a trade.

The definition of liquidity implies that the market can normally be characterised as liquid if market participants are able at all times to execute large trades quickly without affecting market prices to any considerable extent. Reduced tightness, greater depth and greater resiliency thus imply a more liquid market.³

Chart 1 shows the order book in an order-driven market. The order book contains limit orders that shows the volumes that can be bought (sold) immediately in the market, and at what prices. The depth on the sales side is defined as the volume that can be bought without price impact. Normal depth on the sales side in the order book is shown in the chart. Tightness is the difference between the price of the best limited purchase order (highest price) and the best limited sales order (lowest price), and is shown in the chart.



¹ The capital asset pricing model (CAPM) is an example of a model that explains, against the background of risk-free yield, the relationship between expected return and the risk associated with a given investment.

² Norges Bank functions, under agreement with the Ministry of Finance, as adviser and arranger for the State in the area of domestic debt issuance. See box for a description of government debt issuance.

³ Immediacy is another concept often used as an expression of liquidity. Immediacy, defined as the time it takes to trade a volume of a certain size within a given price interval, incorporates elements of the other features and strictly speaking cannot be regarded as a separate feature.

Resiliency contains a time element. Assume that a number of limited sales orders are executed so that the lowest sales price in the order book increases. Tightness and possibly depth are now no longer at normal levels. Resiliency then indicates the speed at which the market will normalise, i.e. the time it takes for tightness and depth to return to normal levels. Note that this does not necessarily imply that the middle price remains unchanged.

The impact of the various features of liquidity partly depends on market structure and the number of market participants, their size and behaviour. It is difficult to compare liquidity across different markets because the same measures of liquidity can provide different indications of how well the markets function. International comparisons of liquidity in government bond markets are thus not a straightforward exercise. In the description of liquidity in the Norwegian government bond market, we will nevertheless provide a brief account of our findings in relation to other government bond markets.

2. Market structure in the secondary market for Norwegian government bonds

Participants

Participants in the Norwegian government bond market can be divided into three main categories: the State and Norges Bank, which are respectively the borrower and arranger of issues, banks and brokerage firms as intermediaries, and investors as end-users of government bonds. Norges Bank is also responsible for market-making in the government securities market and Norges Bank has entered into a primary dealer agreement with a number of brokerage firms concerning pricing in the government bond market.

A heterogeneous market, where investors have different perceptions as to the value of bonds, different trading needs and different interests in different segments of the maturity spectrum, will normally feature a larger trading volume and a higher degree of liquidity than a homogeneous market. In a homogeneous market, primary-dealers will be exposed to “one-way trading”, which will either increase or reduce their bond holdings and be associated with an unacceptably high risk. This may reduce liquidity.

As a result of consolidation in the financial sector in Norway, the number of banks and brokerage firms that are active as intermediaries in the government bond market declined through the 1990s. Government bond intermediation primarily occurs via the primary dealers today. The concentration on the investor side is also relatively high, with life insurance companies, pension

Table 1. Distribution of government bond holdings, January 2003

Sector	Holdings of volume of government bonds outstanding
Foreign sectors	41.6%
Private pension funds, incl. life insurance companies	34.6%
Government and social security sector	5.5%
Non-life insurance companies	2.5%
Securities funds	2.3%
Private limited companies	2.3%
Commercial banks, incl. Postbanken	1.0%
Municipalities	1.4%
Others	8.9%
Total	100.0%

Source: Norwegian Central Securities Depository

funds and foreign sectors as the dominant participants. These groups combined accounted for 76 per cent of outstanding government bond holdings at end-2002 (see Table 1).

The trading process

Secondary market trading in Norwegian government bonds takes place in two different venues. The largest share of trading occurs in the telephone market, where stock exchange members trade with each other and with investors. Trades that are agreed in the telephone market are to be reported forthwith to the Oslo Stock Exchange, but it is possible to defer the publication of the trade, which makes it easier for primary dealers to reduce their own risk in the market. As a result, they can better underpin market liquidity.

The Oslo Stock Exchange's AM sub-market⁴ is an order-driven market where stock exchange members' orders are collected in an order book for each bond that is traded. Buy and sell orders are matched according to the applicable rules. Primary dealers are required to quote prices in this market, with defined limits as to the maximum allowed difference between bid-ask prices (bid-ask spread) and a minimum requirement as to volume (see appendix). The requirements relating to primary dealer pricing in the AM sub-market ensures a minimum degree of liquidity under all market conditions and for all groups of investors. In addition to the trading-oriented function, pricing in the AM sub-market serves as a reference for investors trading in the telephone market.

⁴ Oslo Stock Exchange's ordinary sub-market with automatic order matching.

Government debt issuance

The government issues debt in the domestic market at the same time as a portion of the budget surplus is allocated to the Government Petroleum Fund. This is done among other things, cf. Proposition no. 1 to the Storting, Annex 14 (2002-2003), for the following reasons:

- Consideration for the balance in the money market
- Consideration for the government's cash holdings
- The intrinsic value of government loans

Government debt issuance also gives the government easier and cheaper access to the capital markets and may be viewed as a kind of insurance in the event of a net financing need.

Debt issuance strategy

The strategy for domestic debt issuance reflects a desire to deliver a correct, risk-free yield curve up to 10-year maturity. In recent years, borrowing in the bond market has been based on a pattern whereby a new 11-year bond is introduced roughly every other year. Issuance has mainly reflected the desire to rapidly increase the volume in the newest (and longest) loan. Table 3 shows the five outstanding benchmark bonds.

Predictability of issuing activity is important for market participants. Therefore, the government does not issue debt for short-term commercial reasons.

Traditionally, government bonds have been increased to about NOK 20-30 billion. After reopening the bonds, the outstanding volume of the two

Norwegian benchmark bonds, per 1 April 2003.

Bond	Nominal - interest rate	Maturity	Outstanding volume, in billions of NOK
NST 465	5.75%	30.11.04	38.75
NST 467	6.75%	15.01.07	35.90
NST 468	5.50%	15.05.09	23.60
NST 469	6.00%	16.05.11	22.00
NST 470	6.50%	15.05.13	17.00
Total			121.25

largest bonds is currently close to NOK 40 billion.

Method of issue

In December, Norges Bank usually publishes a circular containing the auction calendar for government bonds and Treasury bills for the next year. The calendar does not contain information about the issues or volumes to be auctioned. In the bond market, this information is published one week prior to the auction. Pre-announced auctions may be supplemented by ad-hoc auctions when justified by special circumstances. In recent years, there have been five to six auctions of government bonds each year. Issue volume has varied from NOK 2 billion to NOK 6 billion.

Norges Bank is responsible for the sale of Treasury bills and government bonds in the market. The sales are executed via the Oslo Stock Exchange's trading system, Saxess. Tenders may be offered by members of the stock exchange or directly by telefax to Norges Bank. The issue is awarded at the highest price that will ensure sale of the total volume, if this price is acceptable.

3. Liquidity in the Norwegian government bond market

In the following, we evaluate liquidity in the government bond market using different indicators of market tightness and depth. The evaluation is based on prices data from the order books in the AM sub-market and order volume data.

Tightness

Market tightness is normally defined as the difference between bid and offer prices in the market, the spread.⁵ In the government bond market, there are two spreads that are of relevance, the spread in the AM sub-market and the spread in the telephone market.

The spread in the AM sub-market is directly available

to all stock exchange members and in principle also to investors via the possibility of routing⁶ trades directly into a trading system. The Oslo Stock exchange registers all orders that are entered in this market. This makes it possible to estimate the spread exactly.

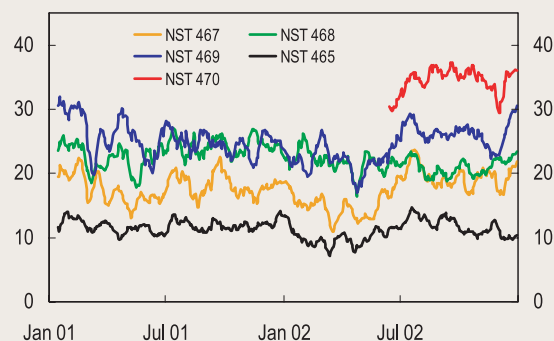
Chart 2 shows the price spreads quoted in the period 2001-2002. The price spread is wider for bonds with longer residual maturities. This is because the price risk is normally higher for bonds with longer residual maturities owing to higher price variations⁷, and this has implications for the obligations primary dealers will commit to. The lower the liquidity for a bond series the higher the risk because the costs of adjusting bond holdings after a trade increase if liquidity is poor. This may be the reason for the considerable spread in the longest bond (NST 470), which is still being increased. The primary

⁵ According to the definition of tightness, the spread corresponds to two measures of tightness.

⁶ Routing means that investors that have an agreement with a stock exchange member can put in an order on the stock exchange via the Internet.

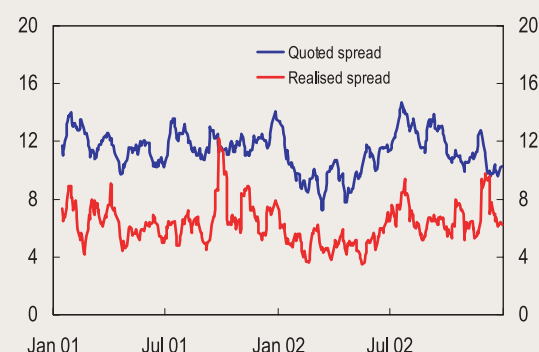
⁷ Measured in interest rate basis points, the spread for the various bonds with different maturities is approximately the same.

Chart 2 Quoted price spread in basis points. 10-day moving average of daily time-weighted spread in the AM sub-market.



Sources: Oslo Stock Exchange and Norges Bank

Chart 3 Quoted (time-weighted) and realised (trading volume weighted) basis point spread in prices for NST 465. 10-day moving average



Sources: Oslo Stock Exchange and Norges Bank

dealers' access to borrowing bonds in Norges Bank reduces such costs, and underpins liquidity in the market.

The average quoted spread reflects the requirements concerning primary dealer spreads in the agreement with Norges Bank. The quoted spreads increased somewhat when the volume requirements for shorter bonds stated in the primary dealer agreement were tightened on 27 May 2002.⁸

The spread in the telephone market is of relevance because the bulk of trading takes place in this market. There are no data for pricing in the telephone market, but all transactions are immediately reported to the Oslo Stock Exchange. The trades executed make it possible to estimate the spread.

The spreads realised in all transactions in both markets in government bond NST 465, with maturity on 30 November 2004, calculated here as two times the distance from the price in the trades executed at the simultaneous middle price in the AM sub-market⁹, are used as a measure of the effective spread in the total market for this bond. Chart 3 shows quoted and realised spreads for government bond NST 465. The realised spread is 5 price basis points lower than the spread quoted in the AM sub-market. The realised spread is generally expected to be lower than the quoted spread because the trader can decide the timing and generally prefers trading when the spread is small.

The spreads indicate that the liquidity in the total government bond market can be regarded as better than that observed in the AM sub-market.

In the latter part of 2002, the spread in the Norwegian government bond market was about 12, 20 and 25 price

basis points, respectively, for the maturities 2, 5 and 10 years, using prices through the trading day in the AM sub-market. In comparison, the average spreads in the Danish government bond market were respectively about 6, 8 and 10 price points for the 2, 5 and 10-year segments.¹⁰ The corresponding spreads for Finnish government bonds were 4, 6 and 8 price points.¹¹ Different measures for both volume and price and differences in market structure make it difficult to make a direct price comparison. Nevertheless, the figures indicate that liquidity in the Norwegian market is poorer than in the two other markets.

Depth

The depth of the government bond market (the volume that can be transacted in the market without price impact) is evaluated on the basis of the volume that can be traded immediately in the AM sub-market and on total turnover. These are indirect indicators of depth, which do not provide direct information as to the volume that can be traded without price impact, or information as to price sensitivity to order flows. However, both indicators give an impression of the trade flow that the market "normally" accommodates.

Norges Bank monitors pricing in the AM sub-market to ensure that it is in line with the requirements in the primary dealer agreement. In this connection, the total volume available in the AM sub-market is registered. The volumes available in the order books in the AM sub-market reflect to a large extent the number of primary dealers and the agreement's pricing requirements

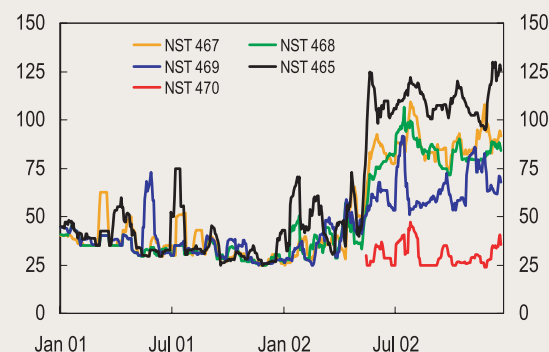
⁸ This occurred at the same as the transition to the trading system SAXESS on the Oslo Stock Exchange and the introduction of the right to delay the publication of trades until the end of the trading period.

⁹ It is assumed that the middle price in the telephone market and the AM sub-market is the same and that the spread in the telephone market is symmetrical around the middle price.

¹⁰ Average spreads at the end of the trading period, October 2002

¹¹ In the electronic MTS trading system

Chart 4 Volume of purchase orders in the order book in the AM sub-market, in millions of NOK. 10-day moving average of daily observations at 2 pm 1400.



Sources: Oslo Stock Exchange and Norges Bank

(see Chart 4).¹² The increase in the order book in mid-2002 reflects the increase in the volume requirements¹³ applying to the primary dealers, while the gradual reduction in the lower volume limit through 2001 is attributable to the reduction in the number of primary dealers from 7 to 5.

Higher volume requirements for primary dealers have improved liquidity, as measured by depth. This has enabled stock exchange members to transact larger volume at all times. The increase in volume requirements was also introduced with a view to achieving a more accurate price picture in the AM sub-market, which has since been achieved as confirmed by various market participants.¹⁴

Turnover in the government bond market is often used as a measure of liquidity. Turnover can also provide a

picture of market depth because it depends on market participants' evaluation of transaction costs. All other things being equal, turnover will increase when transactions costs are reduced.

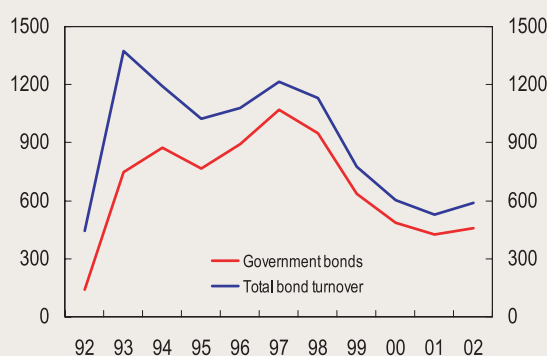
Turnover in the Norwegian government bond market has declined considerably since 1998 (see Chart 5), despite virtually no change in the volume of government bonds outstanding. The same picture applies to the rest of Europe. Consolidation in the financial sector, which has also resulted in a fall in the number of primary dealers, may be one of the main explanatory factors behind the decline. In addition, major international investors, that were previously active in the Norwegian bond market, have reduced their presence.

The turnover rate¹⁵ in the Norwegian government bond market is low in an international context. In 2002, the average annual turnover rate for the five bond issues outstanding was 3.5 per year (see Table 2). Government bond NST 469 functioned in 2002 as a benchmark bond in the internationally important 10-year segment. This contributed to relatively high turnover in the bond. By comparison, the turnover rate for Danish benchmark bonds¹⁶ in the 2, 5 and 10-year segments was about 10, 6 and 14, respectively, per year.¹⁷

Liquidity premium

Normally, investors will require compensation for investing in a fairly illiquid instrument. A comparison of the pricing of two bonds that feature approximately the same coupon, residual maturity and credit risk provides an indication of how the market evaluates the liquidity in government bonds compared with other bonds. As a rule, the most liquid bond will be traded at a higher

Chart 5 Annual turnover of bonds and government bonds on the Oslo Stock Exchange. In billions of NOK



Source: Oslo Stock Exchange

Table 2 Annual turnover rate for Norwegian government bonds, 2002

	Turnover rate (turnover/ volume outstanding)	Volume outstanding Annual average, in NOK billions
NST 465	4.1	29.5
NST 467	2.9	29.0
NST 468	2.9	23.2
NST 469	4.0	21.6
NST 470	2.4	9.0
Total	3.5	109.0

* NST 470 was launched in May 2002. The figures show the annual turnover rate.

