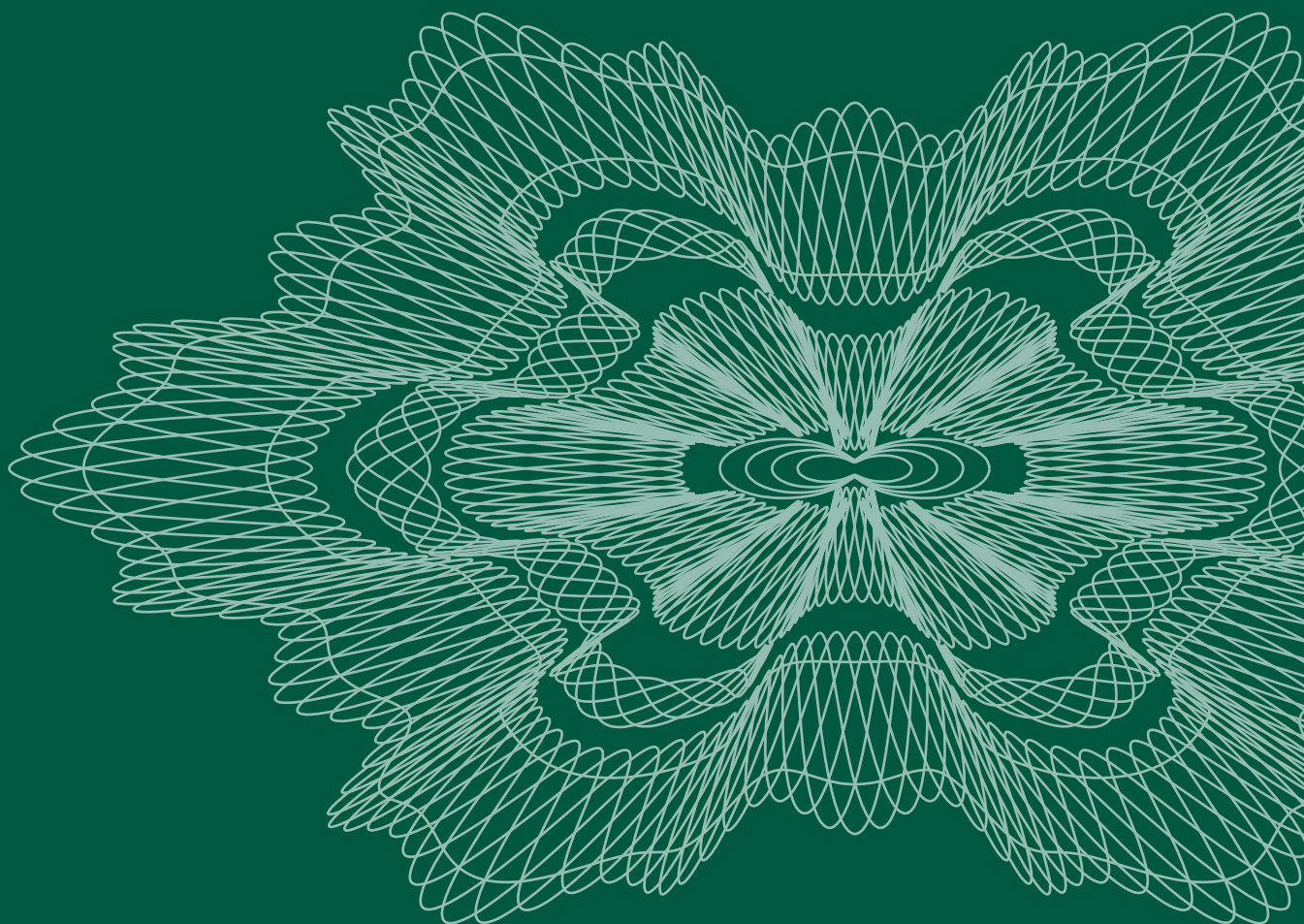




Economic Bulletin

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Is the financial system stable?

Central Bank Governor Svein Gjedrem. Address at the 2001 Annual Meeting of the Norwegian Savings Banks Association
Haugesund, 18 October 2001

Introduction

The role of the financial industry in the economy has become increasingly important over the last decades. Deregulation and technological advances have increased the industry's opportunities and scope to channel savings to various projects. Strong competition has induced the industry to make use of these new opportunities. The range of saving and financial instruments is becoming ever wider. Systems and financial instruments for managing and controlling risk are becoming more advanced. As a result, it has become easier for households and enterprises to decouple consumption and investment from current income. In the second half of the 1990s, in particular, international capital markets have become more integrated.¹⁾ It has been easier for growing economies to finance investments through a balance-of-payment deficit and foreign capital. At the same time, countries with high savings can increasingly diversify their investments.

Globalisation places increasing demands on the business sector's ability to adapt. New products and technology squeeze out old solutions. This creative destruction, as Schumpeter called it, may foster a more efficient distribution of resources and higher economic growth in the long run. A rapidly changing environment places considerable demands on the financial industry. The financial prospects for a project must be assessed in relation to risk. A diversified portfolio of loans and investments limits expected losses. Losses on one project may be more than offset by gains on another.

Economic growth is cyclical. During an upswing most projects fare better than expected. A deep recession can lead to heavy losses, insolvency and financial crisis. Banks may address this risk by building up sufficient buffers during upturns. Often, this is not done in practice. Instead, financial enterprises tend to place special emphasis on increasing market shares while times are good and allow their capital ratios to fall.

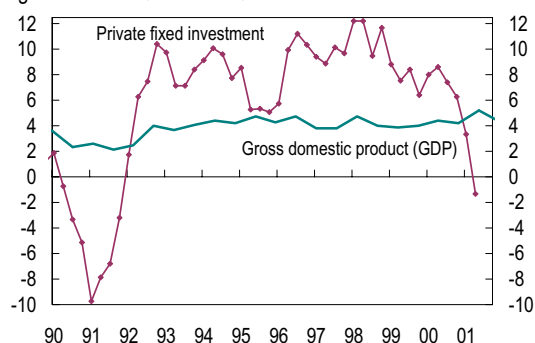
It is during an upturn that the basis for a downturn is laid. Financial crises are often characterised by a first phase when optimism predominates, risk assessments weaken and the willingness to borrow and asset prices increase. When negative news starts to spread, investments fall short of expectations and the mood shifts, asset prices fall and debt-servicing problems accumulate.

A financial bubble can first be identified with certainty after it has burst. There are a growing number of examples of this. After the Asian crisis, which started in

1997, and gradually had global spillover effects, there have been national financial crises in Turkey and Argentina.

During much of the 1990s, the US experienced extensive restructuring and high economic growth. The gap between the US and the rest of the world widened. Investment expanded sharply, particularly in the technology sector. This was made possible by dynamic credit and capital markets. Developments led to a broad expansion in other sectors of the economy and other countries. Restructuring and new technology may also have increased the long-term growth potential of the US economy. The marked turnaround that has now come shows that developments went too far. The technology stock bubble burst. The focus has now shifted towards heavily indebted households and businesses. Banks are expecting higher losses.

Chart 1 Growth in the US in the 1990s. Year-on-year real growth. 1990 Q1 – 2001 Q2



Sources: EcoWin and Norges Bank

The question may arise as to whether financial crises are an inherent feature of a market-based financial system. What can the authorities and the financial industry do to reduce the likelihood of future crises?

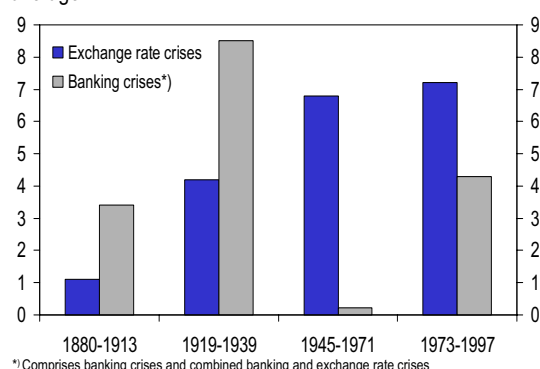
I will take a closer look at certain crisis periods that occurred before World War II and government responses in the form of legislation, regulation and the introduction of a financial safety net. In the decades prior to 1914, financial crises with a pronounced impact on banks were just as frequent as in our time.²⁾ During the interwar period, financial crises occurred even more frequently.

In the period of extensive direct regulation of banks up to the 1970s, there was a virtual absence of banking

¹⁾ See Bank for International Settlements (2001). *71st Annual Report*. Basel

²⁾ Bordo, M., Eichengreen B., Klingebiel, D. and M. S. Martinez-Peria (2001). "Is the crisis problem growing more severe?" CEPR

Chart 2 Frequency of financial crises internationally. Annual average



Source: Bordo, Eichengreen, Kliengebiel and Martinez-Peria (2001)

crises. However, the system was not sustainable and was at the root of many of the problems that followed. With a succession of crises since the early 1980s, financial stability has again become an issue, both at home and abroad. Nevertheless, there is fairly broad consensus as to the merits of a market-based system and free cross-border capital movements. The frequency of financial crises must be reduced by fostering solid financial enterprises. Risk systems must be improved. Market access to information on developments in micro and macro performance must be enhanced in order to strengthen market discipline in the financial industry. Better and uniform standards for accounting and statistics are important. Financial safety nets may offer greater security to households and small enterprises, which have difficulty obtaining an adequate overview of the risks in the financial system. At the same time, however, they must not be so favourable that they encourage irresponsible risk-taking. Central banks are also faced with the challenge of ensuring financial stability through their analyses and monetary policy.

Developments from the 1800s to the present

The regulation of financial institutions has undergone considerable changes. In the 1800s and up to World War I, the regulation of banks and other financial institutions was very limited. Norway was one of the most liberal countries. Regulation in other countries such as the US and the UK was more extensive.

In Norway, savings banks were subject to separate legislation, because they were to have a more social function than commercial banks. There were no guarantee funds, and the law for savings banks was designed to ensure that they were operated in a manner that safeguarded depositors' funds.

Cross-border capital movements were also subject to little or no regulation in the decades prior to 1914.³⁾

³⁾ Bordo, M. D, B. Eichengreen and J. Kim (1998). "Was there really an earlier period of international financial integration comparable to today?" NBER Working papers 6738

Capital markets were integrated in countries that had adopted the gold standard. There was solid confidence in the gold standard, and exchange rate risk was regarded as very low. Movement of capital between countries was often long-term, and tended to be associated with specific projects. As a small, open economy, Norway was totally dependent on an open, smoothly functioning capital market. From 1885 to 1913, the fixed investment rate in Norway was on average higher than the saving ratio.

Although short-term gross capital movements were far from their current levels, they were nevertheless significant. Monetary policy was restricted by the gold standard. Capital was highly mobile, and the interest rate had to be set to ensure that the exchange rate remained between the gold points. As a result, monetary policy could not normally be used to stabilise economic developments. Countries that suspended the gold standard were penalised with higher interest rates.⁴⁾

A look at earlier crises

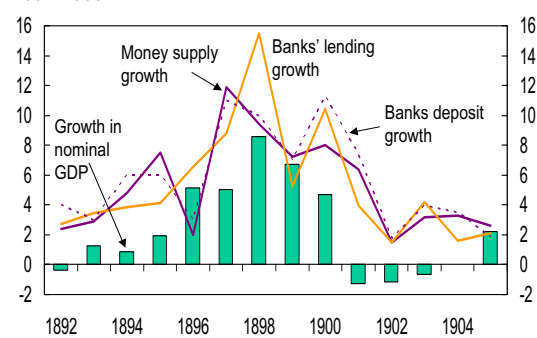
A weak stabilisation policy, relatively ineffective banking legislation combined with a poorly developed financial industry provided fertile ground for many financial crises.

The Oppland crisis occurred in 1864. It was a backlash of the boom in the latter half of the 1850s, when a sharp upswing in the timber industry led to widespread speculation.

Growth was also very strong in the early 1870s. At the same time, the boom paved the way for a period with the most severe banking disasters up to that time. There was considerable overcapacity in many industries at the time of the turnaround in the international economic situation in 1874. The most serious crash occurred in Arendal in 1886.

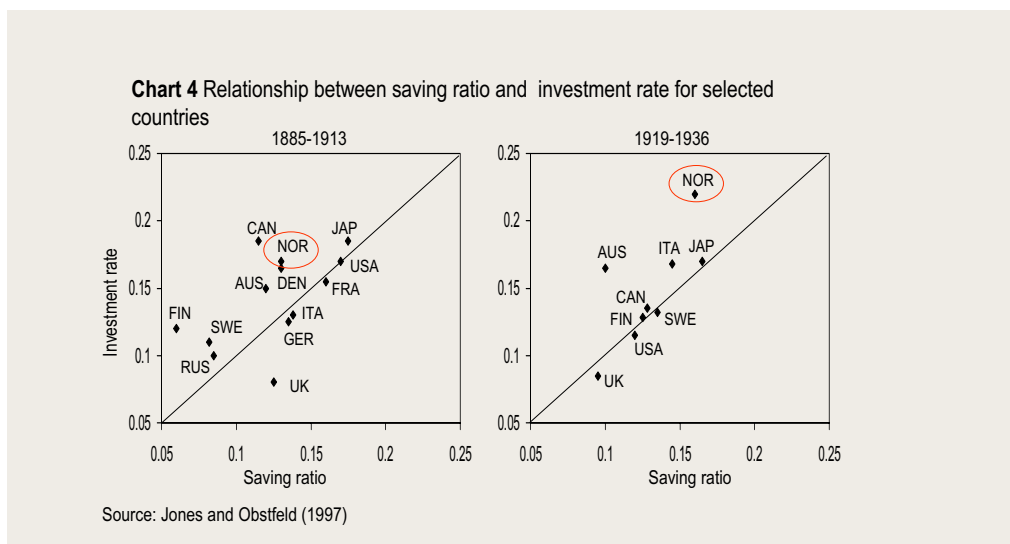
Not long afterwards, in the late 1890s, Kristiania (now Oslo) experienced a financial bubble. A favourable international economic situation and the building of railways led to a period of prosperity in the Norwegian economy,

Chart 3 Growth and decline in the 1890s. Annual growth. 1892-1905



Sources: Statistics Norway and Norges Bank

⁴⁾ Mauro, P., Sussman, N. and Y. Yafeh (2000). "Emerging Market Spreads: Then Versus Now." IMF Working Paper.



particularly in the capital. The money market was highly liquid as a result of the inflow of gold, and interest rates were relatively low. Growth in banks' deposits and lending increased in pace with the money supply. Kristiania's population grew and there was an explosive period of construction, of both dwellings and commercial buildings. Prices for land, building materials and houses rose dramatically. The crash was triggered in 1899 by a major bankruptcy. The crisis gradually became more acute for Norwegian banks, particularly commercial banks. It had lasting consequences for the Norwegian financial industry and the economy. The stock market was virtually at a standstill until World War I.

The crash compelled Norges Bank, for the first time in its history, to channel crisis liquidity to the banking industry.

The next financial bubble occurred during World War I. During the first half of the war, in particular, there was strong growth in the Norwegian economy. This provided the foundation for a boom that is unparalleled in history. Banks' lending rose sharply. The build-up of risk in the financial system was far more pronounced than in previous episodes. A strong inflow of gold led to uncontrolled growth in the money supply and inflation at the beginning of the war. In addition, the constraints implicit in the gold standard gradually broke down, and the money supply expanded sharply. The banking crisis came in the wake of a cyclical downturn in the early 1920s and can largely be attributed to the build-up of risk during the boom period. The bulk of bank losses occurred before the introduction of parity policy.⁵⁾

The authorities' response

In response to the extensive banking crises in the interwar period, a financial safety net for banks was introduced in most developed countries. In Norway, guaran-

tee funds were introduced for savings banks in 1921 and for commercial banks in 1938. There was also a need for separate rules on public administration of banks. These arrangements helped to dampen the effects of the crises and prevent new ones.

