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Monetary policy, cyclical fluctuations and competitiveness

Address by Jarle Bergo, Deputy Governor of Norges Bank to the Norwegian Association of Economists, 5 September 2002

1 Introduction

Thank you for giving me this opportunity to discuss the relationships between monetary policy, cyclical developments and competitiveness. There has been some debate about monetary policy this summer. Part of this debate has focused on the role monetary policy can and should have in smoothing fluctuations in the real economy and safeguarding competitiveness in the Norwegian business sector.

Some have maintained that Norges Bank places too much weight on reaching the inflation target. Statements like this should be discussed in the light of what monetary policy can be used for and of the broad effects on the economy of various monetary policy objectives. Only when we have clarified our options, can we discuss whether the emphasis on the inflation target is too great, too little or just right. This address is intended to contribute to such a clarification. It will probably also become clear that in its implementation of monetary policy Norges Bank consciously seeks to avoid unnecessary disturbances in the real economy.

First, a theoretical outline is presented of how monetary policy works, and some relevant and realistic monetary policy objectives are indicated.[1)] Against this background, Norwegian monetary policy is discussed and assessed, including the *trade-offs* Norges Bank faces in economic policy. It is important to note that trade-offs are often necessary. We simply cannot have everything we want.

2a How does monetary policy influence the economy?

Monetary policy affects the economy through several channels, together referred to as the transmission mechanism of monetary policy. In a closed economy, monetary policy mainly works by influencing demand through changes in the real interest rate. In an open economy, monetary policy also works through changes in the exchange rate.

Let us make a stylised review of what happens if the central bank raises the key interest rate.

In the short and medium term, prices are relatively rigid. As a result, the short and longer real rates of interest also tend to increase when the nominal interest rate is raised. In addition, there is both a nominal and a real appreciation of the exchange rate. Interest rate changes act on prices and demand through the following channels:

- *The direct exchange rate channel to inflation*
  An appreciation will reduce prices for imported goods measured in krone terms. How quickly this reduction will feed through to consumer prices depends among other things on competitive conditions and margin-setting.

A change in the real interest rate will also influence demand in the economy.

- *The real interest rate channel to aggregate demand*
  An increase in the real interest rate reduces demand, both for consumer and investment goods. It becomes relatively more attractive to save, which leads to a reduction in current consumption. Investors in their turn will face higher investment costs and will as a result reduce investment demand.

- *The exchange rate channel to aggregate demand*
  A strengthening of the exchange rate means that domestically produced goods and services become relatively more expensive than competing foreign products. Demand for domestically produced goods is thus reduced.

It is common to assume that the effects through the channels mentioned so far will occur within one year of a change in the interest rate. The direct exchange rate channel to inflation is probably the one that acts quickest.

- *The demand channel to inflation*
  The reduction in aggregate demand as a result of the rise in the interest rate will in turn slow the rise in prices. This is mainly due to two factors. First, output is reduced. The decline in output results in lower demand for labour. This reduces wage growth. Second, firms set lower prices as a result of lower demand. The impact on inflation is often assumed to occur one to two years after the effect on aggregate demand.

In addition to these relatively direct effects, the price level will also be influenced by changes in prices for imported and domestically produced intermediate goods.

- *The expectations channel to inflation*
  Both price and wage inflation are affected by changes in expected inflation. One reason is that firms often set prices for several periods. The same applies to wage formation. Expected price changes will figure promi-

[1] The presentation is largely based on Svensson, Lars E.O. (2002): 'Monetary Policy and Real Stabilization', mimeo. Princeton University

nently in the calculation of expected future real wages. We have seen that an increase in the nominal rate of interest reduces inflation through various channels with varying lags. As a result, inflation expectations can also be expected to be reduced. The expectations channel will therefore amplify the effect of monetary policy.

The time it takes for a change in the interest rate to have an impact on inflation and demand will vary. It must also be stressed that in the course of the period in which a change in the interest rate affects output and inflation – and often before monetary policy takes effect – the economy will be influenced by a number of direct and indirect disturbances. Thus, the central bank's control over inflation and production is far from perfect.

2b What is a reasonable objective for monetary policy?

The goal of economic policy tends to be a desire for maximum welfare for the country's citizens. This goal is often expressed as a number of separate goals, such as (sustainable) economic growth, efficient utilisation of resources, equitable income distribution, price stability, viable regions, etc. Monetary policy has little or no ability to influence most of these separate goals in the long term. It is therefore sensible to specify monetary policy's *long-term* goals in terms of factors monetary policy *can* affect.

Introducing money into an economy and establishing a credible monetary policy that ensures low and stable inflation will have a positive effect on the real economy. Similarly, a monetary policy that ceases to function could result in a dramatic deterioration in welfare, as we have seen on numerous occasions. However, apart from this, monetary policy will not have lasting effects on the growth potential or the level of welfare in the economy. It is the supply of economic resources – labour and capital and our ability to utilise them efficiently in production - that is decisive. We cannot use monetary policy to pull ourselves up by our bootstraps.

It also seems intuitively unreasonable that it should be possible to influence output potential or average growth in the economy through monetary policy. I think this is fairly obvious if we imagine the effects of monetary policy in a "Robinson and Friday" economy.

The long-term objectives of monetary policy

In the long term, monetary policy determines the average level of inflation. Output is determined by the supply of labour, capital and technology and by productivity changes.