Source: Oslo Stock Exchange, Norges Bank

¹² Volume on the sales side of the market does not systematically deviate from the purchase side.

¹³ The volume requirement in pricing was changed from NOK 5 million per primary dealer in all bonds to differentiated volume, with larger volumes for bonds with shorter residual maturities.

¹⁴ Data on pricing in the AM sub-market show that the middle price in the order book for NST 469 was changed 20 per cent more frequently after the transition to the SAXESS trading system and higher volume requirements in the primary dealer agreement.

¹⁵ Turnover rate is estimated as turnover in relation to nominal volume outstanding.

¹⁶ A benchmark bond is a trendsetting bond whose price is generally perceived as an expression of market trends.

¹⁷ Based on turnover in October 2002

Chart 6 Yield on government bond NST 467 and a (synthetic) bond with the same maturity issued by Norges Kommunalbank

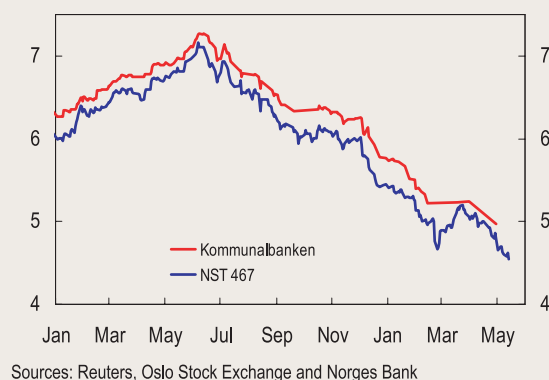
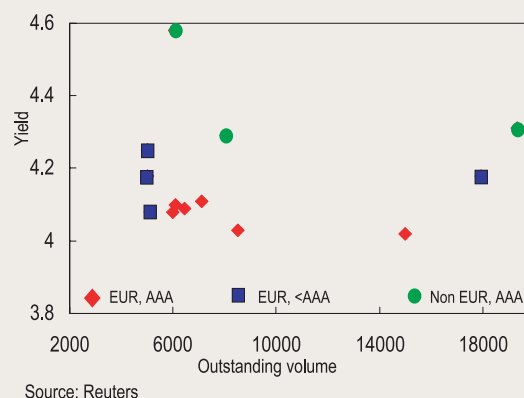


Chart 7 Yield and outstanding volume for EU countries' government bonds in the 10-year segment. 1 April 2003



price, i.e. a lower yield. This price difference is often referred to as the liquidity premium.

Chart 6 presents such a comparison of government bond NST 467, with maturity on 15 May 2007, and a (synthetic) government-guaranteed bond with equal maturity issued by Norges Kommunalbank (private municipal bank).¹⁸ The volume outstanding in the municipal bank bond amounted to about NOK 2.5 billion through 2002, while the volume outstanding in the government bond was between NOK 29 and 31 billion.

The municipal bank bond has a government guarantee, but has been traded at an average 21 interest rate basis points above the government bond through 2002. The main reason for this is that the municipal bank bond is less liquid.

In the market for government bonds issued by EU countries, similar factors explain yield spreads between government bonds issued by various countries, but with the same creditworthiness (see Blanco (2001)). Chart 7 shows the yields on different EU countries' benchmark government bonds in the 10-year segment and the volume outstanding¹⁹. For AAA/Aaa-rated²⁰ EUR-denominated government bonds, there is a negative relationship between yield and volume outstanding. In light of this relationship, one could expect that a comparable bond with a volume outstanding of EUR 2000 million would have a liquidity premium that is at least 10 interest rate basis points higher than the yield on the German government bond, which has the lowest yield in the chart.

The yield spread between different countries' government bonds, denominated in different currencies, consists of several components. In addition to differences in

the liquidity premium, the differential primarily reflects differences in expected inflation and exchange rate developments, and different premia that are normally attributable to differences in credit risk for the bonds.

The yield spread between Norwegian and German government bonds can be roughly decomposed into these components. Since Norwegian and German government bonds are both Aaa-rated, the credit risk component has little impact on the yield differential in practice.

The impact of differences in expected inflation and exchange rate developments and exchange rate risk can be determined by using interest rate swaps.²¹ The swap rate reflects expectations concerning short rates in the period to the swap's maturity. The difference between swap rates in different currencies can be looked upon as a rough expression of the market's evaluation of the components that stem from inflation and exchange rate differences.²²

The difference between Norwegian and German (euro) 10-year swap rates and 10-year government bond yields in the latter half of 2002 indicates that elements related to liquidity and any other factors combined accounted for minus 2 points. Since Chart 7 indicates that the liquidity premium on an Aaa-rated bond with a volume outstanding equivalent to EUR 2000 million is at least 10 points higher than for the German government bond, one could have expected a positive residual factor.

The method used may thus indicate that there was a scarcity premium in the pricing of the Norwegian 10-year government bond in the latter half of 2002, and that this contributed to reducing the yield.

¹⁸ The municipal bank bond consists of KOMB63, 8.15%, 95/05 and KOMB73, 5.5%, 98/08.

¹⁹ Differences in residual maturities and coupon rates give a duration between 7 and 8 years.

²⁰ S&P 500/Moody's

²¹ The parties in an interest rate swap agree to swap interest payments on a defined principal over a fixed period. Normally, a fixed (swap) rate is exchanged against a variable (money market) rate. The swap rate is set so that the present value of in-going and out-going payments is equal. Swap rates are also to some extent influenced by supply and demand conditions.

²² The participants in the swap market in Norway and Europe are fairly similar so that credit risk is not taken into account in the comparison. It is also assumed implicitly that the liquidity premium for the Norwegian and European swap rate is approximately the same.

4. The significance of a shortage of Norwegian government bonds

Fluctuating supply and demand pressures may be expressed in prices to a degree that does not reflect the market's assessment of fundamental factors. When outstanding volume is low, such pressures may take hold in the market and prices may be affected more permanently by the trading flow. This price component is often called a shortage premium. Such price components may fluctuate widely if demand is relatively large and represents a particularly homogeneous group. This tendency can at times be observed in the Norwegian government bond market.²³ Variations in the shortage premium undermine the value of the information that may be derived from the government yield curve.

Cooper and Scholtes (2001) analyse the importance for pricing of reduced supply (in the primary market) of US and British government bonds. Coopers and Scholtes state that incorrect pricing depends on two factors: i) there is a group of investors with price-inelastic demand for government bonds and ii) the supply of government bonds is low enough that this investor group becomes the marginal and hence dominant investors that dictate the bond price. Their article suggests that price inelasticity of demand is a result of regulations that require or parameters that motivate investors to buy government bonds in spite of a yield rate that is "too" low.

A number of conditions in the Norwegian bond market imply that supply and demand conditions may have a particularly large impact on price formation:

- Outstanding volume in the government bond market is limited and has declined in the last few years relative to the demand side of the market.
- The possibility of classifying government bonds as fixed assets reduces in practice the remaining supply in the secondary market.
- Prevailing regulations provide life insurance companies and pension funds with some incentive to invest in safe government bonds. This may apply in particular in periods when negative returns on the companies' investment portfolios deplete the buffer capital and reduce the companies' ability to invest in instruments with higher expected returns and risk.
- Integration in the European (government) bond market may have increased Norwegian government bonds' value in the international market as an instrument of diversification. At times, this may increase the demand from abroad for Norwegian government bonds.
- Norwegian government bonds, which are used as collateral for loans in Norges Bank, give the least haircut in the value of the loan.

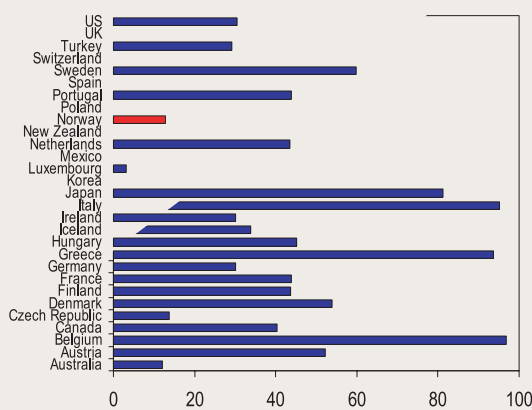
Norwegian government debt in a European perspective

As of 1 January 2003, outstanding government debt in the note and bond markets was NOK 51.5 billion and NOK 124.6 billion respectively.¹ In an international perspective, Norwegian government debt is small, calculated both in absolute value and relative to GNP, cf. chart. Outstanding volume in the individual Norwegian government bonds is therefore relatively low by international standards.

Integration in the European government bond market in recent years has led to increased competition among issues from the various EU countries. Greater substitutability between different countries' issues in euro has contributed to this. Liquidity has become a decisive competitive parameter, and this has contributed to increasing the focus on benchmark loans with large outstanding volume. The segments being given priority are 2, 5 and 10-year bonds, and the outstanding volume is often more than 5 billion, which is the minimum requirement for listing on the European electronic marketplace EuroMTS.

Differences in the size of the bond issues, the market structure and the existence of substitutable instruments means that government bond liquidity is often better in the EU countries' than in Norway and that scarcity has less impact on prices.

Chart Securitised government debt as a percentage of GDP in the OECD countries. 2000



Source: OECD

¹ Debt issues include NOK 3.4 billion in repayment loans which were issued during the period 1968 to 1986.

The possibility of achieving cheap financing by entering into a buy-back agreement (repo²⁵) at a low yield on government bonds with scarcity in the market may help

²³ Scarce supply also makes the market vulnerable to the behaviour of individual market participants, and at times allows individual market participants to achieve enough market power to have a pronounced influence on prices.

²⁴ Elasticity expresses how sensitive demand or supply is to price changes. Inelastic demand (supply) means that demand (supply) is not sensitive to price changes.

²⁵ A repo (repurchase agreement) is a buy-back agreement for a security, where the date and price is set. Because a repo involves the purchase of a security at one price and sale at another, there is an implied yield on the liquidity which changes hands during the life of the repo. In the repo market, repos are traded on the basis of this yield.

to increase the willingness to pay above and beyond the fundamental value.²⁶

The following illustrates the significance of scarcity in pricing of a Norwegian government bond. Developments in the price of government bond NST 465 in the autumn of 2002 indicate that scarcity was a real and significant factor in price formation. Chart 8 shows developments in the yield spread between government bond NST 465 and an interest rate swap with an equal residual maturity, i.e. the swap spread. Normally, the swap spread consists primarily of a credit risk component. As a rough approximation, it is assumed that the swap rate has been correctly priced on the basis of expectations concerning real interest rates and inflation and the addition of relevant premia. This is the basis of comparison in Chart 8. The swap market may be affected to some degree by supply and demand pressures, but probably to a lesser degree than the bond market, which has real supply limitations. In addition, underlying figures indicate that turnover is considerably larger in the swap market than in the bond market. This underpins efficiency in this market.

If pricing in the government bond market is not affected by supply and demand pressures, the swap spread, by means of a constant credit risk premium, will normally be relatively stable over time. The stability in the German swap spread indicates that variations in the credit risk premium in the Norwegian swap rate²⁷ in the last half of 2002 have not been large.

Chart 8 shows that the swap spread in Norway widened markedly in the fourth quarter of 2002. Until that time, the spread had shown a tendency to narrow to a level that was roughly 15 points above the German swap spread.

Life insurance companies, pension funds and foreign sectors are not considered to be very price sensitive with regard to supply and demand in this period. After a pro-

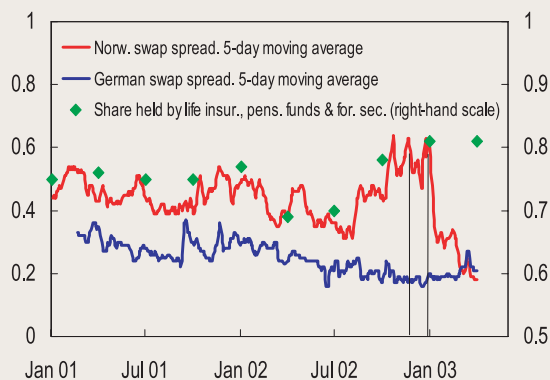
nounced fall in stock markets in the two preceding quarters, it may be assumed that life insurance companies' and pension funds' willingness to pay for government bonds was relatively high. The fall in the equities markets combined with high interest rates in the krone market made it favourable for foreign sectors to invest in Norwegian government bonds. In addition, the Norwegian krone was considered to be a safe haven during a period marked by uncertainty in the Middle East, high oil prices and an international recession.

According to VPS statistics, these groups' holdings of NST 465 increased from 69 per cent to 81 per cent of the total outstanding volume from the beginning of the second quarter to year-end. The increase was primarily the result of acquisitions by foreign sectors. Chart 8 also shows the proportion of NST 465 owned by insurance companies, pension funds and foreign sectors. The chart shows that the swap spread, as an expression of the scarcity premium, tends to widen when the proportion of NST 465 owned by the above mentioned groups increases.

The shape of the yield curve towards the end of November 2002, cf. Chart 9, also underpins the hypothesis that demand has influenced pricing. This applies in particular to the 2-year segment of the curve. The size of the swap spread for longer maturities indicates that there was no general widening of the swap spread, which could for example result from an increase in the credit risk premium.

Other factors also support the hypothesis that supply has influenced the widening of the swap spread. After the announcement of the issue of NST 465 by auction on 25 November 2002 and on 6 January 2003, cf. Chart 8, the swap spread narrowed considerably. The latter auction did not result in any substantial change in the proportion of outstanding volume owned by insurance companies, pension funds and foreign sectors. However, due to the increase in total volume, the volume in the market available for sale has increased. The volume appears to be adequate so that price is not significantly affected by the shortage premium.

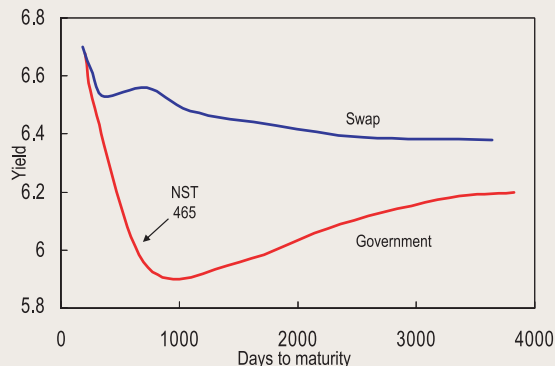
Chart 8 Norwegian and German swap spreads with the same maturities as NST 465, and the share of outstanding volume owned by life insurance companies, pension funds and the foreign sector¹⁾



¹⁾Announcement of auction dates 25 November and 6 January are indicated by the vertical lines

Sources: Reuters, the Norwegian Central Securities Depository and Norges Bank

Chart 9 Swap and government yield curve, 25 November 2002



Source: Reuters

²⁶ In a theoretical study, Duffie (1996) shows that this may be factored into the price of such papers, while Jordan and Jordan (1997) find empirical evidence for the phenomenon in the US.

²⁷ This is partly due to the fact that many of the same market participants are operating in the interest rate swap market in both Norway and Europe.

Turnover of NST 465 in the repomarket also indicates that there has been a considerable shortage of the bond in the period up to the end of 2002. Repo turnover increased substantially through 2001 and 2002 and pushed the repo rate down. In the second half of 2002, the repo rate²⁸ for transactions in which Norges Bank did not take part was an average of 20 basis points below the sight deposit rate, while the difference in November 2002 was 50 basis points. The possibility of obtaining cheap financing by lending government bonds when there is a shortage in the market may therefore have discouraged other investor groups from offering their bond holdings for sale despite a high price.

In the period from the beginning of 2001 to the fourth quarter of 2002, the average difference between the Norwegian and German swap spreads was 17 basis points. In the fourth quarter of 2002, the difference was 36 basis points, which may indicate an increase in the shortage premium of roughly 20 basis points in this period.