Commercial banks were subject to separate legislation and supervised by the newly established Banking and Savings Bank Inspectorate. Supervision of savings banks commenced as early as 1900, with the establishment of the position of Inspector of Savings Banks. This was probably one reason why savings banks were not as expansive as commercial banks during World War I. Nor were they as severely affected by the banking crisis.

A gradual increase in the regulation and supervision of financial enterprises and the introduction of a financial safety net did not mean that the market-based system was abandoned. However, recessions and demands for more protectionism led to restrictions on international trade and capital movements. The result was that domestic investments increasingly had to be financed through domestic savings. This can be illustrated by looking at the relationship between the saving ratio and the fixed investment rate for selected countries. A strong correlation indicates a limited degree of openness. Measured in this way, integration was greater before 1914 than in the interwar period.⁶⁾ Protectionism had a very harmful effect on economic developments.

After World War II, international organisations were established to promote economic cooperation and their objective was increased integration of international trade and fixed investment. However, cross-border capital movements remained heavily regulated. The same applied to direct regulation of financial enterprises. Other considerations, than returns and risk, took precedence in connection with the provision of credit and capital movements.

⁵⁾ Ecklund, G. J. and S. Knutsen (2000). *Vern mot kriser? Norsk finanstilsyn gjennom 100 år*. (Protection against crises? 100 years of Norwegian financial supervision) Fagbokforlaget.

⁶⁾ Jones, M. T. and M. Obstfeld (1997). "Saving, Investment, and Gold: A Reassessment of Historical Current Account Data". NBER Working Paper Series.

At the end of the 1970s, direct controls were gradually removed. As a result of the emergence of new financial instruments, the controls no longer had the same effect. There was a growing realisation that the existing controls had a negative effect on the allocation of credit and capital, and hence on long-term economic growth. Cross-border capital movements were gradually liberalised. It was not until the 1990s that capital was able to move between countries as freely as before 1914.

Because of the serious effects of financial crises, the financial industry is subject to many regulations and to extensive supervision. The industry is by no means deregulated, but the regulations are now designed to make markets function more securely and more efficiently. Clear requirements have been established for both capital adequacy and liquidity. Nevertheless, the regulations do not eliminate the possibility of financial crises.

Are financial crises an inherent feature of today's system?

The transition to a market-based system has increased the scope for financial cycles.⁷⁾ The cycles may be amplified by unrestricted cross-border capital flows. Because of the central role of the financial industry as a credit and capital intermediary, this can also influence macroeconomic developments. At worst, an upswing in the economy can be amplified through the build-up of financial imbalances, which may trigger and reinforce a downturn and financial crisis.

Technological innovations that increase productivity in the economy may rapidly lead to general optimism and a broad economic upturn. Since the 1800s, we have seen waves of optimism and large-scale investment in railways, shipping, hydroelectric power stations and now, most recently, information technology. Upturns may also be driven, or amplified, by demand-side factors in the economy.

During an upturn, income growth is high in both the enterprise and the household sector. The value of property and securities, and thus the collateral for new loans, rises. Financial and other enterprises are upgraded by credit rating agencies. Banks record low losses and solid results and can increase lending without weakening capital adequacy. Demand for credit can easily be met by obtaining financing on favourable terms in both domestic and foreign money and capital markets. As a rule, it is also easier to raise equity during economic upturns.

Under these circumstances, credit risk may be underestimated and not priced into margins. The financial industry may share in the generally prevailing optimism, and strong competition may lead to a contest for market shares. In this way, banks contribute to building up risk in the financial system. The loans with the highest risk

⁷⁾ See Bank for International Settlements (2001): *71st Annual Report. Basel*

are probably those granted at the peak of the economic cycle. Households and enterprises often have a relatively high debt burden at such times, and loans are secured by inflated property and asset prices.

The securities and capital markets are another important source of capital for enterprises. During an upturn, many enterprises find that capital is “cheap”, because the outlook for the future is regarded as very bright. There is a risk of over-investment.

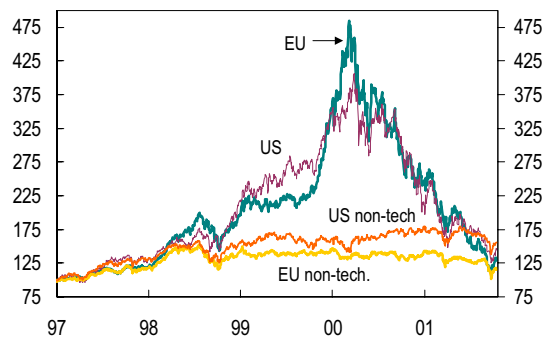
Optimism may rapidly give way to pessimism if investments fall short of expectations and negative news starts to spread. As a result, the risk that has accumulated during the upturn period may materialise. The financial sector may choose to interpret developments as a sign that the risk associated with new projects has also increased, with the result that this risk may be overestimated. A drying up of credit and capital may trigger or amplify a crisis.

The costs of financial instability may be very substantial. Therefore, it is necessary to dampen financial cycles.

The outlook for financial stability

The outlook for the global economy is now weak. The terrorist attacks on the US on 11 September have increased uncertainty. We have witnessed a bubble in technology shares. From 1998, the price of technology shares rose substantially more than earnings, and since March 2000, there has been a sharp correction in prices. Life insurance companies and pension funds, both at home and abroad, have lost a considerable portion of their buffers due to the decline in share prices. Telecommunications companies have been through a phase marked by substantial borrowing. Credit rating companies have downgraded many telcoms due to high debt levels in relation to future prospects. This has increased funding costs.

Chart 5 The technology share bubble. Index, Jan. 1997 = 100. 01.01.97 - 15.10.01



Source: Norges Bank

When economic growth slows, problems in enterprises and countries with high debt burdens rise to the surface. There has been constant unrest in countries like Turkey

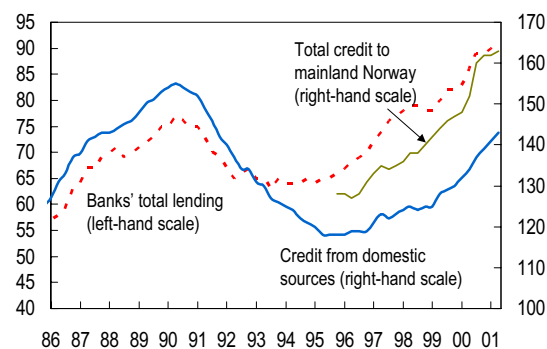
and Argentina, which are struggling with high borrowing costs. Japan has not yet recovered from its more than 10-year-long banking crisis and is vulnerable to new shocks.

Up to this autumn, the effects of the international turnaround on the Norwegian economy were limited. It now appears clear that Norway will also be affected by the slowdown. A number of Norwegian enterprises in export industries and the travel industry have felt the effects of growing caution among households and businesses worldwide. Investment in mainland enterprises will probably also decline.

Domestic credit growth remains high, and since 1993 has been stronger than growth in value added measured in terms of GDP. Banks in particular have contributed to this.

At times, growth in lending has been markedly higher

Chart 6 Credit growth. Percentage of mainland GDP. 1986-2001



Sources: Statistics Norway and Norges Bank

in savings banks than in commercial banks. At the end of August, year-on-year growth in lending was 11.7 per cent for savings banks and 9.2 per cent for commercial banks, when adjusted for portfolio transfers. There seems to be an indication of growing competition for market shares. Savings banks are also competing increasingly in commercial banks' traditional business areas. There is a risk of overcapacity.

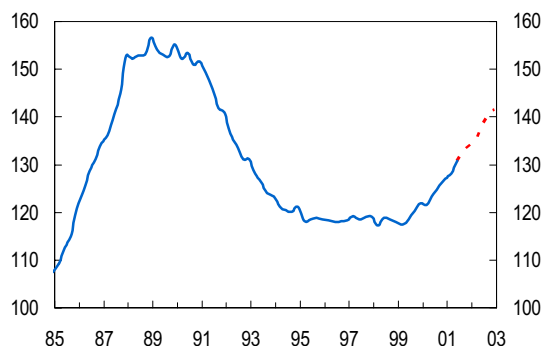
Credit growth in both the household and enterprise sectors has been strong. At the end of August, year-on-year growth was 11 and 9.1 per cent respectively. Growth in lending to the enterprise sector has slowed recently while demand for credit in the household sector has remained stable. Both households and mainland enterprises have increased their debt burden markedly in recent years.

If credit to the household sector continues to grow through next year, household gross debt is expected to increase to more than 140 per cent of disposable income by the end of next year. Even with such high debt, the interest rate will have to rise by more than 3 percentage points for gross interest expenses to constitute the same burden, measured as a percentage of income⁸⁾ as before

⁸⁾ Income here is defined as household disposable income before deduction of gross interest expenses.

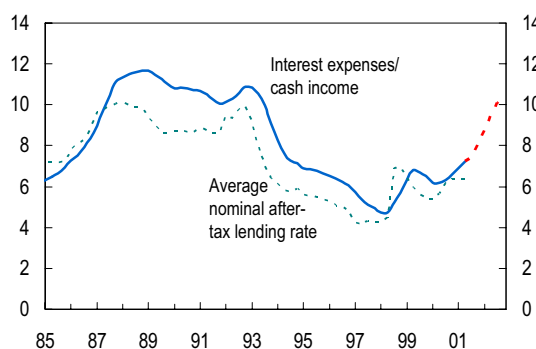
the banking crisis, when it was around 10 per cent. This illustrates that we have a long way to go before households are as vulnerable as they were then, but no one wants us to come that far either.

Chart 7a Household debt servicing capacity. Gross borrowing as a percentage of disposable income



Source: Norges Bank
--- Assuming lending growth of 11 per cent until end-2002 and an interest rate increase of 3 percentage points from 2000Q4

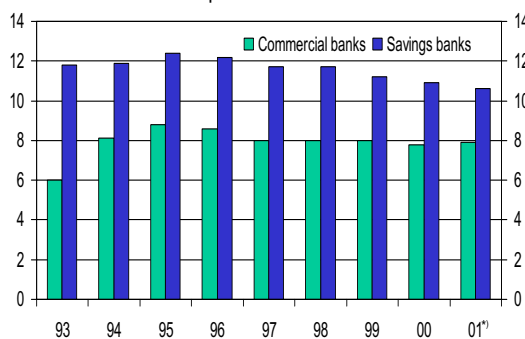
Chart 7b Household debt servicing capacity. Interest expenses as a percentage of cash income



Source: Norges Bank
--- Assuming lending growth of 11 per cent until end-2002 and an interest rate increase of 3 percentage points from 2000Q4

High credit growth has resulted in a falling core capital ratio. However, capital adequacy ratios at many savings banks remain high.

Chart 8 Banks' core capital ratio. Per cent

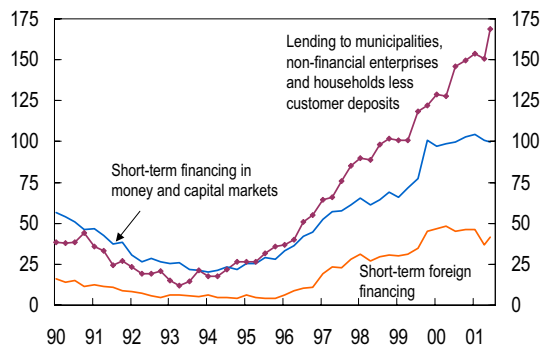


Source: Norges Bank
^{*)} Surplus for first half year not included

Bank lending has increased more than deposits, and in the last few years banks have become more dependent on money and capital markets. Small and medium-sized

banks have substantially increased their borrowing from other credit institutions. Short-term foreign debt has also risen. Although the decline in stock markets appears to have improved the financing situation in recent months, other forms of saving are expected to compete strongly with bank deposits.

Chart 9 Savings banks' funding requirements. In billions of NOK. March 1990 - August 2001



Source: Norges Bank

In general, foreign borrowing is a source of diversification and thus risk reduction, but it can also spread unrest. By international standards, Norwegian savings banks are small. It can be costly to change a source of funding if one source should dry up. In the event of considerable financial unrest in international financial and capital markets, savings banks may be affected. Today, the shocks are often global.

If the current high credit growth continues, financial stability in Norway will be threatened. We will become more vulnerable to all kinds of shocks. I have already touched upon the weak outlook for the global economy. There is also reason to expect considerable structural changes in the business sector, for example, when economic resources have to be transferred to the public sector and other sheltered sectors. Restructuring may take place within established companies, but may also take place in a far less controlled manner and result in losses for banks and other lenders.

Policy challenges

Like banks and other market participants, the authorities also learn from crises. I will discuss three areas in which we have learned important lessons.

First, economic policy must be oriented towards stable economic development. An inappropriate economic policy has been a contributing cause of crises both in Norway and abroad.

Norges Bank has been given an operational target for monetary policy, which means that monetary policy instruments shall be used with a view to maintaining low and stable inflation. The inflation target is set at 2½

per cent. Low and stable inflation is probably the best contribution monetary policy can make to financial stability. This is also supported by empirical studies.⁹⁾

However, there have been episodes where bubbles have accumulated in the form of sharp increases in asset prices in the property and financial markets while inflation has been low. Developments in Japan in the 1980s and in the US in the 1990s may be examples of this. When the bubbles burst, the result may be an economic downturn. Thus, developments in the financial and property markets may also fuel more unstable inflation. In principle, it might be appropriate to use the interest rate to counter this. In practice, however, it is difficult to assess whether developments in prices for property and financial assets are sustainable.

When Norges Bank concludes that the key rate should be changed, the change will in most cases be made gradually. If special emphasis is placed on developments in financial or property markets when the key rate is changed, Norges Bank will provide an assessment of this.

It is Norges Bank's responsibility to present its view on the risks facing the financial system from a macro-economic perspective. This is the purpose of Financial Stability, a report published twice a year.

Second, the international financial infrastructure must be strengthened. This also entails increased international cooperation.

Many financial crises in the 1980s and up to today have occurred in countries where rules and supervision are relatively ineffective. As a result, the financial sector has become fragile. The capital strength of financial institutions has been inadequate. Deregulation has occurred before the country's financial infrastructure is in place. This has fuelled the build-up of financial bubbles. Large fluctuations in capital movements have often intensified the problems. Elements of this were also present during the banking crisis in the Nordic countries.

The financial safety net should help prevent financial instability and curb the effects if instability should arise. This may also prevent the development of imbalances. Deposit guarantees, crisis liquidity schemes and the assumption that large banks will be rescued by the government may weaken market discipline. The result may be increased risk-taking.

International organisations have developed international codes and standards for the financial infrastructure and for the regulation and supervision of the financial sector, which are in line with good practices.¹⁰⁾ These codes and standards should contribute to improving policy and creating more robust financial systems. They should make it easier for investors and others to keep abreast of developments, which in turn will

⁹⁾ Bordo, M. D., Dueker, M. J. and D. C. Wheelock (2000). "Aggregate price shocks and financial instability: An historical analysis." NBER Working Paper 7652

¹⁰⁾ See BIS, Financial Stability Forum (2001). International Standards and Codes to Strengthen Financial Systems.

increase their ability to assess risks in a country. This will reduce the risk of herd behaviour and the build-up of substantial imbalances.

The International Monetary Fund plays an important role in international surveillance and crisis management. They have substantially strengthened their oversight of the financial systems in member countries. Other international organisations are also intensifying their efforts in the area of financial stability.

In the Nordic countries, both the supervisory authorities and the central banks have expanded their cooperation as a result of the integration of the Nordic banking industry. One question that will arise is whether guarantee funds and other rules and regulations can differ when markets are so closely integrated.

Next year, an important international milestone will be reached when the Basel Committee on Banking Supervision presents the new capital adequacy rules. According to plan, the rules will apply from 2005. Basel II has a three-pillar architecture. First, the rules relating to minimum capital requirements will be further developed. Second, the supervisory authorities will monitor banks more actively. Third, information disclosure requirements will enhance market discipline. Combined, this will constitute a coherent system for protecting the financial strength of banks. The regulations will improve the balance between capital requirements and banks' financial risk. This will also increase the focus on the development of risk management systems.

Finally, I would like to place particular emphasis on the need for market discipline, which is the third pillar in the proposed Basel Capital Accord. Financial stability is dependent on the identification, management and control of risk. This also means that we must factor in risk. This applies to banks in their internal credit routines, and others with interests in banks – shareholders, lenders, bondholders and depositors. Market participants must understand that equity, subordinated loan capital and other claims on banks not covered by deposit guarantees may be lost. The financial industry must therefore be forward-looking. Buffers must be built up in periods of expansion when losses are low and profitability is high.

The financial safety net must be reassessed if it is so favourable that banks and market participants are not encouraged to exercise market discipline. For example, deposit guarantees in Norway cover larger amounts than in many other countries.

Despite the lessons that both the authorities and the financial industry have learned from financial crises, such crises may nevertheless occur in the future. Experience indicates that crises are often a result of inherent processes in the financial system. There is still reason to hope that the authorities through their policies and formulation of rules and the financial industry through its management of risk will reduce the frequency of financial crises.

Increased cash holdings – reduced use of cash: A paradox?

Olaf Gresvik and Aris Kaloudis, economists in the Financial Infrastructure and Payment Systems Department¹⁾

Outstanding cash holdings in Norway have increased in real terms since 1980 and now amount to about NOK 10 000 per person. We can only ascribe between 37 and 47 per cent of cash holdings to legal, registered, quantifiable purposes in 2000, and this share has fallen in recent years. This article aims to shed light on this situation using a new method for explaining the use of cash in Norway.

1 Introduction

Total holdings of Norwegian notes and coins, measured in nominal value, rose each year from 1980 to 1999, but fell somewhat from 1999 to 2000, to an annual average of NOK 43.5 billion. The figure for cash holdings in circulation appears on Norges Bank's balance sheet. Cash holdings are a result of the desire of various sectors outside of Norges Bank to hold notes and coins as an alternative to other forms of investment.

The use of cash cannot be traced, and payer and payee cannot be identified. This distinguishes cash from other payment instruments, which are traceable, ie both payer and payee can be identified. Due to the properties of cash, it is difficult to acquire an overview of where, how and how much is used. However, our experience in Norway indicates that the use of cash at points of sale (POS) is on the decline and that the use of payment cards is rising correspondingly. Points of sale are defined as places where goods and services are delivered in return for payment. Examples are hairdressing salons, grocery stores or cafés. Despite a reduction in the use of cash in these kinds of sales, cash holdings are increasing, both overall and per inhabitant. Kaloudis and Storberg (2000) refer to this apparent paradox and argue that the explanation is that cash is used for other purposes than registered transactions at points of sales. A study by Rogoff (1998) shows that this paradox also exists in other countries. However, few studies have directly quantified the use of cash for different purposes.

In this article, we use a new method for estimating the share of cash holdings that is necessary to perform legal, registered transactions in an economy. We are thus able for the first time to estimate the magnitude of transaction-motivated demand for cash for all sectors of the Norwegian economy. The model shown here was first published in a study carried out at Norges Bank in 2000 by Humphrey, Kaloudis and Øwre (2000). The calculations in this article are based partly on new data and some altered assumptions. Our main sources for this work have been Norges Bank's Annual Report on Payment Systems and Norges Bank's FINDATR data-

base, which contains quarterly financial accounts figures. Our calculations indicate that a large portion of cash holdings in Norway is not used in the registered economy, but is used for storing wealth or for purposes related to transactions in the unregistered sector of the economy.

In the second section, we calculate the value of cash holdings that are used in the registered sector of the economy. In the third section, we show calculations of cash holdings associated with other quantifiable purposes as well as registered storing of wealth, and summarise our findings. In addition, we describe an alternative, simpler method of calculation that largely confirms our findings. In the fourth section, we discuss how the remainder of cash holdings, which cannot be ascribed to transactions in the registered sector of the economy or other quantifiable purposes, may either be used for person-to-person transactions which are legal, but not registered, for storing wealth, or in connection with tax evasion and criminal activities, before we sum up in the final section. All figures in the article are in nominal terms, unless otherwise specified.

2 Cash holdings in the registered sector of the economy

We have divided the economy into four sectors which use cash for transaction purposes, and which therefore need to hold cash. These four sectors are:

- Banks and financial institutions
- Government authorities, public enterprises and municipalities
- Private, non-financial enterprises
- Households

Banks and financial institutions need cash holdings in order to meet their customers' (enterprises, government authorities and households) demand for cash. In addition, most banks offer night safe services, and as a result, a large portion of the cash from local business ends up in bank branches. Data on the value of cash holdings in banks come from Norges Bank's FINDATR

¹⁾ We wish to thank Grete Øwre, Henning Strand, Kjetil Watne and Espen Tørum for their valuable comments. We also wish to thank Tor Bjerkedal in the Norwegian Financial Services Association (FNH) for providing access to statistics on cheque use in the 1980s.

database, which contains information about quarterly financial accounts. Bank holdings have increased slightly in the years since 1994.

Government authorities, public enterprises and municipalities need cash in order to serve the public. These statistics are taken from Norges Bank's FINDATR database. The public sector's need for cash holdings has declined in recent years, and holdings in 2000 were approximately halved compared with the level in the period 1985 to 1995.

Private enterprises need cash in order to serve their customers, mainly private individuals. Norges Bank's FINDATR database provides data on the value of cash holdings in private enterprises with limited liability. In order to estimate the cash holdings of private enterprises with unlimited liability and non-profit organisations, we assume that the relationship between these two groups' cash holdings is equal to the relationship between the groups' sight deposits. The total indicates cash holdings in private enterprises. The cash holdings of enterprises increased each year throughout the period. However, the real value of holdings in the private sector has decreased substantially, particularly in the 1980s.

Households' cash holdings for POS transactions increased from 1980 to 1994. From 1995, holdings were substantially reduced. The calculation method used to reach this conclusion has been developed recently and is described below.

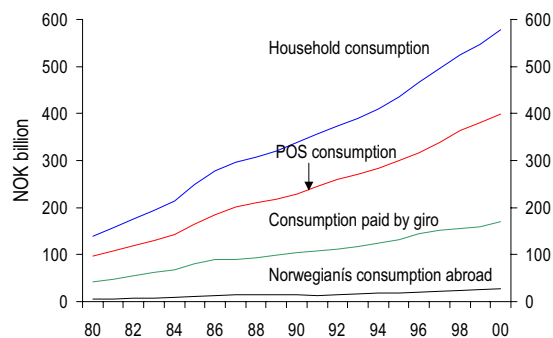
According to the national accounts, household consumption in Norway totalled NOK 139 billion in 1980. In 2000, consumption amounted to NOK 578 billion. Household consumption is the total of residents' and non-residents' consumption in Norway. This consumption is paid by giro (credit transfer), cheque, payment card and cash. However, giros are used for large payments and for payments where buyer and seller do not meet. Consumption paid by giro must therefore be kept separate in order to isolate that portion of household consumption called 'consumption at point of sale'. Consumption at point of sale is thus that portion of consumption that is paid by payment card, cheque or cash.

The following method is used to distinguish that portion of consumption that is primarily paid by giro: using common sense and simple characteristics such as that the goods or services are typically sold periodically, that they are purchased from a company that does not have branches or sales outlets, and that the goods or services are regarded as expensive, the following are defined as goods and services that are normally paid directly by giro:

- House rent
- Motor vehicles for personal use and car insurance
- Electricity and heating
- Postal and telecom services
- Costs connected with study fees etc.

The value of these goods and services was NOK 43 billion in 1980 and NOK 179 billion in 2000. When these goods and services are deducted from household consumption, we are left with 'consumption at point of sale'. In 1980, POS turnover was thus NOK 96 billion, and in 2000, it was NOK 399 billion, according to these calculations. Developments in POS consumption compared with total consumption and that portion of consumption that it is natural to pay by giro are shown in Chart 1.

Chart 1: Household consumption. In billions of NOK. 1980-2000



Source: Norges Bank

To find the value of POS consumption which is paid in cash, the value of cheque and payment card transactions must be deducted from the value of POS consumption.

Data on the use of cheques in Norway in the period covered by the survey are limited. From the existing data, we have estimated the number of personal cheques for the period 1980-2000 using regression analysis. The calculation is extensive and is omitted here for reasons of space. We know little about the value of the personal cheques that are used at points of sale. We have therefore used the average value of transactions with international credit cards in the period 1988-2000 as an estimate of the average value of cheques used at points of sale. By multiplying the average value of credit card transactions by the estimated number, we obtain an estimate of the value of cheques used at points of sale in the period 1980-2000. This is a new assumption compared with previous studies. The value is estimated at NOK 330 million in 2000, after peaking at NOK 52.8 billion in 1988. In 1980, the value was NOK 30.7 billion.

Payment cards have become a very popular payment instrument in Norway. Norges Bank's *Annual Report on Payment Systems for 2000* presents figures for residents and non-residents use of payment cards in Norway in the years 1990-2000. We have estimated the average value per transaction for the years 1980-1989 by adjusting the average value in 1990 for inflation during the previous 10 years. In addition, we have assumed that the number of payment card transactions has increased proportionally with the number of POS terminals. This is a

Calculation of cash replenishment frequency

There are three channels of cash acquisition in Norway: at the counter in banks and post offices, ATMs and cash back at payment terminals in connection with goods purchases. In the *Annual Report on Payment Systems for 2000*, Norges Bank presented almost complete statistics on the number of cash withdrawals in Norway. Statistics on cash withdrawals from ATMs cover the entire period 1980-2000, while the statistics on cash back in connection with goods purchases only cover the year 2000. 1992 was the first year Norwegians could withdraw cash at payment terminals in connection with goods purchases. Since then, cash back in connection with goods purchases has become just as important as a channel for acquiring cash as ATMs. Therefore, we have estimated the development in the number of withdrawals in connection with goods purchases for the years 1992-1998 by assuming that annual growth in the number of cash withdrawals has been constant and equal to the growth from 1999 to 2000 (growth rate of 50 per cent). We have

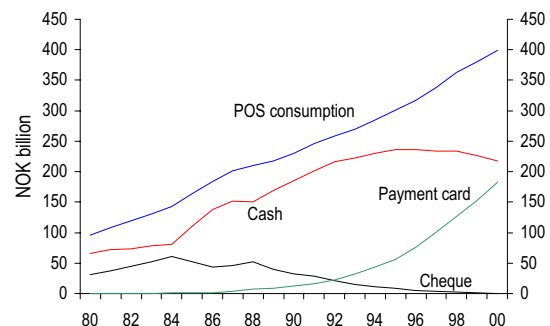
information about cash withdrawals at the counter (banks/post offices) for the period 1996-2000. We have assumed a negative correlation between cash withdrawals at the counter and cash withdrawals from ATMs and in connection with goods purchases. Based on this correlation, we have calculated the number of cash withdrawals at the counter for the years 1980-1995. By dividing the sum of the number of cash withdrawals from all three withdrawal channels by the number of Norwegians over the age of 15, we can estimate the cash replenishment frequency for the period 1980-2000. This figure tells us how often a Norwegian on average renews his cash holdings in the course of one year. Our calculations show that while the average was 38 in 1980, it rose to 66 in 2000. We see that access to additional withdrawal locations (ATMs and payment terminals) has changed the pattern of withdrawals. The frequency of cash replenishment has increased while the amount of each withdrawal has gone down somewhat.

new assumption. These assumptions were incorporated in a regression analysis which provided an estimate of the number of transactions in the period 1980-1989. We found the value of payment card transactions by multiplying the number of transactions by the average value for the period 1980-1989. The values for the first years (1980 and 1981) of the development of the EFTPOS system²⁾ are estimated to be negligible. In 2000, turnover amounted to NOK 182 billion.

We find the value of cash used at points of sale when we subtract the above estimates for checks and payment cards. The amount increases from NOK 65 billion in 1980 to NOK 236 billion in 1996. The value then declines to NOK 217 billion in 2000. Cash accounted for 68 per cent of the value of POS turnover in 1980. The share fell to 56 per cent in 1984, increased to 83 per cent in 1993 and dropped to 54 per cent in 2000. We assume that the increase and decrease in popularity of cash as a means of settlement at the point of sale depends on the use of checks and payment cards. Check use increased sharply until 1984 and declined after 1985 when banks introduced fees on check use. The use of cash increased in tandem with the decline in check use and the development of the ATM network, which provided easier access to cash. During the last half of the 1990s, payment cards increasingly replaced the use of cash as a payment instrument. The effect is particularly apparent after 1998 when the use of payment cards increased very rapidly and the rise in cash use was reversed. Developments in the distribution between payment cards, checks and cash are shown in Chart 2.

²⁾ EFTPOS = Electronic Funds Transfer at Point Of Sale is a payment terminal system for handling payment cards.

Chart 2: POS consumption by payment instrument. In billions of NOK. 1980-2000



Source: Norges Bank

The value of consumption paid in cash at points of sale is used as the basis for calculating the amount of cash holdings that is adequate to enable the public to pay for this consumption. To calculate this we must first calculate the public's cash replenishment frequency, ie how often on average individuals acquire cash. This calculation is described in a separate box.

To find the value of cash holdings which is adequate to cover household POS consumption, we divide the value of consumption paid in cash at points of sale by the frequency of cash replenishment. The concept behind this method came from Baumol (1952). In Baumol's model for the transactions demand for cash, cash is considered an ordinary good and cash holdings are considered ordinary inventory. Time and transport costs and withdrawal fees induce a rational user to make as few withdrawals as possible for as large an amount as possible. On the other hand, large cash holdings imply

lost interest income and increased security costs (costs connected to the risk of loss or theft of cash holdings). The net effect of these costs affects the individual's choice of cash holdings for transaction purposes.

We assume that Norwegians withdraw a fixed amount each time they make a withdrawal to cover cash needs for a certain number of days. The amount changes from year to year in step with the change in the number of days between each withdrawal and with the increase or decrease in the value of consumption paid in cash.

Estimated cash holdings increased from 1980 to 1994, probably because of the transition from the use of checks to cash in this period. From 1995, cash holdings declined substantially, which may be explained by the fact that after 1992, the EFTPOS system provided access to cash without time and transaction costs or additional withdrawal fees.

With our new data, we can establish a shift in the payment system: when checks were used most often, in 1984, about half of household consumption was paid in cash. This was more than twenty years after the check became common. A reduction in the use of checks increased the cash share to more than 80 per cent in 1993. In 2000, the cash share was lower than in 1984, about ten years after payment card use became widespread. Assuming that there will be no significant changes that reduce the use of payment cards and at the same time stimulate the use of cash, it appears that the use of cash for transactions will continue to decline in the next few years. However, cash will probably not disappear from daily use in the foreseeable future.