Due in part to the shortage of Norwegian government bonds, other market participants, for example in the foreign sector, may consider it to be favourable to issue bonds with long maturities in Norwegian krone. The number of issues from highly rated issuers in the Eurokrone market²⁹ was considerable. Demand for such issues from Norwegian life insurance companies probably contributed to this. The shortage in the government bond market will be reduced to the extent that this type of issue serves as a substitute for Norwegian government bonds for some investors. Therefore, such issues may indirectly contribute to reducing “incorrect pricing” of Norwegian government bonds and in this way contribute to a more informative government yield curve.

5. Conclusion

Prices in the government bond market normally reflect fundamentals. In some periods, limited supply may be observed to have had a substantial impact on prices, thus reducing the information content in the prices. Developments in the price of NST 465 in the autumn of 2002 are an example of this.

A low outstanding volume, and subsequent low liquidity, exposes the Norwegian government bond market to both temporary and permanent supply and demand

components in the formation of prices. This raises the question of whether price in the government bond market provides a correct picture of market expectations concerning future real interest rates and inflation. The price of NST 465 in the autumn of 2002 represents a rare and extreme case of the shortage premium in pricing. At the same time, the ability of other instruments to serve as substitutes for government bonds in Norway is limited. This indicates that it may be appropriate to underpin the efficiency of the government bond market.

Flexibility in the management of government debt may help to prevent components that do not contain information about fundamental factors from being factored in to the price. The increase of NST 465 in December 2002 and January 2003 are examples of this.

Literature

- BIS (1999): *Market Liquidity: Research Findings and Selected Policy Implications*, Basel. CGFS study group.
- BIS study group on fixed income markets (2001): “The changing shape of fixed income markets”, *BIS Paper* no. 5 October 2001
- Blanco, Roberto (2001): “The euro-area government securities markets. Recent developments and implications for market functioning.” Banco de España – Servicio de Estudios *Documanto de Trabajo* no. 0120.
- Cooper, Neil og Scholtes, Cedric (2001): “Government bond market evaluations in an era of dwindling supply”. *BIS Paper* no. 5, October 2001.
- Danmarks Nationalbank (2003): *Statens låntagning og gæld 2002*. (Government lending and debt).
- Finnish State Treasury Internet homepage: www.valtiokonttori.fi
- Fleming, Michael J. (2001): “Measuring Treasury Market Liquidity”. Federal Reserve Bank of New York, *Staff Reports*, July 2001, no. 133.
- Jordan, Bradford D. and Jordan, Susan D. (1997): “Special Repo Rates: An Empirical Analysis”. *The Journal of Finance*, vol. LII, No 5. December 1997.
- OECD (2001): *Trends and recent structural changes in OECD public debt markets*. Note of the Task Force of the Working Party of Public Debt Management.
- Proposition no. 1 to the Storting, Annex 14 (2002-2003).

Annex. Price according to the primary dealer agreement:

Residual maturity	2001 – 27 May 2002		After 27 May 2002	
	Price spread, maximum no. of basis points	Volume, in millions of NOK	Price spread, maximum no. of basis points	Volume, in millions of NOK
< 2 years	15	5	15	20
2 - 4 years	20	5	20	20
4 - 7 years	30	5	30	15
7 - 10 years	40	5	40	10
10 - 15 years	50	5	50	5

²⁸ Based on daily volume-weighted average repo rate

²⁹ Eurokrone bonds are bonds in NOK issued outside of Norway.

Application concerning a merger between DnB Holding ASA and Gjensidige NOR ASA

We refer to the letter dated 26 May 2003 from Kredittilsynet (the Financial Supervisory Authority of Norway) requesting an opinion on the application concerning a merger between DnB Holding ASA and Gjensidige NOR ASA, as well as Den norske Bank ASA and Gjensidige NOR Sparebank ASA.

Owing to its special nature and major importance to society, the financial sector is subject to more control and regulation than other business sectors. This means, for instance, licensing requirements for start-ups as well as for changes in the structure of existing financial institutions. Norges Bank has a special responsibility to promote financial stability and foster robust and efficient financial infrastructures and payment systems. Therefore, in this assessment we attach importance to the financial soundness of the proposed group, risks to the payment system and consequences for the authorities' ability to handle any crises and for the system of guarantee funds. Because competition is essential for robust and efficient financial infrastructures and payment systems, the impact of a merger on competition will be evaluated. The discussion of competition will be restricted to the market for banking services.

Main points in the application

- Merger of the parent companies DnB Holding ASA ("DnB") and Gjensidige NOR ASA ("NOR") with DnB as the acquiring company. The name of the merged entity will be DnB NOR ASA.
- Merger of the two banks Den norske Bank ASA and Gjensidige NOR Sparebank ASA, with the latter bank as the acquiring company.
- For the time being, the life insurance businesses in Gjensidige NOR Spareforsikring ASA and Vital Forsikring ASA will continue to be run through existing companies. The activities of DnB's and NOR's other subsidiaries are to be coordinated to the extent and manner that is reasonable from a business standpoint. The merged group will seek to concentrate similar activities in one company.

As justification for the merger, the two banks adduce the increasing importance of economies of scale seen in light of the internationalisation of the Norwegian financial services market. DnB and NOR will merge as equal parties and seek to develop a strong and more competi-

tive group. Although the group's main focus will be on the Norwegian market, DnB and NOR state in their application that the group will be of a size and strength that may make expansion possible outside of Norway in areas where the new company has advantages. DnB and NOR estimate annual net synergies of NOK 1 360 million for the group as from 2007. Restructuring expenses are estimated at NOK 1 860 million.

Financial stability and the group's financial soundness

Robust and efficient financial markets as well as payment systems and financial institutions that enjoy the general confidence of money and capital markets and depositors promote financial stability. In general, a failure in a larger financial group will have more wide-ranging consequences than a failure in a smaller financial group. Thus, it is important to assess the impact on financial stability of a merger of the two largest Norwegian financial groups.

A merger will result in the concentration in a single financial services group of a larger share of the total risk relating to the provision of credit and other financial services. Thus, the stability of the financial system will become more dependent on the risk management, risk handling and internal control of this group. If there is an operational failure or an error in strategy at DnB NOR, the consequences may be more serious than if this were to happen at one of the groups today. Disturbances in macroeconomic developments or in the securities markets may also increase the risk of financial instability if the merged group adapts itself in such a way that it is vulnerable to such developments.

However, a merger will provide an opportunity for a somewhat greater degree of national as well as international diversification. Losses in connection with weaker developments in individual industries or regions may be lower in relation to capital for the new group than for the sum of the two banks.

If the expected cost savings are realised, the group's ability to cover losses from ongoing operations will be improved.¹ Its size may also make the group more attractive in international capital markets, enabling it to raise new capital on more reasonable terms. Economies of scale relating to the development of systems for mea-

¹ In the literature there is a great deal of discussion as to whether economies of scale exist in banking. There is no unambiguous view that such economies of scale do not exist.

suming, managing and handling risk for increasingly complex financial products may also help to make DnB NOR a sounder institution.

Whether or not a merger between DnB and NOR will make the financial system more stable will depend on whether such gains are realised and on how capital adequacy is affected by the strategic choices, including the choice of risk profile, made by the merged group.² To help to ensure that the stability of the financial system is not weakened by a merger, if approved, there is a need for close supervisory monitoring of DnB NOR's activities, not least in respect of choice of risk profile and systems for managing risk.

There is reason to expect that DnB NOR will be subject to greater attention from a broader selection of lenders and credit rating agencies than the two banks individually are today. The monitoring by the market may thus serve to discipline DnB NOR. Attempts to increase the group's profitability at the expense of an adequate risk profile would carry their own punishment more quickly than before in the form of a higher risk premium on funding from the capital markets.

The impact on Norwegian payment systems

Today, DnB and NOR are settlement banks for their respective groups of savings banks. These settlement systems are the source of various types of risk for participating banks and for DnB and NOR. There is reason to assume that DnB NOR will wish to merge the settlement bank activities of the two banks.

The participating banks' use of DnB or NOR as a settlement bank gives rise to risk because DnB or NOR may experience financial difficulties. The banks participating in these settlement systems increase or reduce their claims on DnB or NOR depending on the size of the positions that arise in the settlements. A bank's claims on another bank are not covered by deposit guarantees. If financial problems should arise in the merged bank, far more banks will be affected than if such problems were to arise in one of the settlement banks today. However, calculations show that participating banks' positions vis-à-vis DnB NOR are limited relative to their core capital. Liquidity risk also appears to be limited.

DnB NOR may also suffer losses if one of the participating banks experiences financial problems. This is due to the fact that DnB NOR guarantees that the settlement will be completed vis-à-vis the other participating banks. However, calculations show that the maximum loss that DnB NOR may suffer in this connection will normally be small relative to DnB NOR's core capital.

Operating a settlement system is a source of operational risk, i.e. the risk that computer systems or com-

munication between banks will fail or break down. Among other things, this risk depends on the technical solutions that are chosen and is to a large extent a question of cost. Awareness among operational staff of operational risk is also important. If IT operations are merged, the impact of a failure in this system will be greater than if this failure affects one of the systems today. However, this may be compensated for by devoting more resources to security. Although Norges Bank is able to set requirements in this connection, the responsibility for operating the settlement system and handling the operational risk lies with the bank.

Crisis management

The authorities' role

In crisis situations where the existence of a business appears to be threatened, the regulations that apply to financial institutions differ from those that apply to other businesses. If neither the bank's management and owners nor the guarantee funds can solve liquidity or capital adequacy problems, the authorities will have to consider appropriate crisis management.

According to the Guarantee Schemes Act, a bank that does not have a financial basis for continued operation and for which a private solution whereby it is acquired by or merged into another bank is not possible, will at the outset be placed under public administration. However, a bank may be so important to the financial system that other solutions to the crisis may be more appropriate.

In the event of a crisis, large entities pose considerable challenges to the authorities, challenges that may grow with the size and complexity of a financial institution. However, the banking crisis demonstrated that the authorities were capable of dealing with a crisis involving a larger portion of the Norwegian banking system than DnB NOR will constitute. If the supervisory authorities closely monitor DnB NOR, and this group also has a clearly outlined organisation and effective control systems, the basis for rapid and effective crisis management would be better.

One concern in relation to large entities is that there may be expectations that such financial institutions will be rescued irrespective by the authorities if they experience financial difficulties ("too big to fail"). This may lead to inadequate monitoring of the bank's activities and insufficient risk awareness on the part of lenders and credit rating agencies alike. Such an impairment of market discipline may contribute to moral hazard. In the view of Norges Bank, there should be no basis for such expectations. Situations that threaten the financial system to the extent that the authorities must take special action cannot be established in advance. Thus, one can-

² The results of the G10 report "Report on consolidation in the financial sector" (BIS, 2001) show that the financial soundness of individual institutions does not necessarily increase as a result of consolidation in the financial sector and the formation of large, complex financial institutions, because some realise gains in the form of regional and supranational diversification by increasing their risk-taking. Further, the size and complexity of these institutions may lead to an increase in operational risk. When this is juxtaposed with the greater impact of such institutions' financial problems, the risk to the financial system may also increase.

not – regardless of the prevailing economic climate – decide in advance that certain banks are so important or so large that they cannot be placed under public administration. If public administration is not deemed appropriate in a given situation, the owners will nevertheless have to reckon on losing invested capital and the management will have to be replaced. This applies regardless of the size and complexity of the bank and will also apply to DnB NOR after a merger, if approved. Nor will Norway be in a unique position internationally with regard to having large entities: Sweden, Denmark and Finland have an equal or larger concentration in their financial sectors.

A merger of the banking groups will not change Norges Bank's role or responsibility in a crisis. Should a situation arise in which the financial system is threatened, Norges Bank, in consultation with other authorities, will assess the need for, and, if necessary, initiate measures that may help bolster confidence in the financial system. Extraordinary provisions of liquidity in the event of liquidity problems are among Norges Bank's instruments.

Ownership structure and crisis management

Through the Government Bank Investment Fund, the central government owns 47.8 per cent of the shares in DnB. The merger will reduce this stake to about 28 per cent in the merged entity. The central government has previously indicated that its holdings in DnB may be reduced, but not to less than 34 per cent. If the central government intends to hold an equally high stake in the merged bank, the merger will mean that the central government's direct involvement in the Norwegian banking system will be substantially higher than today.

Norges Bank assumes that decisions involving central government holdings in the merged entity are a political matter, but wishes to point out that negative control in an important Norwegian bank raises certain questions relating to the central government's role with regard to handling financial crises. As the supervisory and competition authority and through its economic policy as a whole, the central government has numerous tasks and makes a number of decisions affecting banks' developments and financial soundness. Conflicts may arise between the considerations that the central government has to address as owner and the central government's other tasks. Prior to the banking crisis, the central government did not have any stakes in Norwegian banks. A high level of central government involvement in the banks might weaken the central government's capacity for action if the banks' situation were to become critical again, since the central government, as owner, must be assumed to have a considerable joint responsibility for the situation.

The system of guarantee funds

If the merger becomes a reality, it is obvious that the commercial banks' and savings banks' guarantee funds should be merged. The two bankers' associations are now discussing how a prospective merger can be implemented. Norges Bank argued for a single fund in its comments on the Banking Law Commission's Report no. 2 (NOU 1995: 25) on the Guarantee Schemes Act.

There is little that weighs against a merger of the two guarantee funds. The business profiles and balance sheet structure of the commercial and savings banks have become increasingly similar. Since the savings banks have been allowed to convert to limited liability companies, this trend may intensify in the future.

Although the changeover to a single fund may, at the outset, be accomplished regardless of other possible changes in this Act, it is the opinion of Norges Bank that the Guarantee Schemes Act should be evaluated anew. As part of Norges Bank's comments on the Banking Law Commission's Report no. 6 (NOU 2001: 23) on the activities of financial undertakings, we wrote the following: "Furthermore, an assessment of the guarantee fund scheme should be made on a broad basis in which one looks at how Norwegian practice affects the competitiveness of Norwegian banks vis-à-vis other countries." In addition to the changeover to a single fund, it will make sense in this connection to consider the size of the deposit guarantee, the mandate for the funds and the size and formation of the deposit insurance fee.

Competitive conditions

Deposit and lending markets

DnB NOR will have large market shares in some geographical areas and businesses. Figures from 2002 indicate that DnB NOR (including Nordlandsbanken) will have a market share of about 38 per cent in terms of both bank lending (to parties other than financial institutions) and deposits (from customers). This is approximately equal to the market share of Nordea Bank Finland in Finland. Danske Bank has a somewhat lower market share for bank lending and bank deposits in Denmark, but has a higher market share measured by total assets than what DnB NOR will have in Norway.

DnB NOR's market share with regard to bank lending and deposits will be even higher in eastern and northern Norway, and highest in Vestfold county. In the securities fund market, the market share measured by DnB NOR's share of combined total assets in this market will be 44 per cent. DnB NOR's share of total loans from finance companies is even higher (47 per cent), whereas the corresponding share for mortgage companies is 8 per cent.

The merged bank will have especially high market shares in some geographical areas when banks that cooperate with Gjensidige NOR Sparebank ASA are included. It is unfortunate that two banks in the same geo-

graphical area have agreements that may hinder competition. In their application, the parties to the merger state that agreements that cover anti-competitive arrangements and market cooperation will not be continued.

DnB NOR's large market shares imply weakened competition in parts of the banking market. The question is how much competition is weakened and whether any measures may be initiated to counteract this deterioration. Today, competition in most markets for banking services is strong. A reduction in the number of DnB NOR branches may prompt some customers to change banks, and many companies may wish to have more than one bank. Market shares may therefore fall somewhat. There are competitors who may establish themselves in areas where any market power is exploited. New technology and the Internet are contributing to this development. This applies especially to the private customer market. Large corporate customers that have a credit rating from a credit rating agency and are well known in the market will have access to financing from foreign banks as well as the securities markets. Reduced competition is likely to have the biggest impact on small and medium-sized enterprises in outlying regions, where intimate knowledge of the individual company may be essential and customer relationships limit moving from one bank to another. The savings banks' future commitment to this market will therefore be important. To ensure real alternatives to the merged bank, greater activity from savings banks aimed at customers of this sort would be desirable. Expanded cooperation, a change in the form of organisation and possible mergers are measures that may be considered to assist local savings banks in providing competition in a wider range of financial services.

Competition from abroad is also considerable and growing. First, there are several Nordic banks that define the Nordic region as their domestic market. Foreign ownership in the Norwegian finance sector is already at a high level compared with other Nordic and European countries. At the end of 2002, foreign-owned subsidiaries and branches represented about 26 per cent of the total capital in the Norwegian banking market. This is the highest share in the Nordic region. Both Nordea Bank Norge ASA and Fokus Bank ASA are parts of Nordic financial services groups. Percentages are higher in Luxembourg, Ireland and the United Kingdom, due primarily to these countries' roles as financial centres. Second, the EEA regulations provide ample opportunities for competition from foreign financial services companies through subsidiaries, local branches or cross-border activity. The rules for ownership in Norwegian financial institutions have recently been relaxed so that the possibilities for setting up cross-border businesses have increased. Third, increasing competition among providers of financial services is a high priority goal in the EU. The Financial Services

Action Plan contains several specific measures intended to ensure this. Over time, this will contribute to stronger competition in Norway as well.

The money market

The Norwegian money market is characterised by a small number of big players, including foreign banks, that are established in Norway. Although DnB NOR will become a significant player in the money market, the other players are probably large enough to prevent the new bank from acquiring dominating market power.

DnB is already one of the largest domestic players in the Norwegian foreign exchange market, but due to the large element of foreign players, DnB cannot be said to have power over this market either. NOR is a minor player in the Norwegian foreign exchange market.

With regard to the distribution of liquidity in the banking system, DnB NOR can attain a high level of dominance. DnB and NOR are settlement banks for a large number of smaller banks, and this, in addition to the size of the merged bank, will mean that DnB NOR will have a large percentage of the surplus liquidity in the market. It may be undesirable for a single player to control a large share of the banking system's liquidity and during certain periods to be the only provider of liquidity in the market. Weighing against the possibility that DnB NOR will have undesirable market power in the very short-term money market is the fact that there are no entry restrictions in this market, since most banks, including foreign subsidiary banks and branches, already have an account with Norges Bank. However, Norges Bank will follow developments in the money market closely and, if necessary, intervene if market power is exploited.

Settlement systems

If the settlement systems of DnB and NOR are merged, there will be one bank fewer to operate level 2 settlement systems, i.e. in addition to Norges Bank's settlement system (NBO). This may lead to less competition in this market, and the impact of a failure in the merged settlement system will be greater. However, there will still be potential competitors. The market situation prior to DnB receiving a settlement bank licence in June 2001 was judged to be satisfactory.

Summary

A merger between DnB and NOR will mean that a larger share of the overall risk of providing credit and other financial services to Norwegian businesses and households will be concentrated in a single financial services group. If a financial crisis should hit DnB NOR, its impact on the financial system will be more far-reaching than if a crisis were to hit either one of the groups today.

At the same time, a larger size will facilitate cost savings, diversification and better risk management, which may contribute to stable earnings and satisfactory financial strength. Whether or not a merger will make the financial system more stable will depend on whether such improvements are realised and, in general, on the strategic choices made by the merged group.

There is a need for close supervisory monitoring of DnB NOR's activities, not least regarding choice of risk profile and systems for managing risk. Such monitoring will also assist the authorities in dealing more quickly and more efficiently with serious problems, should they arise.

In crisis situations, the proposed financial group may pose greater challenges to the authorities due to its size and complexity. The banking crisis demonstrated that the authorities were capable of dealing with a crisis involving a larger portion of the Norwegian banking system than DnB NOR will constitute. However, the fact that the central government is a major shareholder may be a complicating factor in the handling of a crisis in the merged bank.

The merger will justify a broad review of the system of guarantee funds. Nevertheless, a changeover to a single fund should be implemented.

Norges Bank expects that competition in most markets for banking services will continue to be satisfactory after the merger. Reduced competition is likely to have the most significant impact on small and medium-sized enterprises in outlying regions, where intimate knowledge of the individual company may be essential and where customer relationships limit moving from one bank to another. Therefore, the savings banks' future commitment to this market will be crucial.

Norges Bank cannot see that financial stability considerations are a decisive impediment to the merger desired by the two banks.

Jarle Bergo
Jon A. Solheim

Copy: Ministry of Finance

Statistical annex

Financial institution balance sheets

1. Norges Bank. Balance sheet
2. Norges Bank. Specification of international reserves
3. State lending institutions. Balance sheet
4. Commercial and savings banks. Balance sheet
5. Commercial and savings banks. Loans and deposits by sector
6. Mortgage companies. Balance sheet
7. Finance companies. Balance sheet
8. Life insurance companies. Main assets
9. Non-life insurance companies. Main assets
- 10a. Securities funds' assets. Market value
- 10b. Securities funds' assets under management by holding sector. Market value

Securities statistics

11. Shareholdings registered with the Norwegian Central Securities Depository (VPS), by holding sector. Market value
12. Share capital and primary capital certificates registered with the Norwegian Central Securities Depository, by issuing sector. Nominal value
13. Net purchases and net sales (-) in the primary and secondary markets of shares registered with the Norwegian Central Securities Depository, by purchasing, selling and issuing sector. Market value
14. Bondholdings in NOK registered with the Norwegian Central Securities Depository, by holding sector. Market value
15. Bondholdings in NOK registered with the Norwegian Central Securities Depository, by issuing sector. Nominal value
16. Net purchases and net sales (-) in the primary and secondary markets for NOK-denominated bonds registered with the Norwegian Central Securities Depository, by purchasing, selling and issuing sector. Market value
17. NOK-denominated short-term paper registered with the Norwegian Central Securities Depository, by holding sector. Market value
18. Outstanding short-term paper, by issuing sector. Nominal value

Credit and liquidity trends

19. Credit indicator and money supply
20. Domestic credit supply to the general public, by source
21. Composition of money supply
22. Household financial balance. Financial investments and holdings, by financial instrument
23. Money market liquidity

Interest rate statistics

24. Nominal interest rates for NOK
25. Short-term interest rates for key currencies in the Euro-market
26. Yields on Norwegian bonds
27. Yields on government bonds in key currencies
28. Commercial and savings banks. Average interest rates and commissions on utilised loans in NOK to the general public at end of quarter
29. Commercial and savings banks. Average interest rates on deposits in NOK from the general public at end of quarter
30. Life insurance companies. Average interest rates by type of loan at end of quarter
31. Mortgage companies. Average interest rates, incl. commissions on loans to private sector at end of quarter

Profit/loss and capital adequacy data

32. Profit/loss and capital adequacy: commercial banks
33. Profit/loss and capital adequacy: savings banks
34. Profit/loss and capital adequacy: finance companies
35. Profit/loss and capital adequacy: mortgage companies

Exchange rates

36. The international value of the krone and exchange rates against selected currencies. Monthly average of representative market rates
37. Exchange cross rates. Monthly average of representative exchange rates

Balance of payments

38. Balance of payments
39. Norway's foreign assets and debt

International capital markets

40. Changes in banks' international assets
41. Banks' international claims by currency

Foreign currency trading

42. Foreign exchange banks. Foreign exchange purchased/sold forward with settlement in NOK
43. Foreign exchange banks. Overall foreign currency position
44. Norges Bank's foreign currency transactions with various sectors

Norges Bank publishes more detailed statistics on its website, www.norges-bank.no. The Bank's statistics calendar, which shows future publication dates, is only published on this website.

Financial institution balance sheets

Table 1. Norges Bank. Balance sheet.^{1) 2)} In millions of NOK

	31.12.2002	31.07.2003	31.08.2003	30.09.2003	31.10.2003
FINANCIAL ASSETS					
Foreign assets	841 614	1 045 744	1 082 306	1 059 862	1 084 353
International reserves ^{3) 4)}	224 226	258 144	255 806	247 461	245 587
Government Petroleum Fund investments	608 475	777 845	816 365	802 919	828 934
Other foreign assets	8 913	9 755	10 135	9 482	9 832
Domestic claims	16 120	16 853	28 464	28 893	29 210
Bearer bills	2 088	3 671	14 833	14 796	14 830
Bearer bonds	10 750	10 871	10 848	10 972	10 876
Loans to banks	3	3	0	1	1
Loans, deposits and earned interest	2 121	1 389	2 264	2 438	2 810
Other domestic claims	1 158	919	519	686	693
Stocks and assets	1 597	1 512	1 497	1 499	1 481
Stocks	22	21	14	14	13
Assets	1 575	1 491	1 483	1 485	1 468
Costs	0	109 502	141 589	121 723	141 818
TOTAL ASSETS	859 331	1 173 611	1 253 856	1 211 977	1 256 862
LIABILITIES AND CAPITAL					
Foreign liabilities	62 773	79 463	71 271	64 690	63 949
IMF holdings of NOK	8 888	9 729	10 109	9 456	9 805
Other foreign liabilities	53 885	69 734	61 162	55 234	54 144
Counterpart of SDRs in the IMF	1 583	1 684	1 744	1 685	1 697
Notes and coins in circulation	44 955	41 101	40 724	40 262	40 816
Domestic deposits	720 367	891 815	944 478	928 037	955 808
Treasury	52 492	80 193	87 506	88 465	109 424
Government Petroleum Fund	608 475	777 845	816 365	802 919	828 934
Banks	59 053	33 503	40 373	36 412	17 103
Other deposits	347	274	234	241	347
Interest accrued, not yet due, to the Treasury	0	116	248	376	563
Other domestic debt	4 214	6 133	4 293	9 890	5 804
Equity	25 439	25 439	25 439	25 439	25 439
Valuation adjustments	0	98 054	131 302	102 673	120 183
Income	0	29 806	34 357	38 925	42 603
TOTAL LIABILITIES AND CAPITAL	859 331	1 173 611	1 253 856	1 211 977	1 256 862
Items not included in this balance sheet:					
Foreign currency sold forward	14 550	30 690	35 658	49 094	40 314
Foreign currency purchased forward	15 806	31 481	36 286	49 947	41 609
Derivatives sold	159 417	151 012	146 975	206 522	231 484
Derivatives purchased	168 005	161 124	151 320	213 759	230 825
Allotted, unpaid shares in the BIS	310	310	310	310	310

¹⁾ Some presentational changes have been made in the monthly balance sheet report, to apply as from April 2003.

The periods shown for comparison have been revised accordingly.

²⁾ The periods shown for comparison in Table 2 have not been revised.

³⁾ International reserves include fixed income instruments subject to repurchase agreements.

⁴⁾ Securities and gold are valued at fair market value.

Table 2. Norges Bank. Specification of international reserves¹⁾. In millions of NOK

	31.12.2002	31.07.2003	31.08.2003	30.09.2003	31.10.2003
Gold	2 806	2 776	3 112	2 975	3 037
Special drawing rights in the IMF	2 190	2 348	2 461	2 378	2 384
Reserve position in the IMF	6 886	7 049	7 268	7 332	7 105
Loans to the IMF	834	789	811	761	753
Bank deposits abroad	87 914	105 803	102 670	92 163	87 310
Foreign Treasury bills	567	698	692	678	665
Foreign certificates	-	1 216	1 176	878	1 395
Foreign bearer bonds ²⁾	104 573	114 046	116 100	115 883	113 818
Foreign shares	16 357	25 491	26 889	27 915	29 838
Accrued interest	2 053	-2 071	-5 373	-3 501	-719
Short-term assets	-	-	-	-	-
Total	224 180	258 145	255 806	247 462	245 586

¹⁾ See footnotes in Table 1.

²⁾ Includes bonds subject to repurchase agreements

Source: Norges Bank

Table 3. State lending institutions. Balance sheet. In millions of NOK

	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Cash holdings and bank deposits	2 440	2 804	2 285	2 172	2 131
Total loans	186 121	188 076	190 941	190 988	191 526
Of which:					
To the general public ¹⁾	183 852	185 801	188 608	188 726	189 323
Claims on the central government and social security administration	-	-	-	-	-
Other assets	7 913	6 192	8 218	6 736	6 698
Total assets	196 474	197 072	201 444	199 896	200 355
Bearer bond issues	38	34	33	29	29
Of which:					
In Norwegian kroner	38	34	33	29	29
In foreign currency	-	-	-	-	-
Other loans	185 776	187 482	191 156	191 056	191 539
Of which:					
From the central government and social security administration	185 776	187 482	191 156	191 056	191 539
Other liabilities, etc.	6 165	5 231	5 921	4 494	5 844
Share capital, reserves	4 495	4 325	4 334	4 317	2 943
Total liabilities and capital	196 474	197 072	201 444	199 896	200 355

¹⁾ Includes local government administration, non-financial enterprises and households

Sources: Statistics Norway and Norges Bank

Table 4. Commercial and savings banks. Balance sheet. In millions of NOK

	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Cash	4 393	5 063	4 030	4 515	4 112
Deposits with Norges Bank	54 048	57 760	58 547	40 119	34 092
Deposits with commercial and savings banks	14 807	16 026	17 763	29 494	25 354
Deposits with foreign banks	21 194	29 596	23 390	37 061	32 315
Treasury bills	5 898	4 289	6 395	8 866	10 469
Other short-term paper	15 104	15 770	10 034	7 129	7 977
Government bonds etc. ¹⁾	8 644	3 128	2 576	3 702	4 561
Other bearer bonds	89 697	93 450	97 752	103 103	98 869
Loans to foreign countries	49 303	46 264	49 024	49 951	46 814
Loans to the general public	1 089 520	1 096 289	1 117 134	1 144 220	1 163 470
Of which:					
In foreign currency	85 118	81 765	84 446	89 541	88 806
Loans to mortgage and finance companies, insurance etc. ²⁾	94 208	96 485	96 749	107 062	107 895
Loans to central government and social security admin.	434	671	557	528	286
Other assets ³⁾	94 411	104 216	153 201	161 368	162 817
Total assets	1 541 661	1 569 007	1 637 152	1 697 118	1 699 031
Deposits from the general public	723 986	757 632	758 326	788 394	773 152
Of which:					
In foreign currency	21 387	20 129	21 768	22 286	23 892
Deposits from commercial and savings banks	18 503	19 369	21 917	33 835	29 953
Deposits from mortg. and fin. companies, and insurance etc. ²⁾	39 453	45 997	45 463	46 820	44 247
Deposits from central government, social security admin. and state lending institutions	7 729	8 611	9 652	7 341	7 770
Funds from CDs	75 165	78 509	80 638	65 564	65 781
Loans and deposits from Norges Bank	8 065	8 812	9 560	7 436	7 224
Loans and deposits from abroad	219 437	213 583	212 076	215 315	199 767
Other liabilities	342 156	331 113	395 441	425 782	461 891
Share capital/primary capital	28 106	28 157	28 399	28 553	28 667
Allocations, reserves etc.	73 242	72 430	74 082	74 096	74 157
Net income	5 819	4 794	1 598	3 982	6 422
Total liabilities and capital	1 541 661	1 569 007	1 637 152	1 697 118	1 699 031
Specifications:					
Foreign assets	118 426	125 352	137 511	160 566	154 256
Foreign debt	377 881	370 392	416 204	431 702	434 835

¹⁾ Includes government bonds and bonds issued by lending institutions.

²⁾ Includes mortgage companies, finance companies, life and non-life insurance companies and other financial institutions.

³⁾ Includes unspecified loss provisions (negative figures) and loans and other claims not specified above.

Sources: Statistics Norway and Norges Bank

Table 5. Commercial and savings banks. Loans and deposits by sector¹⁾. In millions of NOK

	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Loans to:					
Local government (incl. municipal enterprises)	10 267	10 107	9 817	8 759	7 965
Non-financial enterprises ²⁾	366 660	358 997	366 176	371 478	364 033
Households ³⁾	712 593	727 186	741 141	763 983	791 472
Total loans to the general public	1 089 520	1 096 289	1 117 134	1 144 220	1 163 470
Deposits from:					
Local government (incl. municipal enterprises)	42 381	43 925	42 627	40 540	39 051
Non-financial enterprises ²⁾	212 912	225 553	219 261	221 815	220 971
Households ³⁾	468 693	488 154	496 438	526 038	513 129
Total deposits from the private sector and municipalities	723 986	757 632	758 326	788 394	773 152

¹⁾ Includes local government administration, non-financial enterprises and households.