3 Cash holdings for other quantifiable purposes

Cash held abroad accounts for 0.7 per cent of outstanding cash holdings, based on a survey conducted by Statistics Norway.

The tax authorities have figures for 1996-1999 for cash holdings declared in tax returns. These figures represent taxpayers' year-end cash holdings in excess of NOK 3000, information which should be provided in tax returns. We assume that this cash is held for other reasons, eg storing of wealth, than cash that is held for POS transactions. We assume that the value prior to 1996 was the same as in 1996 and that the value in 2000 was the same as in 1999.

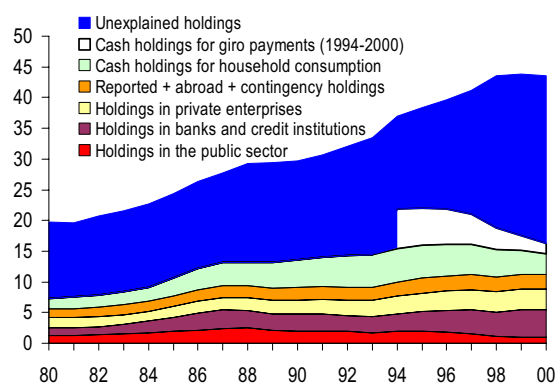
We also assume that there are costs involved in running out of cash, so that everyone will want to have a certain cash reserve at all times in addition to and independent of the cash holdings that are used to cover POS consumption. We call this contingency holdings. For 2000, we assume that this amount was NOK 400. For the previous years, we assume that the average individual held an inflation-adjusted amount equivalent to NOK 400 in the year 2000. We further assume that this applies to that por-

tion of the population that is 15 years or older. These three items combined give an increasing nominal amount from one year to the next throughout the period.

Cash is not only used for POS consumption. It is also used to pay giros at the counter. The cash holdings required to complete these giro transactions may be calculated on the basis of the payments throughout the year. The amount has diminished substantially in the last five years. By using the cash replenishment frequency in connection with giro payments in the same way that we calculated cash holdings for consumption, we determine the holdings that are adequate to pay the giros that are paid in cash at the counter.³⁾ Unfortunately, there are no statistics for giros paid in cash before 1994 and we have not made an estimate for the previous years.

When we add up all the different components of cash holdings, we conclude that the sum only explains a relatively small share of total outstanding cash holdings (see Chart 3, which shows developments measured in billions of NOK).

Chart 3: Cash holdings by sector and for different types of transactions. In billions of NOK. 1980-2000



Source: Norges Bank

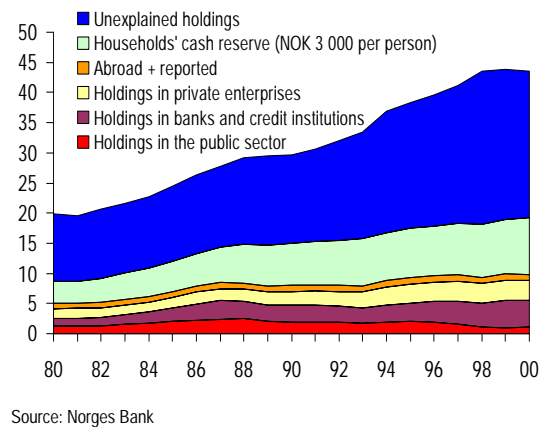
Total cash holdings have increased throughout the period 1980-2000, while the portion that may be accounted for is more variable, especially measured as a percentage of the total. Cash holdings that are accounted for (excluding giros paid at the counter) rose from 37 per cent in 1980 to 46 per cent in 1991 but fell again to 33 per cent in 2000. The time series for cash holdings used to pay giros at the counter is shorter and is included after 1994. Giros paid at the counter increase the share of cash holdings that is accounted for to 59 per cent in 1994 and 37 per cent in 2000. The remaining 63 per cent represents cash holdings for unregistered purposes.

³⁾ The public's behaviour in connection with paying giros in cash is not necessarily the same as behaviour in connection with using cash at points of sale. It is possible that by using the estimated cash replenishment frequency we underestimate the household sector's real need for cash to pay giros. The cash replenishment frequency is primarily calculated to determine the household sector's need for cash holdings to cover consumption paid in cash.

Alternative estimation of the public's cash holdings

We can also use a more direct method for estimating an upper limit of the value of the public's cash holdings, regardless of the purpose. We mentioned earlier that all taxpayers are required to report year-end cash holdings in excess of NOK 3000. Let us assume that all individuals in Norway who are 15 years or older have a cash reserve of exactly NOK 3000. This is the same limit stipulated in the tax return as the amount that may be held before it is subject to wealth tax, in this connection an unreported cash holding. We deduct the contingency holding of NOK 400 (as assumed in the text) from this amount. This gives us NOK 9.4 billion in public cash holdings, which combined with the other items can explain 47 per cent of the outstanding cash holdings in Norway in 2000. Chart 4 shows developments during the period 1980-2000. We see from the chart that this calculation method does not explain how large portions of cash holdings are used.

Chart 4: Alternative calculation of the explained portion of cash holdings. In billions of NOK. 1980-2000



4 The unexplained portion of cash holdings

As we have mentioned, we can explain the use of between 37 and 47 per cent of cash holdings in 2000 on the basis of statistics and estimations. The unexplained portion can probably be tied to:

- Legal person-to-person transactions that are not registered in the national accounts
- Storing of wealth
- Tax evasion and criminal activity

The majority of cash holdings is thus used for unregistered (legal and illegal) activities in Norway.⁴⁾ This is also the case in most other OECD countries, according to a study by Rogoff (1998). He also shows that as in Norway, cash holdings as a share of GDP have increased the last 10-15 years in all OECD countries. Boeshoten and Fase (1992) refer to a survey in the Netherlands from 1986 and conclude that only a small portion of cash holdings is used for legal transactions in the Netherlands. Some 60-70 per cent of Dutch banknotes with the highest denomination (1000 guilders) is used for storing wealth, and this is primarily related to tax evasion and criminal activity, according to the survey. Our analysis indicates that the same is true in Norway.

The unexplained portion of cash holdings may be used for unregistered person-to-person transactions which include purchases and sales of goods or services that do

⁴⁾ Some cash disappears from circulation. Some is lost, in particular small denomination notes and coins. Some cash is held by collectors and disappears out of circulation in this way. The available statistics are rather incomplete, partly because the period of validity for old notes and coins is long. An estimated 1-5 per cent of cash holdings disappears from circulation.

not have to be registered. There are legal transactions, such as the purchase of used pleasure boats, cars, motorcycles, PCs and other sales that do not go through a dealer. However, the pattern of cash use for these kinds of transactions is probably different from the pattern of daily, registered transactions. The purchase of a used car or boat normally involves a relatively large amount of money so that a cash withdrawal from an ATM (normally, ATMs have a withdrawal limit of NOK 9 900) or cash back in connection with goods purchases (withdrawal limit is NOK 1 000) cannot be used to procure cash. Cash must be obtained from a bank or post office. It is also assumed that individuals are not comfortable keeping large amounts of cash over a long period of time. Cash is probably used after one to three business days, ie more quickly than cash that is kept for ordinary transactions. We have estimated turnover in two large markets, the used car market and the market for small used pleasure boats. Combined turnover in these markets amounted to approximately NOK 30 billion in 2000. If we assume the extreme case where all transactions are paid in cash, including sales through dealers, the need for cash holdings will still be small. If cash is held for two business days (one day by the buyer and one day by the seller) the need for cash holdings would be NOK 164 million daily throughout the year. This is roughly 0.4 per cent of the value of total cash holdings. We can define several markets that need cash for legal transactions, but it is difficult to imagine that this would noticeably improve the degree of explanation. There will still be a large, unexplained portion that consists of the need for cash for storing wealth and for illegal activities.

We assume that the unexplained portion of cash holdings – 63 per cent in 2000 – is primarily connected with the storing of wealth, tax evasion and criminal activity.

The storing of wealth may be divided into two main categories: voluntary storing of wealth ('savings under the mattress' which in principle is legal) and forced storing of wealth due to tax evasion or criminal activities.

Voluntary storing of cash wealth that is not connected directly to illegal behaviour is legal, provided that the amount is reported to the tax authorities. Some of this is probably not reported. Some people hold large amounts of cash savings which are not reported. We do not have any figures on which to base an estimate of the amount involved.

Tax evasion and criminal activities probably account for a large portion of cash holdings. The reason may lie in the cash transaction pattern. In the registered segment of the economy, there is a well-developed network that handles cash turnover and distribution. It is not always possible to use the infrastructure that facilitates cash circulation in the legal segment of the economy when making transactions that are directly connected with illegal activities. In addition, illegal transactions generate gains that can quickly attract the attention of the tax authorities and banks (banks are required to report any suspicious transactions that may suggest money laundering) if the money is deposited directly in Norwegian bank accounts. As a result, there is a need to store cash for longer periods in connection with illegal activities than in connection with legal activities. One might say that illegal activities lead to forced storing of cash wealth. Therefore, it is natural to assume that cash changes hands more frequently in the registered segment than in the illegal segment of the economy.

Unexplained cash holdings are large, more than NOK 27 billion, and it may seem strange that a large portion of this amount may be tied to activities in the black economy. However, this is not necessarily unreasonable. The tax authorities have estimated the scope of the black economy to approximately 10 per cent of GDP, or just over NOK 140 billion. Let us assume that this is correct. In addition, total cash holdings used in the illegal economy could at the most amount to the figure that we are unable to explain in our calculations, ie NOK 27.3 billion. Assuming that cash is the only payment instrument used in the illegal economy, every krone in the illegal economy changes hands 5.18 times during the year, or every 70 days. This is less frequently than in the legal segment of the economy, where one krone changes hands legally 66 times during the year, or every 6 days, according to our calculations. If the velocity of circulation is much lower in the illegal segment than in the legal segment of the economy, then the need for cash holdings will also be larger in connection with illegal activities than in connection with legal activities.

Nevertheless, it is difficult to be more precise about the percentage of cash holdings connected with the illegal segment of the economy without concrete data on the velocity of circulation in the black economy or the scope of cash holdings for 'legal' storing of wealth.

5 Summary

Norges Bank has a statutory responsibility for satisfying society's demand for cash. Demand is determined by the various activities described above. The special features of cash (immediate, anonymous settlement and untraceable transactions) ensure that cash remains an effective means of payment in connection with many kinds of transactions. Since cash is difficult to monitor, we are dependent on more indirect methods as discussed in this article to discover how cash is used.

Cash holdings have more than doubled from 1980 to 2000. Between 37 and 47 per cent of cash holdings may be ascribed to specific purposes in 2000, for example households', companies', banks' and credit institutions' cash holdings for payment transactions. The portion that can be explained by transaction-motivated demand for cash has declined throughout the period but diminished more rapidly after 1996. The unexplained portion (which has increased the entire period) is used partly for legal, but unregistered transactions such as storing wealth and private transactions and partly in connection with illegal activities such as undeclared work and criminal activity.

References

- Baumol William J. (1952): "The Transactions Demand for Cash: An Inventory Theoretic Approach", *Quarterly Journal of Economics*, Volume 66, Issue 4, November 1952, pp. 545-556.
- Boeschotten Willem C. and Martin M. G. Fase (1992): "The Demand for Large Bank Notes", *Journal of Money, Credit and Banking*, Vol. 24, No. 3, August 1992, pp. 319-337.
- Humphrey David, Aris Kaloudis and Grete Øwre (2000): "Forecasting Cash Use in Legal and Illegal Activities". Working paper 2000/14, Norges Bank, Oslo.
- Kaloudis Aris and Ola Storberg (2000): "Kontantenes plass i det norske betalingsystemet" ("The role of cash in the Norwegian payment system"). *Penger og Kreditt*, no. 4/2000, pp. 263-268.
- Norges Bank (2000): *Annual Report on Payment Systems for 2000*, Norges Bank, Oslo.
- Rogoff, Kenneth (1998): "Blessing or curse? Foreign and underground demand for Euro notes", *Economic Policy*, 26, pp. 263-303.
- Skattedirektoratet (1999): *Kunnskap om den svarte økonomien (Knowledge about the black economy)*. Status report to the Ministry of Finance from the Directorate of Taxes, 1 February 1999.

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Financial institution balance sheets

Table 1. Norges Bank. Balance sheet. In millions of NOK

	31/12 2000	31/7 2001	31/8 2001	30/9 2001	31/10 2001
FINANCIAL ASSETS					
Foreign assets	646 120	752 495	767 968	806 585	792 356
International reserves ^{1) 2)}	245 863	223 743	229 445	246 801	222 877
Investment of Government Petroleum Fund	386 126	515 709	525 394	546 672	556 317
Other foreign assets	14 131	13 043	13 129	13 112	13 162
Claims on Norwegian financial institutions	22 194	11 202	155	1 102	1 150
Loans to private banks	21 158	10 050	0	1	3
Other assets in the form of deposits, securities, loans and overdrafts	1 036	1 152	155	1 101	1 147
Claims on central government	13 909	12 341	12 491	11 857	12 177
Bearer bonds	10 743	8 887	8 948	9 028	9 165
Other securities	2 776	3 140	3 185	2 424	2 707
Other claims	390	314	358	405	305
Claims on other Norwegian sectors	1 306	1 055	1 178	1 180	1 121
Securities and loans	576	589	609	606	603
Other claims	730	466	569	574	518
Stock, production units	26	21	17	21	30
Fixed assets	1 939	1 838	1 836	1 834	1 829
Valuation adjustments³⁾	0	31 725	45 180	64 042	55 037
Expenses	0	9 437	10 620	11 711	12 934
Total assets	685 494	820 114	839 445	898 332	876 634
LIABILITIES AND CAPITAL					
Foreign liabilities	74 998	55 993	52 690	60 587	50 600
IMF debt in NOK	14 107	13 017	13 103	13 085	13 137
Other foreign liabilities	60 891	42 976	39 587	47 502	37 463
Notes and coins in circulation	46 952	42 839	42 026	41 591	40 969
Domestic deposits	505 837	625 754	628 652	629 697	661 563
Treasury	96 083	91 722	72 965	45 137	85 821
Government Petroleum Fund	386 126	515 709	525 394	546 672	556 317
Other public administration (excl. municipalities)	293	4 288	4 327	4 340	82
Private banks	21 647	12 821	24 455	32 130	18 021
Other financial institutions	1 591	1 057	1 410	1 308	1 226
Other Norwegian sectors	97	107	101	110	96
Accrued interest to the Treasury	0	566	975	1 312	1 690
Other domestic debt	10 955	10 812	17 415	47 962	11 277
Calculated value of SDRs in the IMF	1 934	1 926	1 904	1 921	1 877
Capital	44 818	44 818	44 818	44 818	44 818
Valuation adjustments	0	0	0	0	0
Revenues⁴⁾	0	37 406	50 965	70 444	63 820
Total liabilities and capital	685 494	820 114	839 445	898 332	876 634
Off balance-sheet items :					
Foreign currency sold forward	32 595	33 236	33 735	24 868	20 451
Foreign currency purchased forward	25 699	35 653	35 549	26 957	22 608
Derivatives sold	77 743	96 112	109 239	101 623	60 555
Derivatives purchased	83 094	114 493	128 576	135 873	70 744
Allotted, unpaid shares in the BIS	314	314	314	314	314

¹⁾ International reserves include bonds subject to repurchase agreements.

²⁾ Securities and gold are valued at fair value.

³⁾ Valuation adjustments consist mainly of unrealised loss on securities.

⁴⁾ Part of the unrealised loss on securities mentioned in footnote 3 is offset by a reduction in the NOK deposits for the Government Petroleum Fund. This appears in the accounts as income for Norges Bank

Table 2. Norges Bank. Specification of international reserves.¹⁾ In millions of NOK

	31/12 2000	31/7 2001	31/8 2001	31/9 2001	31/10 2001
Gold	2 275	2 297	2 287	2 460	2 343
Special drawing rights in the IMF	2 713	3 141	3 149	3 184	3 142
Reserve position in the IMF	5 166	6 175	5 868	6 054	5 763
Loans to the IMF	1 269	1 256	1 242	1 236	1 212
Bank deposits abroad	73 397	54 731	67 015	97 246	66 950
Foreign Treasury bills	-	-	-	-	-
Foreign bearer bonds ²⁾	157 893	133 192	128 168	116 712	119 269
Foreign shares	-	20 402	19 075	17 328	21 571
Accrued interest	3 190	2 604	2 715	2 638	2 719
Short-term assets	-40	-54	-73	-57	-91
Total	245 863	223 743	229 445	246 801	222 876

¹⁾ Securities are valued at fair value as from December 1999.

²⁾ Includes bonds subject to repurchase agreements.

Source: Norges Bank

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

	30/9 2000	31/12 2000	31/3 2001	30/6 2001	30/9 2001
Cash holdings and bank deposits	2 602	3 007	3 000	2 697	2 802
Total loans	168 556	169 936	173 625	175 530	176 942
Of which:					
To the general public ¹⁾	166 698	167 921	171 582	173 514	174 919
Claims on the central government and social security administrations	-	-	-	-	-
Other assets	8 352	6 941	8 658	7 660	6 240
Total assets	179 510	179 884	185 283	185 887	185 984
Bearer bond issues	61	57	55	51	49
Of which:					
In Norwegian kroner	61	57	55	51	49
In foreign currency	-	-	-	-	-
Other loans	168 212	168 870	173 288	175 272	174 064
Of which:					
From the central government and social security administrations	168 212	168 870	173 288	175 272	174 064
Other liabilities, etc.	5 799	5 502	6 317	4 916	6 116
Share capital, reserves	5 438	5 455	5 623	5 648	5 755
Total liabilities and capital	179 510	179 884	185 283	185 887	185 984

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

Sources: Statistics Norway and Norges Bank

Table 4. Commercial and savings banks.¹⁾ Balance sheet. In millions of NOK

	30/9 2000	31/12 2000	31/3 2001	30/6 2001	30/9 2001
Cash	4 269	4 879	4 183	5 058	4 735
Deposits with Norges Bank	36 561	22 654	11 061	12 736	32 773
Deposits with commercial and savings banks	18 913	16 524	24 642	23 642	19 012
Deposits with foreign banks	34 797	49 487	52 540	64 199	54 652
Treasury bills	6 530	7 892	6 548	5 637	5 040
Other short-term paper	11 306	15 047	20 081	17 049	20 493
Government bonds etc. ¹⁾	6 990	9 211	9 209	6 351	5 258
Other bearer bonds	64 042	66 880	76 798	85 715	85 858
Loans to foreign countries	52 602	48 895	54 268	50 715	54 502
Loans to the general public ²⁾	924 547	938 076	962 580	987 543	1 007 913
Of which:					
In foreign currency	87 961	80 361	78 522	83 082	84 085
Loans to mortgage and finance cos., insurance etc. ³⁾	67 795	69 587	71 693	76 772	76 531
Loans to central government and social security admin.	39 304	21 780	47 120	17 453	44 642
Other assets ⁴⁾	97 588	81 818	95 988	95 781	94 503
Total assets	1 365 244	1 352 730	1 436 711	1 448 651	1 505 912
Deposits from the general public ²⁾	634 566	646 066	657 159	683 858	679 493
Of which:					
In foreign currency	23 621	22 594	26 479	27 141	25 764
Deposits from commercial and savings banks	20 176	17 527	26 635	26 168	27 143
Deposits from mortgage and fin. cos., and ins. etc. ³⁾	34 156	32 254	35 160	39 352	37 634
Deposits from central government, social security admin. and state lending institutions	46 687	26 160	52 163	21 596	49 774
Funds from CDs	82 897	79 644	86 926	84 991	87 612
Loans and deposits from Norges Bank	1 260	24 676	4 494	16 640	2
Loans and deposits from abroad	170 514	158 654	170 876	11 425	10 167
Other liabilities	277 896	266 481	303 438	460 412	508 650
Share capital/primary capital	24 300	24 821	25 339	25 401	25 182
Allocations, reserves etc.	62 526	63 928	71 660	71 656	71 390
Net income	10 246	12 519	2 861	7 152	8 865
Total liabilities and capital	1 365 244	1 352 730	1 436 711	1 448 651	1 505 912
Specifications:					
Foreign assets	125 769	136 823	153 235	164 494	155 570
Foreign debt	337 555	327 595	352 616	340 075	379 535

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 sector.¹⁾ In millions of NOK

	30/9 2000	31/12 2000	31/3 2001	30/6 2001	30/9 2001
Loans to:					
Local government (incl. municipal enterprises)	13 588	14 421	12 514	12 482	12 533
Non-financial enterprises ²⁾	333 175	331 323	346 454	351 578	355 565
Households ³⁾	577 784	592 332	603 612	623 483	639 815
Total loans to the general public	924 547	938 076	962 580	987 543	1 007 913
Deposits from:					
Local government (incl. municipal enterprises)	36 149	42 741	38 893	46 609	42 455
Non-financial enterprises ²⁾	199 872	203 199	206 068	202 920	209 155
Households ³⁾	398 545	400 126	412 198	434 329	427 883
Total deposits from the private sector and municipalities	634 566	646 066	657 159	683 858	679 493

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

	30/9 2000	31/12 2000	31/3 2001	30/6 2001	30/9 2001
Cash and bank deposits	8 137	3 606	3 927	6 083	6 573
Notes and certificates	13 686	6 114	14 236	12 730	13 730
Government bonds ¹⁾	1 063	1 006	1 566	932	904
Other bearer bonds	31 216	26 861	38 673	48 305	43 032
Loans to:					
Financial enterprises	14 403	17 668	19 858	19 797	21 369
The general public ²⁾	133 858	143 948	144 543	149 450	154 006
Other sectors	13 010	13 839	13 028	13 786	12 775
Other assets ³⁾	751	-1 325	-2 593	-2 196	-803
Total assets	216 124	211 717	233 238	248 887	251 586
Notes and certificates	33 145	21 453	42 397	38 455	37 006
Bearer bond issues in NOK ⁴⁾	58 251	59 870	60 042	58 355	57 996
Bearer bond issues in foreign currency ⁴⁾	59 507	67 861	65 081	81 561	82 122
Other funding	50 062	46 253	50 504	54 435	57 644
Equity capital	11 393	11 036	11 319	11 327	11 457
Other liabilities	3 766	5 244	3 895	4 754	5 361
Total liabilities and capital	216 124	211 717	233 238	248 887	251 586

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⁾ Purchases of own bearer bonds deducted.

Sources: Statistics Norway and Norges Bank

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

	30/9 2000	31/12 2000	31/3 2001	30/6 2001	30/9 2001
Cash and bank deposits	1 422	1 173	1 757	2 271	1 534
Notes and certificates	-	101	97	99	99
Bearer bonds	58	54	54	39	40
Loans ¹⁾ (gross) to:	67 581	70 230	75 551	80 491	82 425
The general public ²⁾ (net)	64 487	66 813	72 080	75 348	78 095
Other sectors (net)	2 940	3 256	3 334	4 964	4 092
Other assets ³⁾	1 825	1 936	2 601	2 694	2 380
Total assets	70 886	73 494	80 060	85 594	86 478
Notes and certificates	187	57	425	575	500
Bearer bonds	323	133	115	115	115
Loans from non-banks	8 054	9 517	10 403	9 617	9 875
Loans from banks	50 803	51 830	56 415	63 004	63 180
Other liabilities	6 389	5 957	6 293	5 717	5 303
Capital, reserves	6 677	6 000	6 409	6 566	7 505
Total liabilities and capital	70 886	73 494	80 060	85 594	86 478

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

	30/6 2000	30/9 2000	31/12 2000	31/3 2001	30/6 2001
Cash and bank deposits	8 978	7 828	9 841	13 800	11 425
Norwegian notes and certificates	10 544	14 515	13 952	16 707	19 780
Foreign Treasury bills and notes	170	-	200	195	2 168
Norwegian bearer bonds	89 732	88 347	86 433	98 021	99 000
Foreign bearer bonds	68 195	72 397	74 702	77 727	81 680
Norwegian shares, units, primary capital certificates and interests	53 129	54 677	49 742	49 218	48 363
Foreign shares, units, primary capital certificates and interests	82 864	83 166	80 994	73 729	73 098
Loans to the general public ¹⁾	23 860	23 473	23 047	24 659	24 406
Loans to other sectors	916	941	867	1 034	1 037
Other specified assets	40 704	40 477	41 715	44 172	44 484
Total assets	379 092	385 821	381 493	399 262	405 441

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

Source: Statistics Norway

Table 9. Private and municipal pension funds.¹⁾ Main assets. In millions of NOK. *This table will not be updated hereafter, and after a period will cease to be published.*

	30/6 1999	30/9 1999	31/12 1999	31/3 2000	30/6 2000
Cash and bank deposits	6 043	5 872	5 533	3 797	4 909
Norwegian bearer bonds	47 077	47 553	47 253	44 770	45 510
Loans to the general public ²⁾	5 270	5 340	5 350	6 010	4 970
Other specified assets	26 213	26 792	30 472	33 661	35 700
Total assets	84 603	85 557	88 608	88 238	91 089

¹⁾ Estimates based on a selection of institutions representing about 50% of aggregate total assets.

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

Source: Norges Bank

Table 10. Non-life insurance companies. Main assets. In millions of NOK

	30/6 2000	30/9 2000	31/12 2000	31/3 2001	30/6 2001
Cash and bank deposits	6 159	6 514	6 232	6 220	6 462
Norwegian notes and certificates	4 063	3 990	3 878	3 866	3 945
Foreign notes and certificates	238	293	421	200	131
Norwegian bearer bonds	13 986	13 923	13 402	13 428	12 471
Foreign bearer bonds	13 109	14 600	14 072	13 579	12 411
Norwegian shares, units, primary capital certificates, interests	11 199	11 176	10 839	10 571	11 299
Foreign shares, units, primary capital certificates, interests	13 435	12 958	11 809	10 909	12 719
Loans to the general public ¹⁾	1 305	1 187	1 649	1 643	1 642
Loans to other sectors	144	110	102	98	115
Other specified sectors	37 169	36 856	33 097	35 744	38 848
Total assets	100 807	101 607	95 501	96 258	100 043

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

Source: Statistics Norway

Table 11a. Securities funds' assets. Market value. In millions of NOK

	30/6 2000	30/9 2000	31/12 2000	31/3 2001	30/6 2001
Bank deposits	5 186	6 019	3 977	4 348	5 025
Treasury bills, etc ¹⁾	1 604	2 158	1 820	2 286	1 576
Other Norwegian short-term paper	15 498	18 024	18 728	18 574	18 525
Foreign short-term paper	-	-	-	-	-
Government bonds, etc. ²⁾	3 027	2 953	3 772	3 771	2 919
Other Norwegian bonds	13 706	14 087	17 871	20 662	22 030
Foreign bonds	1 995	2 167	2 114	1 944	2 185
Norwegian equities	48 248	49 187	43 910	41 202	41 723
Foreign equities	46 505	52 037	49 480	43 336	45 909
Other assets	1 423	1 692	1 652	1 465	1 496
Total assets	137 151	148 325	143 324	137 588	141 387

Sources: Norwegian Central Securities Depository and Norges Bank

Table 11b. Securities funds' assets under management by holding sector. Market value. In millions of NOK

	30/6 2000	30/9 2000	31/12 2000	31/3 2001	30/6 2001
Central government and social security administration	355	390	399	407	355
Commercial and savings banks	1 835	3 110	3 390	3 876	4 032
Other financial corporations	11 737	11 613	11 689	11 784	11 280
Local government corporations and municipal enterprises	5 044	5 038	5 424	5 906	6 496
Other corporations	28 237	30 680	30 224	28 113	29 038
Households	86 487	93 791	88 556	84 010	86 579
Rest of the world	2 355	2 603	2 542	2 393	2 508
Mutual funds shares in total	136 049	147 224	142 224	136 488	140 287

Sources: Norges Bank and the Norwegian Central Securities Depository

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

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

Securities statistics

Table 12. Shareholdings registered with the Norwegian Central Securities Depository (VPS) by holding sector. Market value. In millions of NOK

Holding sector	30/6 2000	30/9 2000	31/12 2000	31/3 2001	30/6 2001
Central government and social security administration	95 110	100 479	144 983	141 244	260 012
Norges Bank	0	0	0	0	0
State lending institutions	18	17	17	25	29
Savings banks	3 079	3 272	3 404	3 339	3 515
Commercial banks	11 327	12 104	8 869	10 942	10 268
Insurance companies	53 587	54 559	47 616	42 836	41 267
Mortgage companies	170	192	167	183	175
Finance companies	7	6	6	6	6
Mutual funds	48 371	50 009	43 782	40 815	41 184
Other financial enterprises	36 867	36 853	20 489	30 009	36 575
Local government administration and municipal enterprises	3 408	3 449	2 944	3 043	2 775
State enterprises	29 669	27 403	29 111	9 114	9 998
Other private enterprises	161 082	174 126	159 808	169 242	184 572
Wage-earning households	58 172	64 647	58 390	57 073	70 781
Other households	4 869	4 471	3 371	3 521	3 905
Rest of the world	210 026	243 594	259 156	252 512	307 045
Unspecified sector	1 298	1 540	1 832	1 760	1 570
Total	717 059	776 722	783 947	765 663	973 678

Sources: Norwegian Central Securities Depository and Norges Bank

Table 13. Share capital and primary capital certificates registered with the Norwegian Central Securities Depository by issuing sector. Nominal value. In millions of NOK

Issuing sector	30/6 2000	30/9 2000	31/12 2000	31/3 2001	30/6 2001
Savings banks	8 965	8 981	8 986	8 986	8 986
Commercial banks	14 703	14 708	15 229	15 292	15 562
Insurance companies	978	978	1 018	886	886
Mortgage companies	1 955	1 955	1 955	1 955	1 955
Finance companies	64	64	64	64	64
Other financial enterprises	11 799	11 809	11 980	12 048	12 131
Local government administration and municipal enterprises	2	2	2	2	2
State enterprises	7 090	7 091	18 279	12 947	18 421
Other private enterprises	38 892	39 791	44 142	47 285	47 462
Rest of the world	5 909	6 427	6 210	6 668	7 685
Unspecified sector	0	0	2	0	0
Total	90 356	91 805	107 867	106 133	113 154

Sources: Norwegian Central Securities Depository and Norges Bank

Table 14. Net purchases and net sales (-) in the primary and secondary markets for shares registered with the Norwegian Central Securities Depository, by purchasing, selling and issuing sector¹⁾. Estimated market value. In millions of NOK