²⁾ Includes private enterprises with limited liability etc., and state enterprises.

³⁾ Includes sole proprietorships, unincorporated enterprises and wage earners, etc.

Sources: Statistics Norway and Norges Bank

Table 6. Mortgage companies. Balance sheet. In millions of NOK

	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Cash and bank deposits	5 735	3 089	4 291	5 730	3 613
Notes and certificates	289	3 504	2 869	5 926	2 626
Government bonds ¹⁾	1 097	656	657	941	665
Other bearer bonds	54 788	48 002	51 650	57 401	56 802
Loans to:					
Financial enterprises	24 834	28 001	30 150	31 018	33 764
The general public ²⁾	168 558	182 011	187 251	193 656	198 596
Other sectors	10 230	9 907	9 435	9 941	9 760
Others assets ³⁾	2 361	1 063	4 413	5 089	4 833
Total assets	267 892	276 233	290 716	309 702	310 659
Notes and certificates	33 295	29 981	33 809	37 832	28 173
Bearer bonds issues in NOK ⁴⁾	62 151	62 710	59 839	58 688	57 784
Bearer bond issues in foreign currency ⁴⁾	83 090	89 079	94 823	104 369	110 204
Other funding	73 542	80 269	83 824	91 765	96 326
Equity capital	12 134	11 554	12 345	12 709	13 002
Other liabilities	3 680	2 640	6 076	4 339	5 170
Total liabilities and capital	267 892	276 233	290 716	309 702	310 659

¹⁾ Includes government bonds and bonds issued by state lending institutions.

²⁾ Includes local government administration, non-financial enterprises and households.

³⁾ Foreign exchange differences in connection with swaps are entered net in this item. This may result in negative figures for some periods.

⁴⁾ Purchase of own bearer bonds deducted.

Sources: Statistics Norway and Norges Bank

Table 7. Finance companies. Balance sheet. In millions of NOK

	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Cash and bank deposits	1 481	1 875	1 651	2 277	2 471
Notes and certificates	114	97	123	125	99
Bearer bonds	0	0	0	0	0
Loans ¹⁾ (gross) to:	87 086	86 521	88 919	90 943	91 657
The general public ²⁾ (net)	83 675	83 164	85 718	87 744	88 360
Other sectors (net)	3 205	3 218	3 018	3 059	3 131
Other assets ³⁾	2 480	2 249	2 474	2 621	2 393
Total assets	91 161	90 742	93 167	95 966	96 620
Notes and certificates	600	600	0	0	0
Bearer bonds	65	0	65	40	40
Loans from non-banks	10 287	10 840	10 989	11 146	10 811
Loans from banks	63 537	60 746	64 945	68 038	68 155
Other liabilities	8 541	10 929	9 356	8 605	9 146
Capital, reserves	8 131	7 627	7 812	8 137	8 468
Total liabilities and capital	91 161	90 742	93 167	95 966	96 620

¹⁾ Includes subordinated loan capital and leasing finance.

²⁾ Includes local government administration, non-financial enterprises and households.

³⁾ Includes specified and unspecified loan loss provisions (negative figures)

Source: Norges Bank

Table 8. Life insurance companies. Main assets. In millions of NOK

	30.06.2002	30.09.2002	31.12.2002	31.03.2003	30.06.2003
Cash and bank deposits	26 875	14 956	21 163	16 066	15 204
Norwegian notes and certificates	33 710	33 146	37 337	36 903	29 537
Foreign Treasury bills and notes	2 327	7 735	13 084	11 667	9 133
Norwegian bearer bonds	110 717	112 449	121 379	131 346	139 788
Foreign bearer bonds	84 144	105 789	96 277	99 165	104 317
Norwegian shares, units, primary capital certificates and interests	36 262	32 295	32 730	31 619	35 454
Foreign shares, units, primary capital certificates and interests	47 309	33 189	30 236	32 757	40 229
Loans to the general public ¹⁾	23 173	23 201	23 123	23 827	23 661
Loans to other sectors	1 447	680	656	680	664
Other specified assets	53 242	56 971	54 315	56 116	54 847
Total assets	419 206	420 411	430 300	440 146	452 834

¹⁾ Includes local government administration, non-financial enterprises and households

Source: Statistics Norway

Table 9. Non-life insurance companies. Main assets. In millions of NOK

	30.06.2002	30.09.2002	31.12.2002	31.03.2003	30.06.2003
Cash and bank deposits	7 539	7 285	7 861	7 843	7 220
Norwegian notes and certificates	5 647	6 055	7 949	10 721	12 330
Foreign notes and certificates	405	862	860	927	951
Norwegian bearer bonds	16 308	15 730	14 752	13 880	14 661
Foreign bearer bonds	13 706	14 582	14 138	13 758	14 765
Norwegian shares, units, primary capital certificates, interests	8 244	7 312	6 804	6 781	7 171
Foreign shares, units, primary capital certificates, interests	7 625	7 715	3 960	5 004	5 529
Loans to the general public ¹⁾	826	875	918	1 021	1 129
Loans to other sectors	349	138	212	281	278
Other specified sectors	41 916	41 499	40 541	44 731	45 414
Total assets	102 565	102 053	97 995	104 947	109 448

¹⁾ Includes local government administration, non-financial enterprises and households.

Source: Statistics Norway

Table 10a. Securities funds' assets. Market value. In millions of NOK

	30.06.2002	30.09.2002	31.12.2002	31.03.2003	30.06.2003
Bank deposits	4 743	3 523	3 564	4 107	5 658
Treasury bills, etc. ¹⁾	1 184	1 525	2 372	4 099	5 292
Other Norwegian short-term paper	19 440	21 541	21 693	20 794	21 031
Foreign short-term paper	249	224	235	0	0
Government bonds, etc. ²⁾	3 949	4 144	3 521	3 504	4 121
Other Norwegian bonds	25 014	24 730	26 354	25 060	26 048
Foreign bonds	2 533	2 407	2 665	0	0
Norwegian equities	26 466	19 023	19 385	16 401	20 564
Foreign equities	36 492	28 699	26 796	31 423	38 237
Other assets	2 552	2 463	2 597	2 566	2 956
Total assets	122 621	108 280	109 182	107 955	123 907

¹⁾ Comprises Treasury bills and other certificates issued by state lending institutions.

²⁾ Comprises government bonds and bonds issued by state lending institutions.

Sources: Norges Bank and Norwegian Central Securities Depository

Table 10b. Securities funds' assets under management by holding sector. Market value.
In millions of NOK

	30.06.2002	30.09.2002	31.12.2002	31.03.2003	30.06.2003
Central government and social security administration	427	480	422	488	639
Commercial and savings banks	3 453	2 666	2 869	2 080	2 452
Other financial corporations	13 104	11 122	14 504	11 618	14 329
Local government admin. and municipal enterprises	7 993	7 688	8 674	8 914	10 158
Other enterprises	21 102	19 649	21 733	21 046	23 099
Households	71 209	61 348	56 111	57 907	66 625
Rest of the world	3 745	3 552	2 900	3 937	4 641
Total assets under management	121 034	106 504	107 213	105 990	121 944

Sources: Norges Bank and the Norwegian Central Securities Depository

Securities statistics

Table 11. Shareholdings registered with the Norwegian Central Securities Depository (VPS), by holding sector. Estimated market value. In millions of NOK

Holding sector	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Central government and social security administration	198 032	214 025	196 897	230 564	228 580
Norges Bank	0	0	0	2	2
State lending institutions	3	13	14	14	18
Savings banks	2 930	3 007	2 886	3 176	3 350
Commercial banks	6 976	6 834	18 007	18 521	10 731
Insurance companies	21 378	19 756	17 917	21 053	23 254
Mortgage companies	67	71	34	32	30
Finance companies	3	3	2	2	2
Mutual funds	20 820	21 637	18 491	23 310	26 280
Other financial enterprises	38 781	49 245	47 802	48 594	48 764
Local government administration and municipal enterprises	3 746	3 355	3 182	3 805	3 890
State enterprises	7 705	8 340	7 830	6 354	6 677
Other private enterprises	128 089	129 578	117 654	137 008	143 478
Wage-earning households	39 778	41 941	40 108	44 307	47 553
Other households	1 862	1 918	1 791	2 005	1 981
Rest of the world	198 284	186 552	151 501	193 777	209 647
Unspecified sector	1 011	943	705	487	720
Total	669 464	687 217	624 820	733 011	754 955

Sources: Norwegian Central Securities Depository and Norges Bank

Table 12. Share capital and primary capital certificates registered with the Norwegian Central Securities Depository, by issuing sector. Nominal value. In millions of NOK

	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Savings banks	11 280	11 284	11 284	11 422	11 511
Commercial banks	15 725	15 595	15 845	15 845	15 845
Insurance companies	2 758	2 525	2 525	2 525	2 528
Mortgage companies	2 194	2 194	2 194	2 194	2 194
Finance companies	5	5	5	5	5
Other financial enterprises	19 806	20 048	20 238	20 114	20 092
Local government administration and municipal enterprises	2	2	2	2	2
State enterprises	18 463	18 468	18 268	18 268	18 268
Other private enterprises	45 019	44 817	46 108	49 646	45 814
Rest of the world	5 677	5 489	5 716	5 631	5 422
Unspecified sector	0	0	0	0	4
Total	120 929	120 426	122 184	125 652	121 684

Sources: Norwegian Central Securities Depository and Norges Bank

Table 13. Net purchases and net sales (-) in the primary and secondary markets of shares registered with the Norwegian Central Securities Depository, by purchasing, selling and issuing sector¹⁾. Estimated market value. In millions of NOK

Issuing sector	Purchasing/ selling sector																	Total ²⁾
	Cent.gov't and social security	Norges Bank	State lending inst.	Sav. banks	Comm. banks	Insur. companies	Mort. companies	Fin. companies	Secur. funds	Other financ. enterpr.	Local gov't & munic. enterpr.	State enterpr.	Other private enterpr.	Wage-earning households	Other households	Rest of the world	Unsp. sector	
Commercial banks	-12	0	0	66	1 645	-150	0	-1	45	-279	-13	1	-247	-242	-10	-99	0	703
Insurance companies	0	0	0	-1	0	-8	0	0	12	-8	-2	0	11	4	0	-11	2	0
Mortgage companies	0	0	0	3	-3	0	0	0	0	0	0	0	0	0	0	0	0	0
Finance companies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other financial enterpr.	-183	0	0	-53	1 254	384	0	0	258	-22	-32	-71	-950	-56	-61	-461	-1	7
Local gov't. admin. and municipal enterprises	0	0	0	0	0	0	0	0	0	0	-93	0	0	1	0	-1	93	0
State enterprises	-7 891	0	0	19	-375	250	-8	0	234	111	34	-9	833	309	33	6 475	18	32
Other private enterprises	-1 318	2	5	10	656	-25	-21	0	-843	-230	47	-2 591	6 047	-1 849	-247	6 240	111	5 996
Rest of the world	6	0	0	-18	2 956	73	1	0	-34	-255	-12	-6	-1 137	-64	5	-1 316	11	210
Unspecified sector	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-9 398	2	5	27	6 134	524	-28	-1	-327	-683	-70	-2 675	4 557	-1 897	-280	10 827	232	6 949

¹⁾ Issues at issue price + purchases at market value – sales at market value – redemptions at redemption value.

²⁾ Total shows net issues in the primary market. Purchases and sales in the secondary market result in redistribution between owner sectors, but add up to 0.

Sources: Norwegian Central Securities Depository and Norges Bank

Table 14. Bondholdings in NOK registered with the Norwegian Central Securities Depository, by holding sector. Market value. In millions of NOK

	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Central government and social security administration	26 175	26 709	24 658	25 942	27 183
Norges Bank	6 710	7 034	6 765	3 863	8 275
State lending institutions	183	166	162	145	141
Savings banks	35 112	33 813	34 185	37 036	34 638
Commercial banks	42 225	44 209	42 956	49 945	45 872
Insurance companies	170 384	182 923	195 999	204 979	208 000
Mortgage companies	15 575	14 968	15 084	17 522	16 348
Finance companies	27	67	65	58	63
Mutual funds	29 554	28 227	30 124	31 639	30 387
Other financial enterprises	3 706	4 061	7 650	7 993	8 245
Local government administration and municipal enterprises	18 640	18 591	20 350	22 568	22 801
State enterprises	2 600	2 951	3 060	2 976	2 813
Other private enterprises	22 624	22 092	23 544	25 578	23 075
Wage-earning households	16 470	16 512	16 987	17 232	18 125
Other households	5 154	5 042	5 846	6 341	6 436
Rest of the world	66 338	66 810	72 625	71 333	74 887
Unspecified sector	708	574	580	216	270
Total	462 187	474 748	500 640	525 366	527 559

Sources: Norwegian Central Securities Depository and Norges Bank

Table 15. Bondholdings in NOK registered with the Norwegian Central Securities Depository, by issuing sector. Nominal value. In millions of NOK

	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Central government and social security administration	141 793	124 640	139 843	144 841	149 395
State lending institutions	220	199	194	173	169
Savings banks	75 289	77 604	81 534	90 704	88 407
Commercial banks	67 557	68 756	70 310	68 764	70 132
Insurance companies	915	435	435	435	317
Mortgage companies	69 988	70 703	66 840	64 573	62 856
Finance companies	500	500	500	500	500
Other financial enterprises	2 300	3 796	3 708	2 667	2 617
Local government administration and municipal enterprises	44 402	43 981	48 756	48 600	48 661
State enterprises	15 621	35 060	33 454	33 024	32 415
Other private enterprises	37 020	36 338	36 476	41 156	38 999
Households	23	81	196	196	196
Rest of the world	11 721	13 332	13 780	14 230	16 397
Unspecified sector	0	0	0	239	0
Total	467 349	475 425	496 026	510 101	511 059

Sources: Norwegian Central Securities Depository and Norges Bank

179

Table 16. Net purchases and net sales (-) in the primary and secondary markets for NOK- denominated bonds registered with the Norwegian Central Securities Depository, by purchasing, selling and issuing sector.¹⁾ Market value. In millions of NOK

2003 Q3	Purchasing/ selling sector																	
	Cent.gov't and social security	Norges Bank	State lending inst.	Sav. banks	Comm. banks	Insur. com- panies	Mort. com- panies	Fin. com- panies	Secur. funds	Other financ. enterpr.	Local gov't & munic. enterpr.	State enterpr.	Other private enterpr.	Wage- earning house- holds	Other house- holds	Rest of the world	Unsp. sector	Total ²⁾
Issuing sector																		
Central government and social security admin.	-2 400	823	0	346	2 128	13 601	280	3	1 126	385	907	-72	-194	-70	71	7 881	11	24 826
State lending inst.	0	0	-25	-2	-2	-1	0	0	0	0	0	0	0	0	0	0	0	-29
Savings banks	918	0	0	822	1 361	5 647	1 809	-5	664	-86	-67	85	810	162	393	-1 097	24	11 441
Commercial banks	439	0	0	-883	2 604	192	-818	-5	107	133	387	24	-303	674	188	-1 184	28	1 582
Insurance companies	0	0	0	-22	-5	-5	-5	0	-33	25	0	0	-47	5	-1	-27	0	-115
Mortgage companies	-44	0	0	-1 131	-1 681	-2 206	238	0	-347	-340	-267	-90	-503	-162	-54	-596	-1	-7 186
Finance companies	0	0	0	-40	0	6	0	0	-5	0	10	0	29	0	2	0	0	0
Other financial enterprises	0	0	0	119	-130	-807	0	0	-3	1	70	0	-213	-28	-10	7	0	-994
Local gov't. admin. and municipal enterprises	317	0	0	274	-263	2 902	-89	3	342	10	2 353	8	-32	17	248	-65	0	6 025
State enterprises	-195	0	0	477	-27	-1 436	-4	0	162	-208	135	1 965	268	38	275	-1 101	0	349
Other private enterprises	-1 008	0	0	235	-1 129	988	-83	0	272	814	379	15	958	45	97	636	1	2 220
Households	0	0	0	0	0	20	0	0	0	26	0	0	31	6	2	0	3	88
Rest of the world	0	0	0	16	105	1 828	-15	0	-212	31	38	1	139	383	11	735	6	3 065
Unspecified sector	0	0	0	0	239	0	0	0	0	0	0	0	0	0	0	0	0	239
Total	-1 973	823	-25	211	3 200	20 727	1 314	-5	2 074	789	3 944	1 937	941	1 070	1 223	5 190	71	41 510

¹⁾ Issues at issue price + purchases at market value – sales at market value – redemptions at redemption value.

²⁾ Total shows net issues in the primary market. Purchases and sales in the secondary market result in redistribution between owner sectors, but add up to 0.

Sources: Norwegian Central Securities Depository and Norges Bank

Table 17. NOK-denominated short-term paper registered with the Norwegian Central Securities Depository by holding sector. Market value. In millions of NOK

	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Central government and social security administration	6 635	3 806	9 037	11 198	9 257
Norges Bank	2 590	2 298	2 177	3 513	10 288
State lending institutions	0	0	0	0	0
Savings banks	3 846	4 424	3 878	3 890	3 924
Commercial banks	16 610	14 890	10 721	9 589	12 333
Insurance companies	45 333	52 320	49 107	50 388	58 291
Mortgage companies	1 682	1 238	3 525	5 014	3 247
Finance companies	61	30	33	41	36
Mutual funds	25 183	26 054	25 834	27 000	28 802
Other financial enterprises	2 196	2 722	3 518	2 758	3 695
Local government administration and municipal enterprises	7 352	6 526	5 860	3 543	2 296
State enterprises	6 078	1 510	12 847	6 696	4 293
Other private enterprises	6 877	7 038	5 456	3 786	3 676
Wage-earning households	232	274	301	258	237
Other households	1 137	1 049	1 387	1 376	1 152
Rest of the world	12 457	10 980	10 814	8 838	9 249
Unspecified sector	7	22	6	5	0
Total	138 277	135 180	144 502	137 893	150 775

Sources: Norwegian Central Securities Depository and Norges Bank

Table 18. Outstanding short-term paper, by issuing sector.¹⁾ Nominal value. In millions of NOK

Issuing sector	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Central government and social security administration	41 500	51 500	62 500	64 500	79 784
Counties	1 026	474	622	502	334
Municipalities	3 140	4 285	4 241	4 814	4 913
State lending institutions	0	0	0	0	0
Commercial banks	18 867	18 434	14 357	8 090	6 090
Savings banks	39 616	40 538	37 629	30 133	32 787
Mortgage companies	3 497	1 787	4 255	6 767	3 568
Finance companies	600	600	0	0	0
Other financial enterprises	0	0	0	0	0
State enterprises	11 242	6 555	3 370	2 960	3 280
Municipal enterprises	9 522	8 526	7 044	6 751	6 486
Private enterprises	11 446	8 412	9 852	7 674	8 400
Rest of the world	1 700	2 500	3 190	4 220	4 090
Total	142 156	143 611	147 060	136 411	149 732

¹⁾ Comprises short-term paper issued in Norway in NOK by domestic sectors and foreigners and paper in foreign currency issued by domestic sectors.

Source: Norges Bank

Credit and liquidity trends

Table 19. Credit indicator and money supply

	Volume figures at end of period NOKbn			Percentage growth				
				Over past 12 months			Over past 3 months, annualised rate ⁴⁾	
	C2 ¹⁾	C3 ²⁾	M2 ³⁾	C2 ¹⁾	C3 ²⁾	M2 ³⁾	C2	M2
December 1994	893.5	1 075.8	501.3	2.3	1.3	5.8	2.8	1.3
December 1995	936.0	1 123.6	530.3	4.9	5.2	6.0	5.4	1.3
December 1996	992.5	1 213.4	564.4	6.0	5.3	6.4	7.7	4.5
December 1997	1 099.1	1 363.7	578.5	10.2	10.2	1.8	10.1	3.0
December 1998	1 192.8	1 521.5	605.3	8.3	12.2	4.4	6.3	5.4
December 1999	1 295.0	1 697.2	670.1	8.4	8.0	10.5	9.7	8.4
December 2000	1 460.9	1 921.1	731.8	12.3	10.6	8.8	11.8	7.4
December 2001	1 608.2	2 078.1	795.4	9.7	7.1	9.3	8.8	10.9
July 2002	1 674.5	2 117.1	837.1	9.3	7.4	9.0	10.3	8.9
August 2002	1 682.9	2 120.5	826.4	9.1	7.8	7.6	8.8	4.0
September 2002	1 690.6	2 122.9	820.7	8.6	7.6	6.3	7.8	3.2
October 2002	1 701.7	2 139.9	844.7	8.6	7.1	8.6	7.5	3.6
November 2002	1 723.9	2 156.7	829.2	8.9	6.9	7.8	8.4	10.1
December 2002	1 724.7	2 151.7	855.3	8.9	6.9	8.3	9.5	9.7
January 2003	1 734.9	2 158.2	866.6	9.1	6.8	6.3	9.4	8.0
February 2003	1 745.3	2 183.1	858.8	8.8	6.8	6.2	8.6	2.5
March 2003	1 756.6	2 197.8	854.3	8.7	6.4	5.5	6.8	0.6
April 2003	1 765.3	2 212.8	844.5	8.2	5.9	5.9	6.8	1.2
May 2003	1 779.7	2 214.2	850.7	8.4	6.3	5.8	6.7	2.4
June 2003	1 795.5	2 249.2	870.3	7.7	5.6	2.8	7.4	3.4
July 2003	1 797.2	2 243.4	870.1	7.5	5.4	3.8	6.7	3.2
August 2003	1 810.9	2 265.8	866.3	7.5	5.4	4.5	6.7	2.5
September 2003	1 817.4		854.3	7.7		4.0	6.8	1.8
October 2003	1 829.6		866.3	7.7		2.5		

¹⁾ C2 = Credit indicator. Credit from domestic sources; actual figures.

²⁾ C3 = Total credit from domestic and foreign sources; actual figures.

³⁾ M2 = Money supply.

⁴⁾ Seasonally adjusted figures

Source: Norges Bank

**Table 20. Domestic credit supply to the general public¹⁾, by source. In millions of NOK.
12-month growth as a percentage**

	31.12.2000		31.12.2001		31.12.2002		31.10.2003	
	Amount	%	Amount	%	Amount	%	Amount	%
Private banks	938 076	13.8	1 030 694	9.6	1 097 144	8.2	1 172 417	7.1
State lending institutions	167 921	3.9	176 494	5.1	185 932	5.3	189 116	2.4
Norges Bank	575	1.6	603	4.9	741	8.0	637	-16.0
Mortgage companies	144 846	20.4	167 698	15.6	182 006	10.9	200 698	17.4
Finance companies	66 809	12.1	79 474	14.6	83 239	9.9	88 046	7.4
Life insurance companies	23 047	-8.0	24 482	0.2	23 124	-5.5	23 600	1.9
Pension funds	4 796	-3.9	3 742	7.1	3 742	0.0	3 742	0.0
Non-life insurance companies	1 649	24.8	934	-43.4	919	-1.6	1 170	31.5
Bond debt ²⁾	82 838	9.7	89 671	8.2	107 399	19.8	114 542	24.2
Notes and short-term paper	24 259	27.0	23 752	-2.1	26 145	10.1	22 002	-31.1
Other sources	6 038	27.4	10 624	76.0	14 295	34.6	13 619	1.3
Total domestic credit (C2) ³⁾	1 460 854	12.3	1 608 168	9.7	1 724 686	8.9	1 829 589	7.7

¹⁾ Comprises local government administration, non-financial enterprises and households.

²⁾ Adjusted for non-residents' holdings of Norwegian private and municipal bonds in Norway.

³⁾ Corresponds to Norges Bank's credit indicator (C2).

Source: Norges Bank

Table 21. Composition of money supply. In millions of NOK

Actual figures at end of period	Notes and coins	Transaction account deposits	M1 ¹⁾	Other deposits ²⁾	CDs	M2 ³⁾	Change in M2 last 12 months, total
December 1994	40 454	172 154	210 108	286 081	5 116	501 305	25 290
December 1995	42 069	178 653	217 727	296 799	15 731	530 257	28 952
December 1996	43 324	208 072	247 937	294 741	21 686	564 364	34 107
December 1997	46 014	227 382	269 597	278 741	30 200	578 538	14 174
December 1998	46 070	237 046	279 188	292 820	33 321	605 329	26 791
December 1999	48 020	300 131	343 496	295 822	30 803	670 121	64 792
December 2000	46 952	328 816	371 340	326 351	34 152	731 843	61 722
December 2001	46 633	344 109	386 147	370 172	39 049	795 368	63 525
July 2002	40 945	365 142	401 902	389 106	46 078	837 086	63 619
August 2002	40 649	349 274	385 825	394 607	45 931	826 363	54 280
September 2002	40 188	350 270	386 502	388 380	45 822	820 704	44 864
October 2002	40 024	358 125	394 210	404 464	45 998	844 672	62 994
November 2002	40 783	349 028	385 824	398 522	44 822	829 168	55 224
December 2002	44 955	360 340	400 622	409 703	44 951	855 276	59 908
January 2003	41 157	360 620	397 901	426 302	42 388	866 591	45 564
February 2003	40 236	359 575	396 153	421 505	41 112	858 770	46 372
March 2003	39 718	363 231	399 373	412 803	42 135	854 311	41 437
April 2003	40 151	354 817	391 088	417 289	36 143	844 520	44 387
May 2003	41 244	360 530	397 834	416 159	36 736	850 729	45 021
June 2003	41 253	386 637	423 927	414 996	31 328	870 251	25 765
July 2003	41 101	380 558	417 464	421 654	30 993	870 111	33 025
August 2003	40 724	374 425	411 389	425 181	29 724	866 294	39 931
September 2003	40 262	375 763	412 350	411 516	30 455	854 321	33 617
October 2003	40 816	384 106	421 195	416 967	28 130	866 292	21 620

¹⁾ Narrow money, M1, comprises the money-holding sector's stock of Norwegian notes and coins plus the sector's transaction account deposits in Norges Bank, commercial banks and savings banks (in NOK and foreign currency).

²⁾ Excluding restricted bank deposits (BSU, IPA, withholding tax accounts, etc).

³⁾ Broad money, M2, comprises the sum of M1 and the money-holding sector's other bank deposits and CDs (in NOK and foreign currency) excluding restricted bank deposits (BSU, IPA, withholding tax accounts, etc).

Source: Norges Bank

Table 22. Household financial balance. Financial investments and holdings, by financial instrument. In billions of NOK

	Financial investments					Holdings				
	Year			Q2		Year			At 30 June	
	2000	2001	2002	2002	2003	2000	2001	2002	2002	2003
Currency and deposits	33.9	35.7	47.2	20.9	29.5	443.3	481.0	528.0	518.2	563.9
Securities other than shares	7.9	6.8	2.0	1.4	0.2	18.3	21.6	23.1	23.3	25.3
Shares and other equity	8.8	4.6	22.0	4.0	1.6	154.7	148.2	160.5	155.1	170.7
Mutual funds shares	11.4	2.7	-1.8	0.0	-0.5	85.7	78.1	61.4	76.8	72.0
Insurance technical reserves	21.8	39.9	31.6	-0.4	-2.6	465.6	490.0	505.8	495.5	528.5
Loans and other assets ¹⁾	18.3	8.6	15.2	-0.3	-3.9	141.2	149.0	164.4	157.1	169.9
Total assets	102.0	98.3	116.1	25.5	24.4	1 308.8	1 368.0	1 443.2	1 426.0	1 530.4
Loans from banks (incl. Norges Bank)	66.5	67.3	72.0	26.5	21.9	592.5	660.4	727.9	693.8	764.6
Loans from state lending institutions	5.7	7.7	7.5	0.0	-0.3	140.9	148.5	156.0	152.4	158.8
Loans from private mortgage and finance companies	6.4	14.1	13.4	2.7	3.7	53.5	67.7	80.1	73.5	88.3
Loans from insurance companies	-2.5	-0.6	0.1	0.0	-0.2	16.7	16.1	16.1	16.2	16.6
Other liabilities ²⁾	2.7	8.1	9.5	9.5	11.6	111.6	118.6	126.8	125.0	134.6
Total liabilities	78.7	96.6	102.5	38.8	36.7	915.2	1011.3	1107.0	1060.8	1 162.9
Net financial investments / assets	23.2	1.6	13.7	-13.3	-12.3	393.6	356.7	336.2	365.2	367.5

¹⁾ Loans, accrued interest, holiday pay claims and tax claims.

²⁾ Other loans, securities other than shares, tax liabilities and accrued interest.

Sources: Norges Bank

Table 23. Money market liquidity. Liquidity effect from 1 January to end period. In millions of NOK

Supply+/withdrawal–	1.1 - 31.12		1.1 - 30.11	
	2001	2002	2002	2003
Central government and other public accounts (excl. paper issued by state lending institutions and government)	-115 094	5 950	-18 562	-37 479
Paper issued by state lending institutions and government	8 514	-13 598	-8 033	-48 889
Purchase of foreign exchange for Government Petroleum Fund	120 300	56 545	53 185	14 620
Other foreign exchange transactions	91	421	421	0
Holdings of banknotes and coins ¹⁾ (estimate)	424	1 741	5 849	3 153
Overnight loans	-126	0	0	0
Fixed-rate loans	-6 011	-15 140	-15 140	24 000
Other central bank financing	-8 135	-18 700	-24 974	18 404
Total reserves	-37	17 219	-7 254	-26 191
Of which:				
Sight deposits with Norges Bank	-37	17 219	-7 254	-26 191
Treasury bills	0	0	0	0
Other reserves (estimate)	0	0	0	0

¹⁾ The figures are mainly based on Norges Bank's accounts. Discrepancies may arise between the bank's own statements and banking statistics due to different accruals.

Source: Norges Bank

Interest rate statistics

Table 24. Nominal interest rates for NOK. Averages. Per cent per annum

	1-month		3-month		12-month		Interest rate on banks' overnight loans in Norges Bank	Interest rate on banks' sight deposits with Norges Bank
	NIDR	NIBOR	NIDR	NIBOR	NIDR	NIBOR		
July 2002	7.3	7.2	7.4	7.3	7.6	7.4	8.9	6.9
August 2002	7.3	7.1	7.4	7.3	7.5	7.3	9.0	7.0
September 2002	7.3	7.1	7.3	7.1	7.2	7.0	9.0	7.0
October 2002	7.3	7.1	7.3	7.1	7.0	6.8	9.0	7.0
November 2002	7.3	7.1	7.3	7.1	6.9	6.7	9.0	7.0
December 2002	7.1	6.9	6.8	6.6	6.4	6.1	8.7	6.7
January 2003	6.4	6.2	6.2	6.0	5.9	5.6	8.3	6.3
February 2003	6.1	5.9	5.9	5.7	5.5	5.3	8.0	6.0
March 2003	5.8	5.6	5.7	5.5	5.4	5.2	7.6	5.6
April 2003	5.6	5.4	5.5	5.3	5.2	5.0	7.5	5.5
May 2003	5.3	5.2	5.1	4.9	4.7	4.5	7.0	5.0
June 2003	4.7	4.5	4.3	4.0	3.8	3.6	6.8	4.8
July 2003	4.1	4.0	3.6	3.5	3.4	3.2	6.0	4.0
August 2003	3.5	3.3	3.3	3.1	3.4	3.2	5.4	3.4
September 2003	3.0	2.9	3.0	2.8	3.2	3.0	4.8	2.8
October 2003	2.9	2.8	3.0	2.9	3.2	3.1	4.5	2.5
November 2003	2.9	2.8	3.1	2.9	3.2	3.1	4.5	2.5

Note: NIDR = Norwegian Interbank Deposit Rate, a pure krone interest rate

NIBOR = Norwegian Interbank Offered Rate, constructed on the basis of currency swaps

Source: Norges Bank

Table 25. Short-term interest rates¹⁾ for key currencies in the Euro-market. Per cent per annum

	DKK	GBP	JPY	SEK	USD	Interest rate differential	
						EUR	NOK/EUR
July 2002	3.6	4.0	0.0	4.4	1.8	3.4	3.8
August 2002	3.5	3.9	0.0	4.3	1.8	3.3	3.8
September 2002	3.4	3.9	0.0	4.3	1.8	3.3	3.8
October 2002	3.4	3.9	0.0	4.3	1.7	3.2	3.8
November 2002	3.2	3.9	0.0	4.1	1.4	3.1	3.9
December 2002	3.0	4.0	0.0	3.8	1.4	2.9	3.5
January 2003	2.9	3.9	0.0	3.8	1.3	2.8	3.1
February 2003	2.8	3.7	0.0	3.7	1.3	2.7	2.9
March 2003	2.6	3.6	0.0	3.5	1.3	2.5	2.9
April 2003	2.6	3.6	0.0	3.5	1.3	2.5	2.6
May 2003	2.5	3.6	0.0	3.3	1.2	2.4	2.4
June 2003	2.2	3.6	0.0	2.9	1.1	2.1	1.8
July 2003	2.1	3.4	0.0	2.8	1.1	2.1	1.2
August 2003	2.1	3.5	-0.1	2.8	1.1	2.1	0.9
September 2003	2.1	3.6	0.0	2.8	1.1	2.1	0.6
October 2003	2.1	3.8	0.0	2.8	1.1	2.1	0.6
November 2003	2.2	3.9	-0.1	2.8	1.1	2.1	0.6

¹⁾ Three-month rates, monthly average of daily quotations.