2001 Q2	Purchasing/ selling sector																	Total ²⁾
	Cent. gov and social security	Norges Bank	State lending inst.	Savings banks	Com-mercial banks	Insur. com-pa-nies	Mortg. com-pa-nies	Finance com-pa-nies	Securi-ties funds	Other finan-cial enterpr.	Local gov and munic. enterpr.	State enterpr.	Other private enterpr.	Wage-earning house-holds	Other house-holds	Rest of the world	Unspec. sector	
Issuing sector																		
Commercial banks	1	0	0	23	-24	1	0	0	-52	175	-1	0	41	-82	-3	149	5	232
Insurance companies	0	0	0	0	0	0	0	0	0	0	2	0	-3	0	0	0	0	0
Mortgage companies	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	-1	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.	-4 535	0	0	105	1 234	-439	4	0	-214	490	40	34	646	185	31	2 563	16	162
Local govt. admin. and municipal enterprises	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	-1	0
State enterprises	-19 225	0	0	6	28	1 045	-3	0	956	140	30	64	375	1420	25	28 315	26	13 202
Other private enterprises	201	0	0	-10	-278	-2 649	9	0	-532	-1 908	128	-2 309	3 024	-375	210	12 050	206	7 768
Rest of the world	189	0	0	24	8 796	-1 423	-3	0	1 815	-1 249	-12	-21	-404	-1 000	-2	-1 941	-41	1 098
Unspecified sector	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-23 368	0	0	148	9 756	-3 464	7	0	-1 657	-2 352	189	-2 232	3 680	148	260	41 136	212	22 462

¹⁾ Issues at issue price + purchases at market value – sales at market value – 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 15. Bondholdings in NOK registered with the Norwegian Central Securities Depository by holding sector. Market value. In millions of NOK

Holding sector	30/6 2000	30/9 2000	31/12 2000	31/3 2001	30/6 2001
Central government and social security administration	30 063	28 200	29 283	28 274	28 601
Norges Bank	7 586	8 015	8 297	10 148	7 625
State lending institutions	275	282	266	257	241
Savings banks	20 834	23 379	24 987	26 602	24 741
Commercial banks	34 317	34 072	37 758	39 327	39 737
Insurance companies	156 451	154 775	150 773	153 860	153 099
Mortgage companies	14 932	14 482	15 276	15 831	14 311
Finance companies	10	5	5	5	7
Mutual funds	17 139	17 497	22 262	24 899	25 460
Other financial enterprises	2 149	1 510	1 347	1 711	1 462
Local government administration and municipal enterprises	10 420	10 030	10 668	10 556	10 441
State enterprises	2 777	2 729	2 923	3 098	3 150
Other private enterprises	22 785	24 175	22 663	23 418	21 870
Wage-earning households	7 581	8 394	12 831	11 092	12 841
Other households	3 932	4 392	4 246	4 270	4 567
Rest of the world	51 795	59 871	69 674	69 936	62 187
Unspecified sector	714	853	957	762	795
Total	383 762	392 660	414 216	424 048	411 135

Sources: Norwegian Central Securities Depository and Norges Bank

Table 16. Bondholdings in NOK registered with the Norwegian Central Securities Depository by issuing sector. Nominal value. In millions of NOK

Issuing sector	30/6 2000	30/9 2000	31/12 2000	31/3 2001	30/6 2001
Central government and social security administration	139 635	141 511	144 163	148 052	126 354
State lending institutions	358	347	326	316	295
Savings banks	36 471	43 541	48 319	51 964	55 399
Commercial banks	51 917	52 036	57 105	56 147	62 005
Insurance companies	888	819	819	819	994
Mortgage companies	69 337	67 327	67 847	67 686	67 141
Finance companies	483	483	93	75	75
Other financial enterprises	2 400	1 900	2 300	2 300	2 300
Local government administration and municipal enterprises	41 149	41 189	47 225	49 211	50 404
State enterprises	15 911	17 607	18 509	14 904	15 496
Other private enterprises	21 811	23 437	22 507	29 471	30 893
Households	30	30	27	27	27
Rest of the world	6 355	7 122	6 892	6 931	7 586
Unspecified sector	0	0	0	0	0
Total	386 747	397 349	416 132	427 901	418 968

Sources: Norwegian Central Securities Depository and Norges Bank

Table 17. 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⁾ 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.	Savings banks	Com-mercial banks	Insur. com-pa-nies	Mortg. com-pa-nies	Finance com-pa-nies	Securi-ties funds	Other finan-cial enterpr.	Local gov't and munic. enterpr.	State enterpr.	Other private enterpr.	Wage-earning house-holds	Other house-holds	Rest of the world	Unspec. sector	
Central government and social security admin.	-654	-425	0	-1 780	-541	-4 592	-647	0	-758	209	-483	-35	-858	-100	-26	-7 123	1	-17 812
State lending institutions	0	0	-26	-4	-2	0	0	0	0	0	0	0	0	0	0	0	0	-32
Savings banks	628	0	0	-435	1 378	2 195	-369	5	1 919	-20	584	-14	160	866	194	6	80	7 179
Commercial banks	-402	0	0	-739	845	1 786	97	0	1 017	-1	87	20	312	1 493	60	518	119	5 213
Insurance companies	10	0	0	20	0	20	3	0	33	1	10	0	47	0	24	5	2	175
Mortgage companies	54	0	0	351	-783	541	-282	-3	25	-18	82	-38	27	-80	38	-609	9	-686
Finance companies	0	0	0	0	-5	0	0	0	-9	0	0	0	0	0	0	-4	0	-18
Other financial enterprises	0	0	0	-7	-27	25	0	0	-2	0	4	0	7	0	0	0	0	0
Loc. gov't. adm.+ mun. ent.	40	0	0	-182	1 199	1 626	264	0	47	29	-590	-107	-39	-12	3	1 122	2	3 401
State enterprises	-15	0	0	26	290	941	-32	0	-26	13	-16	540	9	0	3	154	0	1 887
Other private enterprises	98	0	0	1 241	29	515	102	0	1 141	-15	9	88	174	55	62	-38	24	3 486
Households	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rest of the world	0	0	0	-19	-3	533	0	0	101	17	14	0	-5	13	0	1	0	-656
Unspecified sector	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-241	-425	-26	1 528	2 382	3 590	864	2	3 488	215	-298	454	-166	2 234	359	-5 968	240	3 449

¹⁾ Issues at issue price + purchases at market value – sales at market value – 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 18. NOK-denominated short-term paper registered with the Norwegian Central Securities Depository by holding sector. Market value. In millions of NOK

	30/6 2000	30/9 2000	31/12 2000	31/3 2001	30/6 2001
Central government and social security administration	8 456	7 307	7 354	8 465	8 248
Norges Bank	2 246	2 626	2 816	3 010	1 687
State lending institutions	0	0	0	0	0
Savings banks	8 874	6 575	6 716	7 821	8 340
Commercial banks	19 132	12 483	16 662	23 814	17 177
Insurance companies	18 441	21 868	24 261	23 341	30 290
Mortgage companies	2 358	2 380	1 816	1 667	789
Finance companies	39	54	91	92	98
Mutual funds	17 575	20 616	21 157	21 482	20 841
Other financial enterprises	336	522	281	1 702	1 508
Local government administration and municipal enterprises	1 899	3 167	3 665	6 340	4 501
State enterprises	4 027	12 411	4 596	2 585	4 978
Other private enterprises	10 977	9 108	9 565	20 112	10 282
Wage-earning households	276	337	415	385	292
Other households	503	563	526	409	484
Rest of the world	5 876	3 648	7 632	10 147	11 084
Unspecified sector	635	641	233	865	458
Total	101 651	104 308	107 786	132 236	121 057

Sources: Norwegian Central Securities Depository and Norges Bank

Table 19. Outstanding short-term paper by issuing sector.¹⁾ Nominal value. In millions of NOK

	30/9 2000	31/12 2000	31/3 2001	30/6 2001	30/9 2001
Central government and social security administration	24 000	31 000	35 500	32 500	35 500
Counties	699	603	883	1 064	2 389
Municipalities	3 752	5 074	4 481	3 155	3 267
State lending institutions	0	0	0	0	0
Commercial banks	15 334	10 364	18 568	17 905	19 724
Savings banks	32 680	36 842	38 613	35 339	38 090
Mortgage companies	5 086	4 704	8 747	7 082	9 177
Finance companies	187	557	525	575	500
Other financial enterprises	0	0	0	0	0
State enterprises	5 095	2 015	1 940	1 800	3 900
Municipal enterprises	7 085	8 243	9 841	10 264	10 953
Private enterprises	8 355	9 124	10 761	11 610	11 530
Rest of the world	650	1 000	1 230	2 540	2 040
Total	102 922	109 526	131 089	123 834	137 069

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 20. Inter-company loans. Amounts outstanding. In billions of NOK. *This table will not be updated hereafter, and after a period will cease to be published.*

	30/9 1999	31/12 1999	31/3 2000	30/6 2000	30/9 2000
Guaranteed by:					
Private finance companies	0.1	0.1	0.1	0.1	0.1
Non-life/credit insurance companies	0.1	0.1	0.1	0.1	0.1
Commercial banks	1.4	1.4	1.4	1.4	1.4
Savings banks	1.4	1.4	1.4	1.4	1.4
Loans with guarantee	3.0	3.0	3.0	3.0	3.0
Loans without guarantee arranged by:					
Broker	0.1	0.1	0.1	0.1	0.1
Bank	0.0	0.0	0.0	0.0	0.0
Total inter-company loans	3.2	3.1	3.1	3.1	3.1

Source: Norges Bank

Table 21. Credit indicator and money supply

	Volume figures at end of period NOKbn			Percentage growth				
				Over past 12 months			Over past 3 months annualised rate	
	C2 ¹⁾	C3 ²⁾	M2 ³⁾	C2 ¹⁾	C3 ²⁾	M2 ³⁾	C2 ¹⁾	M2 ³⁾
1992								
December	886.7	1 069.5	479.5	-3.3	-1.7	..	-2.2	..
1993								
December	875.5	1 074.1	475.7	-1.8	-1.7	-0.9	0.0	2.1
1994								
December	891.6	1 075.8	500.4	2.3	1.3	5.1	2.8	2.6
1995								
December	934.5	1 123.6	529.1	4.9	5.2	5.7	5.4	2.3
1996								
December	993.6	1 215.4	563.4	6.2	5.4	6.4	7.8	5.4
1997								
December	1 100.9	1 362.9	577.7	10.2	10.0	2.5	10.1	4.0
1998								
December	1 195.3	1 542.0	604.6	8.3	12.2	4.6	6.7	6.6
1999								
December	1 297.7	1 674.2	670.8	8.3	7.8	10.9	10.0	10.3
2000								
February	1 321.9	1 698.4	677.6	8.9	7.3	10.0	11.1	8.6
March	1 335.0	1 724.3	684.6	9.5	7.8	10.2	11.8	10.7
April	1 354.6	1 761.7	691.3	10.5	8.1	11.0	11.9	10.9
May	1 366.0	1 764.7	697.2	10.2	7.4	12.0	12.0	12.2
June	1 375.9	1 774.0	704.6	10.5	8.1	10.6	12.1	11.6
July	1 394.9	1 802.4	708.7	11.1	8.6	9.5	12.6	10.8
August	1 410.3	1 850.6	713.5	11.6	10.7	10.2	13.3	10.9
September	1 428.5	1 877.6	725.6	12.0	11.7	12.7	12.8	9.3
October	1 437.1	1 899.5	718.6	11.5	11.2	8.5	12.9	9.1
November	1 458.9	1 909.0	729.3	12.6	11.9	10.7	12.0	6.0
December	1 464.4	1 892.5	731.4	12.4	11.4	9.0	12.7	9.3
2001								
January	1 481.3	1 892.0	745.6	12.2	10.6	10.9	11.8	10.3
February	1 497.8	1 907.7	750.6	12.4	11.0	10.7	11.5	13.5
March	1 508.3	1 918.5	753.2	12.0	10.2	10.1	10.4	8.9
April	1 518.7	1 949.3	749.9	11.6	10.5	8.6	9.3	7.6
May	1 528.5	1 972.9	765.7	11.3	11.3	10.0	8.5	5.8
June	1 539.3	1 986.5	765.5	11.1	10.9	8.6	8.1	8.6
July	1 549.7	1 981.2	769.6	10.6	9.7	8.6	9.0	6.8
August	1 561.0	1 972.5	771.2	10.6	7.2	8.1	9.7	6.1
September	1 574.3	1 981.3	774.6	10.2	6.1	6.7	10.1	4.3
October	1 583.6	...	779.1	10.2	...	8.4	...	...

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

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

3) M2 = Money supply; seasonally adjusted figures.

Source: Norges Bank

Table 22. Domestic credit supply to the general public ¹⁾, by source. In millions of NOK. 12-month growth as a percentage.

	31/12/1998		31/12/1999		31/12/2000		31/10/2001	
	Amount	%	Amount	%	Amount	%	Amount	%
Private banks	747 061	8.7	819 535	9.5	938 076	13.8	1 015 402	9.4
State lending institutions	180 020	4.4	189 651	5.3	167 921	3.9	176 075	5.2
Norges Bank	532	3.9	566	6.4	575	1.6	603	4.0
Mortgage companies	94 964	31.5	93 270	-2.5	144 846	20.4	155 267	14.9
Finance companies	45 770	22.8	58 806	28.4	66 809	12.1	78 013	15.0
Life insurance companies	28 253	-15.4	25 062	-11.3	23 047	-8.0	24 410	-1.4
Pension funds	4 614	0.6	4 993	8.2	4 659	-6.7	3 263	-1.0
Non-life insurance companies	3 272	-16.9	1 321	-59.6	1 648	24.8	1 640	22.4
Bond debt ²⁾	75 231	4.0	77 413	2.9	85 113	9.9	90 616	13.9
Certificate debt	10 580	-31.5	19 335	82.8	25 059	29.6	30 517	21.0
Other sources	4 729	22.7	7 175	51.7	6 038	27.4	9 889	81.2
Total domestic credit (C2) ³⁾	1 195 026	8.3	1 297 127	8.3	1 463 791	12.4	1 585 695	10.2

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

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

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

Source: Norges Bank

Table 23. 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 last 12 months in total M2
1992	32 452	157 852	190 304	290 667	828	481 799	..
1993	35 741	151 128	186 869	288 447	2 260	477 576	-4 223
1994	37 945	172 639	210 584	286 228	5 116	501 928	24 352
1995	39 092	178 690	217 782	296 778	15 731	530 291	28 363
1996	40 110	207 682	247 792	294 926	21 686	564 404	34 113
1997	42 262	227 440	269 702	278 889	30 200	578 791	14 387
1998	42 143	237 046	279 789	293 085	33 308	605 583	26 792
1999	43 376	300 559	343 935	296 238	31 392	671 564	65 981
2000							
October	38 130	330 628	368 758	322 120	30 370	721 249	56 559
November	39 008	331 516	370 524	318 192	29 935	718 652	69 348
December	42 524	330 723	373 247	324 506	34 338	732 092	60 528
2001							
January	39 399	336 194	375 593	340 759	33 354	749 706	73 820
February	38 689	339 800	378 489	343 531	33 920	755 940	72 972
March	38 324	334 396	372 720	339 894	39 661	752 275	68 737
April	38 433	328 323	366 756	339 997	33 957	740 671	58 524
May	38 507	339 233	377 740	344 153	34 742	756 636	68 563
June	39 155	333 409	372 564	365 327	37 801	775 693	61 144
July	38 422	325 298	363 720	375 651	34 095	773 467	61 092
August	37 736	311 390	349 126	386 447	36 510	772 084	58 019
September	37 380	327 459	364 839	370 324	41 868	777 032	48 807
October	36 879	324 462	361 341	383 766	36 572	781 680	60 431

¹⁾ The narrow money concept M1 constitutes the money-holding sector's stock of Norwegian notes and coins plus the sector's transaction accounts 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⁾ The broad money concept M2 constitutes the sum of M1 and the money-holding sector's other bank deposits (in NOK and foreign currency) excluding restricted bank deposits (BSU, IPA, withholding tax accounts, etc) and CDs.