Sources: OECD and Norges Bank

Table 26. Yields on Norwegian bonds¹⁾. Per cent per annum

	3-year		5-year		10-year	
	Gov't	Private	Gov't	Private	Gov't	Private
July 2002	6.8	7.2	6.7	7.1	6.6	7.1
August 2002	6.5	7.0	6.4	6.9	6.3	6.9
September 2002	6.2	6.7	6.1	6.6	6.1	6.6
October 2002	6.1	6.7	6.1	6.6	6.2	6.7
November 2002	6.0	6.6	6.0	6.5	6.1	6.6
December 2002	5.6	6.3	5.7	6.3	5.9	6.4
January 2003	5.3	5.9	5.4	6.0	5.7	6.1
February 2003	4.9	5.4	5.0	5.5	5.3	5.6
March 2003	5.0	5.3	5.1	6.3	5.2	5.7
April 2003	4.9	5.3	5.0	6.3	5.3	5.8
May 2003	4.4	5.2	4.6	5.7	5.0	5.6
June 2003	3.7	4.9	4.0	4.9	4.5	4.9
July 2003	3.8	4.8	4.3	5.3	4.9	5.2
August 2003	3.9	4.8	4.4	5.4	5.0	5.2
September 2003	3.7	4.7	4.3	5.2	4.9	5.1
October 2003	3.9	4.7	4.4	5.4	4.9	5.7
November 2003	3.9	4.8	4.4	5.2	5.0	5.2

¹⁾ Whole-year interest rate paid in arrears. Monthly average. As of 1 January 1993 based on interest rate on representative bonds weighted by residual maturity.

Source: Norges Bank

Table 27. Yields on government bonds¹⁾ in key currencies. Per cent per annum

	DEM	DKK	FIM	FFR	GBP	JPY	USD	Interest rate differential
								NOK/DEM ²⁾
July 2002	4.9	5.2	5.2	5.0	5.0	1.3	4.6	1.6
August 2002	4.7	4.9	4.9	4.7	4.7	1.3	4.2	1.7
September 2002	4.5	4.8	4.7	4.5	4.5	1.2	3.9	1.6
October 2002	4.6	4.9	4.7	4.6	4.6	1.1	3.9	1.6
November 2002	4.6	4.9	4.7	4.6	4.6	1.0	4.1	1.6
December 2002	4.4	4.7	4.5	4.4	4.5	1.0	4.1	1.5
January 2003	4.2	4.5	4.3	4.2	4.4	0.8	4.0	1.4
February 2003	4.0	4.3	4.1	4.0	4.2	0.8	3.9	1.3
March 2003	4.1	4.3	4.2	4.1	4.3	0.7	3.8	1.2
April 2003	4.2	4.5	4.3	4.2	4.4	0.7	4.0	1.1
May 2003	3.9	4.1	3.9	3.9	4.1	0.6	3.5	1.1
June 2003	3.7	3.9	3.8	3.7	4.0	0.6	3.3	0.8
July 2003	4.1	4.2	4.1	4.0	4.3	1.0	4.0	0.8
August 2003	4.2	4.4	4.2	4.2	4.5	1.1	4.4	0.8
September 2003	4.3	4.5	4.3	4.2	4.6	1.4	4.3	0.7
October 2003	4.3	4.5	4.3	4.3	4.9	1.4	4.2	0.6
November 2003	4.5	4.6	4.4	4.4	5.0	1.3	4.3	0.5

¹⁾ Government bonds with 10 years to maturity. Monthly average of daily quotations.

²⁾ Differential between yields on Norwegian and German government bonds with 10 years to maturity.

Sources: OECD and Norges Bank

Table 28. Commercial and savings banks. Average interest rates and commissions on utilised NOK loans to the general public at end of quarter. Per cent per annum.

	Loans, excl. non-accrual loans							
	Total loans	Local government	Non-financial public enterprises	Non-financial private enterprises	Households	Credit lines Overdrafts and building loans	Repayment loans Housing loans	Other loans
2002 Q3								
Commercial banks	8.59	7.79	8.03	8.82	8.47	10.53	8.32	8.38
Savings banks	8.98	7.60	8.12	9.33	8.89	11.34	8.60	9.22
All banks	8.79	7.70	8.05	9.02	8.71	10.87	8.48	8.75
2002 Q4								
Commercial banks	8.49	7.60	7.73	8.57	8.47	10.39	8.34	8.19
Savings banks	8.91	7.49	7.85	9.16	8.85	11.16	8.58	9.11
All banks	8.71	7.55	7.76	8.80	8.69	10.73	8.48	8.59
2003 Q1								
Commercial banks	7.52	6.48	6.67	7.66	7.47	9.45	7.32	7.30
Savings banks	7.94	6.48	6.98	8.32	7.84	10.25	7.56	8.26
All banks	7.74	6.48	6.75	7.92	7.68	9.81	7.46	7.71
2003 Q2								
Commercial banks	6.60	6.43	5.39	6.63	6.61	8.33	6.43	6.40
Savings banks	7.09	5.40	6.88	7.54	6.97	9.33	6.69	7.50
All banks	6.86	6.01	5.78	6.99	6.81	8.79	6.58	6.87
2003 Q3								
Commercial banks	4.91	4.29	4.09	5.21	4.76	6.83	4.52	5.05
Savings banks	5.44	4.02	4.24	6.14	5.27	8.11	4.96	6.06
All banks	5.19	4.16	4.14	5.58	5.05	7.42	4.77	5.49

Source: Norges Bank

Table 29. Commercial and savings banks. Average interest rates on deposits in NOK from the general public at end of quarter. Per cent per annum

	Total deposits	Local government	Non-financial public enterprises	Non-financial private enterprises	Households	Deposits on transaction accounts	Other deposits
2002 Q3							
Commercial banks	5.77	6.37	6.57	6.02	5.54	5.20	6.40
Savings banks	5.83	6.91	6.78	6.06	5.66	4.57	6.54
All banks	5.80	6.70	6.64	6.03	5.60	4.95	6.48
2002 Q4							
Commercial banks	5.74	6.22	6.23	5.85	5.62	5.18	6.36
Savings banks	5.85	6.60	6.53	5.89	5.75	4.55	6.53
All banks	5.79	6.46	6.36	5.86	5.69	4.92	6.46
2003 Q1							
Commercial banks	4.89	5.17	5.22	4.82	4.90	4.30	5.53
Savings banks	4.89	5.63	5.57	4.97	4.78	3.73	5.52
All banks	4.89	5.46	5.35	4.88	4.83	4.06	5.52
2003 Q2							
Commercial banks	3.92	4.24	3.89	3.70	4.03	3.18	4.78
Savings banks	3.84	4.51	4.28	3.92	3.76	2.64	4.56
All banks	3.88	4.42	4.03	3.78	3.87	2.95	4.65
2003 Q3							
Commercial banks	2.29	2.82	2.55	2.12	2.34	1.88	2.75
Savings banks	2.27	2.97	2.76	2.36	2.19	1.58	2.66
All banks	2.28	2.91	2.60	2.21	2.25	1.76	2.70

Source: Norges Bank

Table 30. Life insurance companies. Average interest rates by type of loan at end of quarter.
Per cent per annum

	Housing loans	Other loans	Total loans
30.09.2002	8.0	7.1	7.5
31.12.2002	7.8	7.0	7.3
31.03.2003	6.9	6.4	6.7
30.06.2003	5.7	6.0	5.9
30.09.2003	4.3	5.5	4.9

Source: Norges Bank

Table 31. Mortgage companies. Average interest rates, incl. commissions on loans to private sector at end of quarter. Per cent per annum

	Housing loans	Loans to private enterprises	Total loans
30.09.2002	7.8	7.8	7.4
31.12.2002	7.8	7.7	7.3
31.03.2003	7.2	7.2	6.7
30.06.2003	6.6	6.8	6.3
30.09.2003	6.0	6.1	5.6

Source: Norges Bank

Profit/loss and capital adequacy data

Table 32. Profit/loss and capital adequacy: commercial banks¹⁾.
Percentage of average total assets

	2001	2002	Q3	
			2002	2003
Interest income	7.6	7.3	7.2	5.8
Interest expenses	5.8	5.5	5.4	4.2
Net interest income	1.8	1.9	1.8	1.6
Total other operating income	1.1	0.8	0.7	0.8
Other operating expenses	1.9	1.8	1.7	1.6
Operating profit before losses	1.0	0.9	0.9	0.9
Recorded losses on loans and guarantees	0.3	0.5	0.2	0.5
Ordinary operating profit (before taxes)	0.7	0.4	0.6	0.4
Capital adequacy ratio ²⁾	11.7	11.1	11.4	11.4
Of which:				
Core capital	8.7	8.4	8.9	8.3

¹⁾ Parent banks (excluding branches abroad) and foreign-owned branches.

²⁾ As a percentage of the basis of measurement for capital adequacy.

Source: Norges Bank

Table 33. Profit/loss and capital adequacy: savings banks.
Percentage of average total assets

	2001	2002	Q3	
			2002	2003
Interest income	8.1	7.8	7.7	6.6
Interest expenses	5.6	5.3	5.2	4.2
Net interest income	2.5	2.5	2.5	2.4
Total other operating income	0.7	0.5	0.4	0.7
Other operating expenses	1.8	1.8	1.7	1.7
Operating profit before losses	1.4	1.2	1.1	1.4
Recorded losses on loans and guarantees	0.3	0.4	0.3	0.4
Ordinary operating profit (before taxes)	1.2	0.8	0.9	1.1
Capital adequacy ratio ¹⁾	13.8	13.5	12.9	12.9
Of which:				
Core capital	11.0	11.1	10.4	10.6

¹⁾ As a percentage of the basis of measurement for capital adequacy.

Source: Norges Bank

Table 34. Profit/loss and capital adequacy: finance companies¹⁾.
Percentage of average total assets

	2001	2002	Q3	
			2002	2003
Interest income	10.3	9.7	9.5	8.7
Interest expenses	6.0	5.6	5.5	4.1
Net interest income	4.2	4.1	4.0	4.6
Total other operating income	2.8	2.5	2.5	2.3
Other operating expenses	4.4	4.1	4.0	4.0
Operating profit before losses	2.6	2.5	2.4	2.9
Recorded losses on loans and guarantees	0.5	0.6	0.5	1.0
Ordinary operating profit (before taxes)	2.1	1.9	1.9	1.9
Capital adequacy ratio ²⁾	11.3	10.9	10.5	9.8
Of which:				
Core capital	9.8	9.3	9.0	8.3

¹⁾ All Norwegian parent companies (excl. OBOS) and foreign-owned branches.

²⁾ As a percentage of the basis of measurement for capital adequacy.

Source: Norges Bank

Table 35. Profit/loss and capital adequacy: mortgage companies¹⁾.
Percentage of average total assets

	2001	2002	Q3	
			2002	2003
Interest income	6.5	5.3	5.3	4.6
Interest expenses	5.7	4.7	4.6	3.9
Net interest income	0.8	0.7	0.7	0.7
Total other operating income	-0.0	-0.0	-0.0	0.0
Other operating expenses	0.2	0.2	0.1	0.1
Operating profit before losses	0.6	0.5	0.5	0.6
Recorded losses on loans and guarantees	0.0	0.0	0.0	0.0
Ordinary operating profit (before taxes)	0.6	0.5	0.5	0.5
Capital adequacy ²⁾	14.7	12.7	13.2	12.5
Of which:				
Core capital	11.2	10.4	10.7	10.0

¹⁾ All Norwegian parent companies.

²⁾ As a percentage of the basis of measurement for capital adequacy.

Source: Norges Bank

Exchange rates

Table 36. The international value of the krone and exchange rates against selected currencies. Monthly average of representative market rates

	Trade-weighted krone exchange rate ¹⁾	1 EUR	100 DKK	1 GBP	100 JPY	100 SEK	1 USD
July 2002	94.60	7.4050	99.66	11.60	6.32	79.90	7.46
August 2002	95.09	7.4284	100.02	11.67	6.39	80.32	7.60
September 2002	94.38	7.3619	99.12	11.67	6.22	80.30	7.51
October 2002	94.06	7.3405	98.80	11.65	6.04	80.62	7.48
November 2002	93.58	7.3190	98.53	11.49	6.02	80.59	7.31
December 2002	92.91	7.2953	98.24	11.36	5.87	80.20	7.17
January 2003	92.52	7.3328	98.66	11.16	5.81	79.93	6.90
February 2003	94.75	7.5439	101.51	11.26	5.87	82.49	7.00
March 2003	98.02	7.8450	105.62	11.49	6.12	85.03	7.26
April 2003	97.78	7.8316	105.47	11.37	6.02	85.56	7.22
May 2003	97.10	7.8711	106.01	11.04	5.80	85.97	6.80
June 2003	100.77	8.1622	109.93	11.63	5.91	89.51	7.00
July 2003	102.57	8.2893	111.52	11.84	6.14	90.24	7.29
August 2003	102.40	8.2558	111.08	11.81	6.24	89.37	7.41
September 2003	102.15	8.1952	110.34	11.76	6.36	90.37	7.31
October 2003	102.26	8.2278	110.74	11.80	6.42	91.32	7.04
November 2003	101.95	8.1969	110.22	11.83	6.41	91.14	7.01

¹⁾ The nominal effective krone exchange rate is calculated on the basis of the NOK exchange rate against the currencies of Norway's 25 main trading partners, calculated as a chained index and trade-weighted using the OECD's weights. The weights, which are updated annually, are calculated on the basis of each country's competitive position in relation to Norwegian manufacturing. The index is set at 100 in 1990. A rising index value denotes a depreciating krone.

Further information can be found on Norges Bank's website (www.norges-bank.no).

Source: Norges Bank

Table 37. Exchange cross rates. Monthly average of representative exchange rates

	GBP/USD	EUR/GBP	USD/EUR	EUR/JPY	JPY/USD
July 2002	1.5535	0.6386	0.992	117.1021	118.04
August 2002	1.5366	0.6363	0.978	116.3043	118.95
September 2002	1.5553	0.6306	0.981	118.3539	120.68
October 2002	1.5574	0.6299	0.981	121.5679	123.91
November 2002	1.5717	0.6371	1.001	121.6472	121.49
December 2002	1.5851	0.6421	1.018	124.1810	122.01
January 2003	1.6164	0.6571	1.062	126.1147	118.74
February 2003	1.6086	0.6697	1.077	128.5750	119.35
March 2003	1.5830	0.6825	1.080	128.1511	118.61
April 2003	1.5736	0.6890	1.084	130.0741	119.97
May 2003	1.6227	0.7130	1.157	135.6071	117.20
June 2003	1.6612	0.7017	1.166	138.0045	118.38
July 2003	1.6235	0.7004	1.137	134.9582	118.69
August 2003	1.5926	0.6991	1.113	132.2774	118.80
September 2003	1.6093	0.6969	1.122	128.9269	114.95
October 2003	1.6760	0.6976	1.169	128.1083	109.57
November 2003	1.6888	0.6927	1.170	127.8064	109.25

Source: Norges Bank

Balance of payments

Table 38. Balance of payments. In millions of NOK

	2001	2002	January - September	
			2002	2003
Goods balance	234 046	190 755	143 888	141 661
Service balance	28 284	24 654	17 287	16 654
Net interest and transfers	-23 811	-14 784	-7 750	-7 977
A. Current account balance	238 519	200 625	153 425	150 338
Of which:				
Petroleum activities ¹⁾	304 721	261 947	192 521	206 271
Shipping ¹⁾	46 707	38 682	28 400	28 929
Other sectors	-112 909	-100 004	-67 496	-84 862
B. Net capital transfers	-815	-435	142	-81
C. Capital outflow excl. Norges Bank	-17 955	27 959	16 735	10 907
Distributed among:				
Central government sector	14 832	4 439	-730	307
Local government sector	237	719	723	113
Commercial and savings banks	-36 137	-74 713	-79 974	-27 671
Insurance	1 493	14 559	35 308	6 801
Other financial institutions	-24 068	-41 656	-13 131	-28 419
Shipping	-232	2 504	3 780	-2 164
Petroleum activities	-46 710	-39 802	-30 911	1 158
Other private and state enterprises	36 639	60 647	29 817	20 473
Unallocated (incl. errors and omissions)	35 991	101 262	71 853	40 309
D. Norges Bank's net capital outflow (A + B - C)	255 659	172 231	136 832	139 350
E. Valuation changes in Norges Bank's net foreign assets	-40 908	-176 035	-166 518	76 604
Change in Norges Bank's net foreign assets (D + E)	214 751	-3 804	-29 686	215 954

¹⁾ Specified by Norges Bank on the basis of items from the balance of payments.

Sources: Statistics Norway and Norges Bank

Table 39. Norway's foreign assets and debt. In billions of NOK

	31.12.2001			31.12.2002			30.09.2003		
	Assets	Debt	Net	Assets	Debt	Net	Assets	Debt	Net
Central government admin.	28.3	64.2	-35.9	29.6	68.0	-38.4	30.7	68.3	-37.6
Norges Bank incl. Petroleum Fund	959.5	176.8	782.7	1060.1	273.3	786.8	1341.8	339.2	1002.6
State lending institutions	7.4	0.0	7.4	7.5	0.0	7.5	7.5	0.0	7.5
Commercial and savings banks	137.7	360.1	-222.4	126.8	375.1	-248.3	155.6	443.0	-287.4
Mortgage companies	45.6	127.1	-81.5	56.8	135.5	-78.7	54.1	169.1	-115.0
Finance companies	3.7	30.1	-26.4	2.9	25.7	-22.8	2.9	25.9	-23.0
Insurance companies	204.9	19.1	185.8	190.7	20.2	170.5	193.9	17.8	176.2
Local government	0.0	2.2	-2.2	0.2	1.6	-1.4	0.2	1.5	-1.3
Municipal enterprises	0.3	8.9	-8.6	0.2	8.5	-8.3	0.3	9.5	-9.2
State enterprises	111.8	92.4	19.4	129.2	83.4	45.8	149.5	87.3	62.1
Other Norwegian sectors	456.4	441.4	15.0	435.7	416.8	18.9	447.5	433.4	14.1
Undistributed and errors and omissions	0.0	0.0	0.0	101.6	0.0	101.6	141.9	0.0	141.9
All sectors	1 955.6	1 322.3	633.3	2 141.3	1 408.1	733.2	2 525.9	1 594.9	931.0

Norges Bank calculates the holdings figures on the basis of Statistics Norway's annual census of foreign assets and liabilities and sectoral statistics for financial industries. These are combined with the figures on changes in the form of transactions and valuation changes from the balance of payments and sectoral statistics for insurance and mortgage companies.

Sources: Statistics Norway and Norges Bank

International capital markets

Table 40. Changes in banks' international assets.¹⁾ In billions of USD

	2000	2001	2002	Q1		Outstanding
				2002	2003	At 31.03.03
Total	1 221.5	859.4	740.8	57.3	341.4	13 991.6
Of which vis-à-vis:						
Non-banks	288.8	442.1	280.9	47.8	233.3	4 882.6
Banks (and undistributed)	932.7	417.3	459.9	9.5	108.2	9 108.9

1) International assets (external positions) comprise

- cross-border claims in all currencies
- foreign currency loans to residents
- equivalent assets, excluding lending

Source: Bank for International Settlements

Table 41. Banks' international claims by currency. Percentage of total international assets

	December			Q1	
	2000	2001	2002	2002	2003
US dollar (USD)	43.3	45.2	41.8	45.7	41.3
Deutsche mark (DEM)	..	..	..	..	..
Swiss franc (CHF)	2.2	2.1	2.0	2.2	2.0
Japanese yen (JPY)	8.2	6.1	5.5	5.4	5.2
Pound sterling (GBP)	4.4	4.4	4.2	4.4	4.0
French franc (FRF)	..	..	..	..	..
Italian lira (ITL)	..	..	..	..	..
ECU/EURO ¹⁾	27.8	28.5	33.3	28.7	34.8
Undistributed ²⁾	14.2	13.7	13.2	13.6	12.7
Total in billions of USD	10 778.6	11 631.5	13 377.2	11 562.9	13 991.6

¹⁾ From January 1999.

²⁾ Including other currencies not shown in the table, and assets in banks in countries other than the home countries of the seven currencies specified.

Source: Bank for International Settlements

Foreign currency trading

Table 42. Foreign exchange banks. Foreign exchange purchased/sold forward with settlement in NOK.¹⁾ In billions of NOK at end of month

	Purchased net from:					Purchased gross from:		Sold gross to:	
	Central gov't ²⁾	Other financial inst. ³⁾	Non- financial sector	Foreign sector	Total	Non- financial sector	Foreign sector	Non- financial sector	Foreign sector
October 2002	0.0	20.7	46.0	28.2	94.9	99.8	606.6	53.8	578.4
November 2002	-0.1	22.3	47.9	32.0	102.1	99.6	592.5	51.7	560.5
December 2002	0.0	22.1	48.3	65.0	135.4	102.2	645.6	53.9	580.6
January 2003	0.0	23.9	22.2	55.0	101.1	110.0	632.2	87.8	577.2
February 2003	0.0	32.7	46.7	64.9	144.3	121.7	630.8	75.0	565.9
March 2003	0.1	49.4	42.4	32.2	124.1	114.4	595.9	72.0	563.7
April 2003	0.0	36.3	44.1	55.5	135.9	110.7	620.7	66.6	565.2
May 2003	0.1	23.5	36.1	86.4	146.1	94.0	625.9	57.9	539.5
June 2003	0.1	14.1	30.1	91.4	135.7	60.7	556.8	30.6	465.4
July 2003	0.1	16.3	30.6	117.4	164.4	60.1	573.6	29.5	456.2
August 2003	0.1	14.5	35.9	118.2	168.7	62.1	591.8	26.2	473.6
September 2003	0.1	18.6	32.7	131.1	182.5	64.2	631.2	31.5	500.1
October 2003	0.1	-10.8	31.6	17.4	38.3	63.7	570.4	32.1	553.0

¹⁾ Excl. exchange rate adjustments.

²⁾ Central government administration, social security administration and Norges Bank.

³⁾ Incl. possible discrepancies between forward assets and forward liabilities within the category of foreign exchange banks.

Source: Statements from commercial and savings banks (registered foreign exchange banks) to Norges Bank

Table 43. Foreign exchange banks. Overall foreign currency position. In millions of NOK

	30.09.2002	31.12.2002	31.03.2003	30.06.2003	30.09.2003
Foreign assets, spot	194 813	192 705	215 543	241 240	223 876
Foreign liabilities, spot	351 361	326 594	365 732	388 607	392 606
1. Spot balance, net	-156 548	-133 889	-150 189	-147 367	-168 730
2. Forward balance, net	122 975	136 072	108 394	97 941	189 974

Source: Norges Bank

Table 44. Norges Banks' foreign currency transactions with various sectors. In billions of NOK

	2002	Week in 2003											
	1-52	37	38	39	40	41	42	43	44	45	46	47	1-47
1. Norwegian customers	48	-0.7	14.6	11.2	-37.6	2.5	4.5	-7.9	7.7	24.0	-11.1	11.7	63.5
Net spot ¹⁾	10	-6.3	13.6	11.0	-29.3	-5.4	5.7	-7.3	-0.7	21.2	-11.4	14.5	35.5
Net forward ¹⁾	38	5.6	1.1	0.2	-8.4	7.9	-1.2	-0.6	8.4	2.8	0.3	-2.8	28.0
-Change in purchase contracts ²⁾	-12	-2.7	-1.9	4.3	11.6	-10.1	1.6	-0.3	-7.4	-9.5	-1.6	-4.3	-93.4
- Change in sales contracts ³⁾	26	2.9	-0.8	4.5	3.3	-2.2	0.4	-0.9	1.0	-6.7	-1.4	-7.1	-65.1
2. Foreign sector	-81	-2.4	-10.6	-13.5	40.7	1.1	-9.4	14.0	-10.6	-24.4	13.0	-13.1	-55.7
Net spot ¹⁾	-18	3.9	0.6	-0.2	0.9	-1.0	-1.0	-0.2	-4.6	1.1	-7.1	-6.2	-7.6
Net forward ¹⁾	-63	-6.3	-11.2	-13.3	39.8	2.1	-8.4	14.3	-6.0	-25.5	20.0	-6.9	-48.1
-Change in purchase contracts ²⁾	-126	8.8	-4.9	-3.5	-3.5	-4.2	10.9	-13.7	-4.3	-10.0	-8.6	-50.6	-111.3
- Change in sales contracts ³⁾	-189	2.5	-16.0	-16.8	36.2	-2.1	2.5	0.6	-10.3	-35.5	11.5	-57.5	-159.5
3. Norges Bank	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5
Net spot ¹⁾	53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5
Net forward ¹⁾	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-Change in purchase contracts ²⁾	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Change in sales contracts ³⁾	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. Other													
Increase in Norwegian customers' net currency claims on banks	-11	-1.7	-3.1	-0.4	-1.3	1.1	3.3	-3.5	2.4	-0.9	-4.2	0.9	-23.7
Increase in banks' total positions	4	1.3	-0.2	0.6	1.5	-1.0	-0.4	-0.9	-1.0	-1.3	2.2	-0.5	-9.9
Specification of foreign sector spot:													
Net NOK claims on banks ⁴⁾	-13	3.8	-0.5	0.9	1.7	-1.0	-0.3	1.3	-4.5	2.3	-5.9	-7.3	8.9
VPS-registered shares ⁵⁾	-2	0.3	0.1	-0.3	0.3	-0.4	-0.1	-0.6	-0.1	-0.5	-0.5	0.3	-22.6
VPS-registered bonds ⁵⁾	-5	0.1	-0.6	0.8	-0.9	0.3	-0.6	-0.8	0.3	0.5	-0.8	-0.2	-3.0
VPS-registered notes and certificates ⁵⁾	1	-0.2	1.6	-1.5	-0.3	0.0	-0.1	-0.2	-0.2	-1.1	0.2	1.0	2.1
Foreign sector purchases of VPS-reg. securities, total	-	24.5	25.7	36.8	35.2	31.7	30.0	35.9	35.3	50.1	35.5	32.6	1 772.5
Foreign sector sales of VPS-registered securities, total	-	24.7	26.8	35.8	34.3	31.7	29.3	34.3	35.3	48.9	34.4	33.7	1 749.0

¹⁾ Positive figures denote that the sectors in question purchase foreign currency from Norwegian banks.

²⁾ Positive figures denote that the sectors in question increase their contracts for purchase of NOK, and negative figures denote a decline in purchase contracts.

³⁾ Positive figures denote that the sectors in question increase their sales contracts in NOK, and negative figures denote a decline in sales contracts.

⁴⁾ Positive figures denote a reduction of NOK deposits from the foreign sector in Norwegian banks.

⁵⁾ Positive figures denote net sales of VPS-registered securities by the foreign sector.

Economic Bulletin 2003 (Volume LXXIV)

CONTENTS

(issue number in parentheses)

Article index (alphabetical, by author)

Bakke, Bjørn, and Karsten Gerdrup: Banks' counterparty risk – results of a survey conducted by Norges Bank and the Banking, Insurance and Securities Commission	67 (2)
Bernhardsen, Eivind and Kai Larsen: Banks' pricing of risk associated with corporate lending	24 (1)
Bjerkeland, Kristin and Vigdis Husevåg: Securities settlement in Norway	144 (4)
Bø, Olav, Jon Ivar Røstadsand and Espen Tørum: How reliable are today's financial macroindicators.	109 (3)
Gerdrup, Karsten and Bjørn Bakke: Banks' counterparty risk – results of a survey conducted by Norges Bank and the Banking, Insurance and Securities Commission	67 (2)
Hein, Jesper: Liquidity and supply in the Norwegian government bond market	157 (4)
Husevåg, Vigdis and Kristin Bjerkeland: Securities settlement in Norway	144 (4)
Larsen, Kai and Eivind Bernhardsen: Banks' pricing of risk associated with corporate lending	24 (1)
Lohrmann, Heidi: Evaluation of Norges Bank's projections for 2001 and 2002	13 (1)
Natvig, Peder and Leif Veggum: Destruction of banknotes outside the central bank	21 (1)
Røstadsand, Jon Ivar, Olav Bø and Espen Tørum: How reliable are today's financial macroindicators?	109 (3)
Svein Gjedrem: Economic Perspectives: Address by the Governor in connection with the meeting of the Supervisory Council of Norges Bank on 20 February 2003	4 (1)
Svein Gjedrem: Financial stability, asset prices and monetary policy	58 (2)
Syversten, Bjørne Dyre H.: Measuring market risk in Norwegian financial institutions	103 (3)
Tørum, Espen, Olav Bø and Jon Ivar Røstadsand: How reliable are today's financial macroindicators?	109 (3)
Veggum, Leif and Peder Natvig: Destruction of banknotes outside the central bank	21 (1)

Tables, announcements, etc.

Statistical annex	35 (1), 78 (2), 119 (3), 171 (4)
-------------------	----------------------------------

Articles index (alphabetical, by title)

Banks' counterparty risk – results of a survey conducted by Norges Bank and the Banking, Insurance and Securities Commission. Gerdrup, Karsten and Bjørn Bakke	67 (2)
Banks' pricing of risk associated with corporate lending. Bernhardsen, Eivind and Kai Larsen	24 (1)
Destruction of banknotes outside the central bank. Veggum, Leif and Peder Natvig	21 (1)
Economic Perspectives: Address by Governor Svein Gjedrem in connection with the meeting of the Supervisory Council of Norges Bank on 20 February 2003	4 (1)
Evaluation of Norges Bank's projections for 2001 and 2002. Lohrmann, Heidi	13 (1)
Financial stability, asset prices and monetary policy - Address by Governor Svein Gjedrem at the Centre for Monetary Economics, Norwegian School of Management on 3 June 2003	58 (2)
How reliable are today's financial macroindicators?. Bø, Olav, Jon Ivar Røstadsand and Espen Tørum	109 (3)
Liquidity and supply in the Norwegian government bond market. Hein, Jesper	157 (4)
Measuring market risk in Norwegian financial institutions. Syversten, Bjørne Dyre H.	103 (3)
Norges Bank's submission of 27 August 2003 to Kredittilsynet (the Financial Supervisory Authority of Norway)	166 (4)
Securities settlement in Norway. Husevåg, Vigdis and Kristin Bjerkeland	144 (4)