Source: Norges Bank

Table 24. Household financial balance. Financial investments and holdings, by financial instrument. In billions of NOK

	Financial investments			Financial investments		Holdings			Holdings	
	Year			Q2		Year			30 June	
	1998	1999	2000	2000	2001	1998	1999	2000	2000	2001
Bank deposits, etc. ¹⁾	22.7	33.6	32.8	30.1	30.9	372.5	406.3	439.2	436.4	470.1
Bonds, etc. ²⁾	0.5	2.2	7.8	1.9	2.4	8.4	10.9	18.2	12.4	18.3
Shares, etc. ³⁾	22.3	2.2	14.1	7.9	8.6	144.5	168.1	185.8	181.1	190.9
Units in securities funds	-0.2	7.0	11.9	6.5	1.7	50.0	77.9	93.3	90.4	92.5
Insurance claims	20.7	20.1	28.9	13.9	11.6	369.1	428.5	454.4	446.3	461.9
Loans and other assets ⁴⁾	10.9	6.1	3.2	-1.4	5.1	94.5	102.6	105.8	101.2	110.9
Total assets	76.8	71.1	98.6	59.0	60.4	1 041.1	1 194.3	1 296.6	1 267.8	1 344.7
Loans from commercial and savings banks	34.2	49.9	66.7	32.9	31.2	475.2	525.3	592.3	558.3	623.5
Loans from state banks and Norges Bank	6.7	6.1	6.1	4.3	7.3	128.6	134.3	139.9	138.4	146.9
Loans from private mortgage companies and finance companies	9.6	0.4	6.1	2.1	6.6	46.7	47.1	53.5	49.3	60.0
Loans from insurance companies	-5.5	-3.9	-2.4	-1.1	-0.3	23.1	19.2	16.7	18.1	16.4
Other liabilities ⁵⁾	8.6	0.6	-0.1	-0.2	-2.4	75.5	75.1	74.4	74.6	71.8
Total liabilities	53.6	53.1	76.3	38.0	42.3	749.1	801.0	876.9	838.7	918.6
Net	23.2	18.0	22.3	21.0	18.1	292.0	393.2	419.7	429.1	426.2

¹⁾ Notes and coins and bank deposits.

²⁾ Bearer bonds, savings bonds, premium bonds, notes and short-term Treasury notes.

³⁾ VPS-registered (registered with the Norwegian Central Securities Depository) and non-registered shares.

⁴⁾ Loans, accrued interest, holiday pay claims and tax claims.

⁵⁾ Other loans, bonds and notes, tax liabilities, and accrued interest.

Sources: Statistics Norway and Norges Bank

Table 25. Money market liquidity. Liquidity effect from 1 January to end period. In millions of NOK

Supply+/withdrawal-	1/1-31/12		1/1-31/8		1/1-30/11	
	1999	2000	2000	2001	2000	2001
Central govt. and other public accounts (excl. paper issued by state lending inst. and govt.)	4 870	-50 855	-1 385	-58 385	-50 609	-115 042
Paper issued by state lending inst. and govt.	-2 702	-11 103	-9 406	11 236	-8 347	12 673
Purchase of foreign exchange for Govt Petroleum Fund	11 321	53 010	28 430	74 300	46 390	115 720
Other foreign exchange transactions	-88	368	368	30	368	91
Holdings of banknotes and coins ¹⁾ (estimate)	-1 800	775	5 028	5 014	5050	4 801
Overnight loans	-110	245	110	-100	167	155
Fixed-rate loans	13 499	-4 425	-25 576	-21 151	-11 576	-21 151
Other central bank financing	648	340	-19 024	-22 135	-7 795	-8 135
Total reserves	25 638	-11 645	-21 455	-11 195	-26 352	-10 888
Of which:						
Sight deposits with Norges Bank	25 638	-11 645	-21 455	-11 195	-26 352	-10 888
Short-term Treasury notes	0	0	0	0	0	0
Other reserves (estimate)	0	0	0	0	0	0

¹⁾ The figures are based mainly 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 26. Nominal interest rates for NOK. Averages. Per cent per annum

	1-month		3-month		12-month		Interest rate on banks' over- night loans in Norges Bank	Interest rate on banks' sight deposits with Norges Bank
	NIDR	NIBOR	NIDR	NIBOR	NIDR	NIBOR		
2000								
November	7.4	7.3	7.6	7.4	7.7	7.5	9.0	7.0
December	7.6	7.5	7.6	7.4	7.5	7.3	9.0	7.0
2001								
January	7.5	7.4	7.6	7.4	7.4	7.2	9.0	7.0
February	7.4	7.2	7.5	7.3	7.4	7.2	9.0	7.0
March	7.5	7.3	7.5	7.4	7.5	7.4	9.0	7.0
April	7.6	7.5	7.6	7.5	7.5	7.4	9.0	7.0
May	7.6	7.4	7.6	7.4	7.6	7.5	9.0	7.0
June	7.4	7.3	7.6	7.4	7.7	7.6	9.0	7.0
July	7.4	7.3	7.5	7.4	7.6	7.5	9.0	7.0
August	7.4	7.2	7.5	7.3	7.5	7.3	9.0	7.0
September	7.3	7.1	7.3	7.1	7.2	7.0	9.0	7.0
October	7.2	7.1	7.1	6.9	6.8	6.6	9.0	7.0
November	7.2	7.1	7.1	6.9	6.6	6.4	9.0	7.0

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

	DEM	DKK	FIM	FRF	GBP	JPY	SEK	USD	EUR	Interest rate differential NOK/EUR
2000										
November	..	5.4	..	..	6.0	0.6	3.9	6.7	5.1	2.3
December	..	5.3	..	..	5.9	0.6	4.1	6.5	4.9	2.4
2001										
January	..	5.3	..	..	5.7	0.5	4.1	5.7	4.7	2.6
February	..	5.2	..	..	5.7	0.4	4.0	5.3	4.7	2.5
March	..	5.1	..	..	5.5	0.2	4.0	4.9	4.7	2.6
April	..	5.0	..	..	5.3	0.1	4.0	4.6	4.7	2.7
May	..	5.0	..	..	5.2	0.1	4.0	4.0	4.6	2.7
June	..	4.9	..	..	5.2	0.1	4.3	3.8	4.4	2.9
July	..	4.8	..	..	5.2	0.1	4.4	3.7	4.5	2.8
August	..	4.7	..	..	4.9	0.1	4.3	3.5	4.3	2.9
September	..	4.3	..	..	4.6	0.1	4.1	3.0	4.0	3.1
October	..	3.9	..	..	4.4	0.1	3.8	2.4	3.6	3.3
November	..	3.6	..	..	3.9	0.1	3.8	2.1	3.4	3.4

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

Sources: OECD and Norges Bank

Table 28. Yields on Norwegian bonds¹⁾. Per cent per annum

	3-year		5-year		10-year	
	Govt.	Private	Govt.	Private	Govt.	Private
2000						
November	6.7	7.4	6.4	7.5	6.2	7.3
December	6.4	6.9	6.1	7.0	6.0	7.0
2001						
January	6.4	6.9	6.1	6.9	5.9	6.9
February	6.4	7.0	6.2	6.9	6.0	7.0
March	6.6	7.1	6.3	7.0	6.0	7.0
April	6.7	7.1	6.4	7.1	6.2	7.1
May	6.8	7.3	6.6	7.3	6.5	7.3
June	6.9	7.5	6.8	7.4	6.6	7.4
July	6.9	7.4	6.7	7.4	6.6	7.4
August	6.7	7.2	6.5	7.1	6.5	7.2
September	6.4	7.0	6.4	7.0	6.4	7.1
October	6.0	6.6	6.0	6.7	6.1	6.8
November	5.8	6.5	5.8	6.5	5.9	6.6

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

	DEM	DKK	FIM	FFR	GBP	JPY	SEK	USD	Interest rate differential NOK/DEM ²⁾
2000									
November	5.2	5.6	5.5	5.3	5.1	1.8	5.2	5.9	1.0
December	5.0	5.3	5.2	5.1	4.9	1.6	5.0	5.6	1.0
2001									
January	4.9	5.2	5.1	4.9	4.9	1.5	5.0	5.7	1.1
February	4.9	5.1	5.1	4.9	4.9	1.4	4.7	5.6	1.1
March	4.8	5.0	5.0	4.8	4.8	1.2	4.8	5.2	1.3
April	4.9	5.2	5.2	5.0	4.9	1.4	5.0	5.2	1.3
May	5.1	5.4	5.4	5.2	5.1	1.3	5.3	5.4	1.4
June	5.1	5.4	5.3	5.1	5.2	1.2	5.5	5.3	1.5
July	5.1	5.4	5.3	5.1	5.1	1.3	5.5	5.2	1.5
August	4.9	5.2	5.1	5.0	4.9	1.4	5.2	5.1	1.5
September	4.9	5.2	5.1	4.9	4.9	1.4	5.3	4.9	1.5
October	4.7	4.9	4.9	4.7	4.8	1.4	5.2	4.6	1.4
November	4.5	4.7	4.8	4.6	4.6	1.3	5.0	4.7	1.3

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.

Source: Norges Bank

Table 30. Commercial and savings banks. Average interest rates and commissions on utilised loans in NOK to the general public¹⁾ at end of quarter. Per cent per annum

	All loans				Loans, excl. non-accrual loans ²⁾				
	Credit lines	Repayment loans		Total loans	Credit lines	Repayment loans		Total loans	
	Overdrafts and building loans	Housing loans	Other loans		Overdrafts and building loans	Housing loans	Other loans		
2000 Q3									
Commercial banks	10.08	7.95	8.32	8.34	10.18	7.96	8.37	8.38	
Savings banks	11.30	8.22	8.99	8.70	11.44	8.22	9.03	8.72	
All banks	10.58	8.10	8.62	8.52	10.70	8.10	8.67	8.55	
2000 Q4									
Commercial banks	10.71	8.36	8.57	8.72	10.80	8.37	8.64	8.75	
Savings banks	11.77	8.60	9.30	9.06	11.96	8.61	9.37	9.09	
All banks	11.15	8.50	8.90	8.89	11.28	8.51	8.97	8.93	
2001 Q1									
Commercial banks	10.42	8.35	8.53	8.68	10.46	8.35	8.61	8.71	
Savings banks	11.68	8.62	9.33	9.08	11.87	8.62	9.39	9.11	
All banks	10.93	8.50	8.89	8.88	11.03	8.51	8.96	8.92	
2001 Q2									
Commercial banks	10.68	8.38	8.52	8.72	10.73	8.39	8.62	8.76	
Savings banks	11.71	8.59	9.32	9.06	11.92	8.60	9.38	9.09	
All banks	11.10	8.50	8.88	8.89	11.21	8.51	8.96	8.93	
2001 Q3									
Commercial banks	10.65	8.39	8.43	8.68	10.77	8.40	8.49	8.72	
Savings banks	11.59	8.59	9.27	9.03	11.77	8.59	9.34	9.06	
All banks	11.04	8.50	8.81	8.86	11.19	8.51	8.87	8.90	

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

²⁾ Non-accrual loans for which interest accruals, commissions and charges have been suspended.

Source: Norges Bank

Table 31. Commercial and savings banks. Average interest rates on deposits in NOK at end of quarter. Per cent per annum

	Ordinary terms	Special terms	Total deposits	Sight deposits	Time deposits	Deposits on transaction accounts	Other deposits
2000 Q3							
Commercial banks	5.14	6.66	5.46	5.09	6.54		
Savings banks	4.96	6.53	5.32	4.85	6.30		
All banks	5.05	6.57	5.39	4.98	6.38		
2000 Q4							
Commercial banks	5.58	6.91	5.83	5.53	6.84		
Savings banks	5.44	6.91	5.78	5.34	6.67		
All banks	5.52	6.91	5.81	5.44	6.73		
2001 Q1							
Commercial banks	5.65	6.91	5.88	5.59	6.86		
Savings banks	5.47	6.92	5.82	5.36	6.73		
All banks	5.56	6.92	5.85	5.48	6.77		
2001 Q2							
Commercial banks	...	...	5.85	...	...	5.17	6.50
Savings banks	...	...	5.72	...	...	4.49	6.50
All banks	...	...	5.78	...	...	4.87	6.50
2001 Q3							
Commercial banks	...	...	5.95	...	...	5.30	6.55
Savings banks	...	...	5.79	...	...	4.63	6.47
All banks	...	...	5.87	...	...	5.02	6.51

Source: Norges Bank

Table 32. Life insurance companies. Average interest rates by type of loan at end of quarter. Per cent per annum

	Housing loans	Other loans	Total loans
2000 Q3	8.0	6.8	7.4
Q4	8.1	7.0	7.6
2001 Q1	8.1	7.0	7.6
Q2	8.1	7.2	7.6
Q3	8.1	7.2	7.6

Source: Norges Bank

Table 33. 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
2000 Q3	7.4	7.6	7.1
Q4	7.5	7.7	7.2
2001 Q1	7.5	7.7	7.3
Q2	7.6	7.7	7.4
Q3	7.6	7.7	7.4

Source: Norges Bank

Profit/loss and capital adequacy data

Table 34. Profit/loss and capital adequacy: commercial banks¹⁾. Percentage of average total assets

	1999 ³⁾	2000	Q3	
			2000	2001
Interest income	7.2	7.4	7.1	7.6
Interest expenses	5.2	5.5	5.3	5.9
Net interest income	2.0	1.8	1.8	1.8
Total other operating income	1.2	1.3	1.2	1.1
Other operating expenses	2.0	1.9	1.8	1.8
Operating profit before losses	1.2	1.2	1.1	1.1
Recorded losses on loans and guarantees	0.0	0.1	0.1	0.2
Ordinary operating profit before taxes	1.2	1.1	1.1	0.8
Capital adequacy ratio ²⁾	10.9	11.0	9.6	11.6
Of which:				
Core capital	8.0	7.8	7.3	8.6

¹⁾ Parent banks (excluding branches abroad) including Postbanken and foreign-owned branches. Excluding Gjensidige Bank from 1 January 1999.

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

³⁾ New accounting rules from 1 January 1999.

Source: Norges Bank

Table 35. Profit/loss and capital adequacy: savings banks¹⁾. Percentage of average total assets

	1999 ³⁾	2000	Q3	
			2000	2001
Interest income	7.7	7.6	7.3	8.2
Interest expenses	4.8	4.9	4.6	5.7
Net interest income	2.9	2.7	2.7	2.5
Total other operating income	1.0	0.8	0.8	0.6
Other operating expenses	2.1	2.0	1.9	1.8
Operating profit before losses	1.7	1.6	1.5	1.3
Recorded losses on loans and guarantees	0.2	0.2	0.2	0.2
Ordinary operating profit before taxes	1.6	1.8	2.0	1.2
Capital adequacy ratio ²⁾	13.6	13.7	12.3	13.1
Of which:				
Core capital	11.2	10.9	9.9	10.3

¹⁾ Including Gjensidige Bank from 1 January 1999.

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

³⁾ New accounting rules from 1 January 1999.

Source: Norges Bank

Table 36. Profit/loss and capital adequacy: finance companies¹⁾. Percentage of average total assets

	1999 ³⁾	2000	Q3	
			2000	2001
Net interest income	5.4	5.0	4.9	4.3
Total other operating income	2.6	2.3	2.3	2.6
Other operating expenses	5.0	4.7	4.6	4.4
Operating profit before losses	2.9	2.5	2.7	2.5
Recorded losses on loans and guarantees	0.6	0.5	0.4	0.5
Ordinary operating profit before taxes	2.4	2.1	2.3	2.1
Capital adequacy ratio ²⁾	12.1	12.4	12.0	11.5
Of which:				
Core capital	11.0	11.1	10.6	10.1

1) Norwegian parent and foreign-owned branches.

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

3) New accounting rules from 1 January 1999.

Source: Norges Bank

Table 37. Profit/loss and capital adequacy: mortgage companies¹⁾. Percentage of average total assets

	1999 ³⁾	2000 ⁴⁾	Q3	
			2000	2001
Interest income	6.3	6.9	6.8	6.6
Interest expenses	5.5	6.2	6.0	5.9
Net interest income	0.8	0.7	0.8	0.7
Total other operating income	0.1	0.0	0.0	-0.0
Other operating expenses	0.2	0.2	0.2	0.2
Operating profit before losses	0.7	0.6	0.6	0.5
Recorded losses on loans and guarantees	0.0	-0.0	-0.0	0.0
Ordinary operating income before taxes	0.8	0.6	0.6	0.5
Capital adequacy ²⁾	16.4	16.6	15.6	15.1
Of which:				
Core capital	13.4	13.0	12.9	11.9

1) All Norwegian parent companies.

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

3) New accounting rules from 1 January 1999.

4) Kommunalbanken reports as a mortgage company with effect from the first quarter of 2000.

Source: Norges Bank

Exchange rates

Table 38. 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 EURO	100 DEM	100 DKK	100 FIM	100 FRF	1 GBP	100 JPY	100 SEK	1 USD
2000										
November	107.10	7.9950	408.78	107.22	134.47	121.88	13.317	8.5737	92.66	9.3369
December	107.55	8.1334	415.86	109.06	136.79	123.99	13.260	8.0894	93.90	9.0662
2001										
January	106.81	8.2355	421.08	110.33	138.51	125.55	12.974	7.5176	92.48	8.7784
February	106.75	8.2125	419.90	110.04	138.12	125.20	12.956	7.6708	91.49	8.9117
March	105.73	8.1600	417.22	109.32	137.24	124.40	12.971	7.3962	89.42	8.9742
April	105.50	8.1183	415.08	108.78	136.54	123.76	13.052	7.3512	89.04	9.0942
May	104.70	7.9952	408.79	107.16	134.47	121.89	13.035	7.5058	88.24	9.1438
June	104.07	7.9338	405.65	106.44	133.44	120.95	13.021	7.6011	86.16	9.2987
July	104.15	7.9714	407.57	107.08	134.07	121.52	13.099	7.4362	86.05	9.2636
August	104.16	8.0552	411.86	108.20	135.48	122.80	12.853	7.3672	86.52	8.9469
September	102.63	7.9985	408.96	107.49	134.53	121.94	12.842	7.3925	82.70	8.7805
October	102.80	7.9970	408.88	107.54	134.50	121.91	12.818	7.2797	83.50	8.8286
November	102.63	7.9224	405.07	106.41	133.24	120.78	12.812	7.2902	84.14	8.9192

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 web site (www.norges-bank.no).

Source: Norges Bank

Table 39. Exchange cross rates. Monthly average of representative exchange rates

	DEM/USD	DEM/GBP	FRF/DEM	JPY/DEM	JPY/USD
2000					
November	2.2841	3.2578	3.354	47.683	108.91
December	2.1804	3.1888	3.354	51.444	112.10
2001					
January	2.0848	3.0811	3.354	56.024	116.78
February	2.1223	3.0856	3.354	54.750	116.18
March	2.1513	3.1090	3.354	56.412	121.35
April	2.1911	3.1446	3.354	56.474	123.73
May	2.2371	3.1891	3.354	54.483	121.84
June	2.2923	3.2101	3.354	53.388	122.37
July	2.2730	3.2141	3.354	54.816	124.57
August	2.1726	3.1211	3.354	55.904	121.45
September	2.1471	3.1401	3.354	55.322	118.78
October	2.1593	3.1347	3.354	56.168	121.28
November	2.2020	3.1630	3.354	55.565	122.35

Source: Norges Bank

Balance of payments

Table 40. Balance of payments. In millions of NOK

	1999	2000	January - September	
			2000	2001
Goods balance	79 585	226 568	152 336	180 094
Service balance	-6 265	3 517	2 448	11 015
Net interest and transfers	-24 482	-26 492	-17 532	-15 800
A. Current account balance	48 838	203 593	137 252	175 309
Of which:				
Petroleum activities ¹⁾	157 038	303 367	211 806	234 015
Shipping ¹⁾	24 268	33 877	25 045	32 219
Other sectors	-132 468	-133 651	-99 599	-90 925
B. Net capital transfers	-1 317	-865	128	-754
C. Capital outflow excl. Norges Bank ²⁾	-20 012	36 221	33 013	-24 793
Distributed among:				
Central government sector	-6 307	-19 295	-13 521	10 902
Local government sector	247	341	238	292
Commercial and savings banks	-18 450	-43 033	-41 830	-40 480
Insurance	15 057	19 592	16 979	9 050
Other financial institutions	1 755	-9 093	-1 738	-3 521
Shipping	-3 084	-8 119	-8 231	-706
Petroleum activities	-409	10 548	33 345	-20 558
Other private and state enterprises	-12 504	15 509	-12 405	2 399
Unallocated (incl. errors and omissions)	3 683	69 771	60 176	17 829
D. Norges Bank's net capital outflow (A + B - C)	67 533	166 507	104 367	199 348
E. Valuation changes in Norges Bank's net foreign assets	9 788	17 032	24 769	-55 600
Change in Norges Bank's net foreign assets (D + E)	77 321	183 539	129 136	143 748
Of which: ²⁾				
International reserves	51 544	52 274	36 669	938
Investment of Government Petroleum Fund	50 491	163 849	134 459	160 546

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

2) Specifications from Norges Bank's balance sheet.

Sources: Statistics Norway and Norges Bank

Table 41. Norway's foreign assets and debt. In billions of NOK

The table has been omitted due to delays in the supply of data.

International capital markets

Table 42. Changes in banks' international assets.¹⁾ In billions of USD

	1998	1999	2000	Q2		Outstanding
				2000	2001	30 June 2001
Total	280.1	285.8	1 189.7	118.3	-117.6	10 912.0
Of which vis-à-vis:						
Non-banks	134.1	303.1	296.9	58.2	57.4	3 705.3
Banks (and undistributed)	146.0	-17.2	892.8	60.1	-175.0	7 206.8

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 43. Banks' international claims by currency. Percentage of total international assets

	December			Q2	
	1998	1999	2000	2000	2001
US dollar (USD)	34.3	39.4	41.3	40.0	44.9
Deutsche mark (DEM)	11.3	..	..	..	..
Swiss franc (CHF)	2.6	2.4	2.2	2.3	2.0
Japanese yen (JPY)	10.1	9.0	8.2	8.8	7.3
Pound sterling (GBP)	4.2	4.3	4.4	4.3	4.3
French franc (FRF)	3.5	..	..	..	..
Italian lire (ITL)	4.6	..	..	..	..
ECU/euro ¹⁾	1.4	27.7	27.7	28.2	28.3
Undistributed ²⁾	28.0	17.1	16.2	16.4	13.2
Total in billions of USD	9 665.4	9 939.8	10 778.0	10 252.2	10 912.0

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

Table 44. Funds raised on international markets, by type of instrument. In billions of USD. *This table will not be updated hereafter, and after a period will cease to be published.*

	1993	1994	1995	1996	1997
Issues of bonds	481.0	428.6	467.3	708.8	831.6
– of which floating-rate instruments	69.8	96.3	78.9	165.7	213.1
International and foreign bank loans	136.7	236.2	370.2	345.2	390.4
Other international facilities	8.2	4.9	3.8	4.5	2.7
Total	625.8	669.7	841.3	1 058.5	1 224.7

Source: OECD

Table 45. Funds raised on international markets, by borrowing country/institution. Per cent of total borrowing. *This table will not be updated hereafter, and after a period will cease to be published.*

	1993	1994	1995	1996	1997
OECD countries	86.3	87.7	90.1	88.3	85.8
Non-OECD countries	9.9	10.5	7.8	9.4	11.9
International institutions and other countries	3.8	1.8	2.1	2.3	2.3

Source: OECD

Foreign currency trading

Table 46. Foreign exchange banks. Foreign exchange purchased/sold forward with settlement in NOK.¹⁾ In billions of NOK at end of month

	Purchased net from:				Total	Purchased gross from		Sold gross to	
	Central govt. ²⁾	Other financial inst. ³⁾	Non-financial sector	Foreign sector		Non-financial sector	Foreign sector	Non-financial sector	Foreign sector
2000									
October	0.1	28.8	62.4	-30.5	60.8	96.6	339.1	34.2	369.6
November	0.1	30.1	66.2	-2.6	93.8	102.2	400.7	36.0	403.3
December	0.1	35.5	51.9	-21.9	65.6	105.1	386.7	53.2	408.6
2001									
January	0.1	34.3	69.5	-23.5	80.4	101.7	458.2	32.2	481.6
February	0.1	29.7	69.8	-13.4	86.2	99.9	497.3	30.1	510.7
March	12.6	32.7	65.0	-16.4	93.9	99.2	555.7	34.2	572.2
April	0.1	43.1	61.4	-45.7	58.9	93.9	542.6	32.5	588.3
May	0.1	30.5	59.5	-48.0	42.1	96.4	563.6	36.9	611.6
June	0.1	38.4	77.7	-17.6	98.6	109.5	648.8	31.8	666.4
July	0.1	1.3	72.2	-20.6	53.0	107.4	606.0	35.2	626.6
August	0.1	32.7	69.5	-7.2	95.1	110.9	679.7	41.4	686.9
September	-0.1	30.1	57.9	9.8	97.7	108.5	688.6	50.6	678.9
October	-0.0	31.0	64.5	-22.8	72.7	107.7	644.6	43.2	667.4

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

	30/9 2000	31/12 2000	31/3 2001	30/6 2001	30/9 2001
Foreign assets, spot	205 302	216 694	222 319	227 322	220 402
Foreign liabilities, spot	318 965	307 225	347 759	329 940	358 722
1. Spot balance, net	-113 663	-90 531	-125 440	-102 618	-138 320
2. Forward balance, net	44 226	21 119	-2 720	54 848	81 370

Source: Norges Bank

Table 48. Norges Bank's foreign currency transactions with banks. In billions of NOK

	1999		2000		Week in 2001													
	1-52	1-52	1-52	1-52	36	37	38	39	40	41	42	43	44	45	46	47	48	36-48
A. Norges Bank's net sales of foreign exchange to banks																		
1. Spot	-11	-53	-2.96	-2.95	-3.20	-3.01	-3.10	-3.05	-3.15	-2.90	-3.01	-2.90	-3.15	-2.90	-3.15	-3.00	-3.04	-39.42
2. Forward	-16	-48	-2.96	-2.95	-3.20	-3.01	-3.10	-3.05	-3.15	-2.90	-2.95	-2.90	-3.15	-2.90	-3.15	-3.00	-3.04	-39.36
	5	-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.06	0.00	0.00	0.00	0.00	0.00	0.00	-0.06
Used by banks to cover:																		
B. Foreign sector¹⁾																		
1. Spot	-1	-37	-3.83	-12.80	-12.44	3.40	28.84	9.01	-0.26	6.27	-11.05	6.70	11.64	-11.24	-9.57	4.67		
2. Forward	-4	-64	-15.88	1.34	5.77	9.03	5.14	8.34	-12.17	3.27	-3.60	-1.98	3.3	7.26	-6.51	3.31		
	3	27	12.05	-14.14	-18.21	-5.63	23.70	0.67	11.91	3.00	-7.45	8.68	8.34	-18.5	-3.06	1.36		
C. Norwegian sectors, non-bank¹⁾																		
1. Spot	-26	-22	-1.13	6.53	7.68	-3.26	-29.37	-13.41	-2.30	-8.52	7.63	-8.19	-16.08	12.38	4.88	-43.16		
2. Forward	4	20	7.47	3.56	-6.55	-6.82	-31.57	-8.42	0.28	-0.47	-2.66	0.46	-15.06	12.45	4.98	-42.35		
3. Increase in customers' net currency claims on banks	-24	-33	-3.72	-0.23	17.39	5.93	2.56	-4.49	-2.47	-5.21	0.68	-5.89	-3.34	1.66	2.57	5.44		
	-6	-10	-4.88	3.20	-3.16	-2.37	-0.36	-0.50	-0.11	-2.84	9.62	-2.76	2.32	-1.73	-2.67	-6.24		
D. Other																		
1. Banks' income deficit in foreign exchange, foreign	16	6	1.99	3.33	1.56	-3.16	-2.57	1.35	-0.59	-0.65	0.41	-1.41	1.28	-4.14	1.65	-0.95		
2. Losses on spot transactions, foreign	6	6	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	2.34	
3. Other losses, including adjustments	7	6	0.66	-1.59	-1.41	4.17	-1.90	-1.03	0.79	0.47	-1.08	0.64	0.92	0.26	-1.03	-0.13	-4.43	
4. Increase in banks' total position	-1	-6	-2.11	5.02	2.46	-5.98	-1.56	2.72	-1.81	-0.17	0.15	-1.23	-0.60	0.08	-1.4	-4.43		
	4	-1	3.26	-0.28	0.33	-1.53	0.71	-0.52	0.25	-1.13	1.17	-1.00	0.78	-4.66	3.9	1.28		
Specification:																		
Non-resident net sale of NOK-denominated assets related to:																		
Net NOK claims on banks	-2	-5	-14.88	0.09	3.52	7.88	5.90	7.45	-14.55	5.13	-4.44	-2.53	2.34	5.58	-5.14	-3.65		
VPS-registered shares	5	-40	-0.09	-0.05	0.61	1.38	0.81	0.56	0.59	-0.29	0.64	0.06	0.35	0.86	-0.09	5.34		
VPS-registered bonds	-11	-16	-0.26	1.86	-0.86	-0.29	-0.30	0.13	2.13	-2.06	0.33	0.83	-0.43	0.74	-0.77	1.05		
VPS-registered notes and certificates	3	-3	-0.65	-0.56	2.50	0.06	-1.27	0.20	-0.34	0.49	-0.13	-0.34	1.04	0.07	-0.51	0.56		
Total (equal to NOK offset to B1 above)	-4	-64	-15.88	1.34	5.77	9.03	5.14	8.34	-12.17	3.27	-3.60	-1.98	3.3	7.25	-6.51	3.30		
Memorandum:																		
Increase in banks' foreign spot position (net)	-8	-29	4.61	-6.44	-1.19	-9.57	25.05	-2.12	7.77	-6.35	4.21	-2.20	7.51	-23.15	-0.66	-2.53		
(Corresponds to A1-B1-C1-D1-D2)																		

1) Positive figures denote foreign exchange sales from banks to the sectors mentioned. Negative figures denote purchases.

Source: Norges Bank

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