It is important to stress the essential difference between the target of a high level of economic growth (output target) and the inflation target. As long as output is independent of monetary policy in the long term, the authorities cannot choose an output target for monetary policy. Attempts to boost production above the natural level in the long term will only result in a rise in inflation. However, the inflation target can be chosen by the authorities.

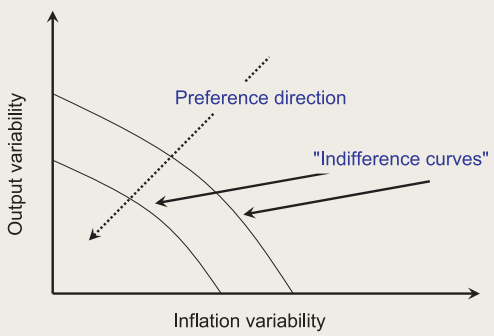
The short-term objectives of monetary policy

Under certain conditions, monetary policy may nevertheless contribute to smoothing cyclical fluctuations, i.e. swings in output and demand. Some of the channels through which monetary policy influences inflation go by way of the demand side of the economy. Monetary policy can be used aggressively to bring inflation under control quickly, but with considerable fluctuations in the real economy as a consequence; or it may be used more gradually with less of an impact on the real economy, but with inflation being allowed to deviate from the target over a slightly longer period. In the short term, there will thus be a trade-off between output and employment developments and the variation in inflation around the inflation target. In the theoretical literature this trade-off is often described as a loss function in which both output and inflation variability are included. The idea is that the central bank shall minimise a weighted average of the two.

The loss function can be depicted in stylised form in a chart with output variability (deviation from "natural" or potential output) and inflation variability along the axes (see Chart 1). It is assumed that the central bank wants – if it had been possible – output and price stability. The welfare loss will thus be smaller the further into the chart we are. The lines in the chart (indifference curves) thus show different combinations of inflation variability and output variability that result in the same welfare loss.

Lars Svensson, who is a prominent contributor to theoretical research in the area of monetary policy, has recommended that the central bank should explicitly define a loss function. He proposes an expression where the squared deviation between inflation and the inflation

Chart 1 The central bank's preferences



target and the squared deviation between actual and potential output be weighted together to provide a measure of the loss in each period. The total loss is then found by discounting future losses.

Up to now, no central bank has gone as far as Svensson recommends. However, the horizon that is chosen for monetary policy will implicitly provide some indication of the central bank's loss function. If the horizon is very short, inflation will be quickly brought back to the target, with greater fluctuations in output as a result. This indicates that the central bank puts considerable weight on avoiding variations in inflation and little weight on stabilising the real economy. Similarly, if the horizon is long, it will indicate that the central bank also puts weight on avoiding variations in output and employment.

Chart 2a illustrates the optimal combinations of inflation and output variability. The three points in the chart reflect different types of inflation targeting.[2]

Strict inflation targeting means that only the variation in inflation is included in the loss function. No weight is given to output changes, thereby resulting in relatively high output variability. Monetary policy has the swiftest effect through the exchange rate channel. If inflation is higher than the inflation target, the central bank will raise its key rate sharply to reduce inflation quickly. This may lead initially to a relatively strong appreciation of the currency, which reduces imported inflation. As CPI inflation quickly approaches the target due to the change in imported inflation, demand is also reduced as a result of a higher real interest rate and stronger exchange rate. The change in demand will then influence inflation. In order to avoid a further reduction in the inflation rate, the central bank will lower the interest rate. The result of this policy will be considerable variations in nominal and real interest rates, accompanied by substantial variations in the nominal and real exchange rate and in output.

Flexible inflation targeting implies that the central bank also puts some weight on output and employment variability. The indifference curve, as it has been drawn in in Chart 2b, indicates precisely that the central bank takes account of variability in both output and inflation. Output is therefore also included in the loss function. This means that the central bank will attempt to avoid the sizeable variations in output resulting from strict inflation targeting. The way to take account of output and employment under a flexible inflation target is to choose a relatively long time horizon. In this way the central bank will gradually bring inflation back to the target. In practice, inflation is allowed to vary in the short term in order to prevent unnecessary variations in the real economy.

One final possibility would be to put weight only on minimising output variability. One variant of this would be to minimise unemployment variability. Note that this policy does not improve the growth potential of the economy, only the fluctuations. Moreover, this would result in substantial inflation variability since the economy does not have a nominal anchor. This policy would not be sustainable in practice because it does not provide an answer as to how monetary policy should respond to unemployment that is driven by wages and costs. We would then be forgetting the experience of the 1970s and 1980s.

Monetary policy credibility will also influence output and inflation variability. Current inflation pressures depend on expected future price changes. If economic agents feel confident that the central bank will stabilise

Chart 2a The short-term trade-off in monetary policy

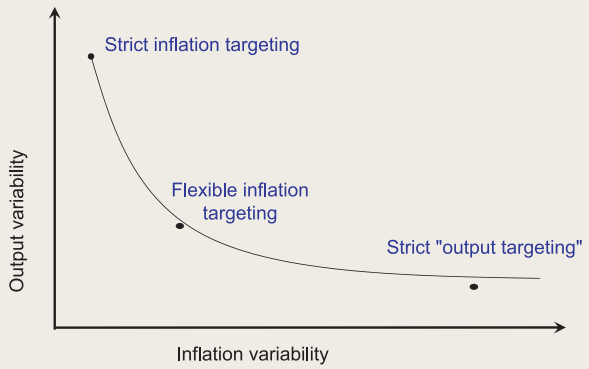


Chart 2b The short-term trade-off in monetary policy (with indifference curve)

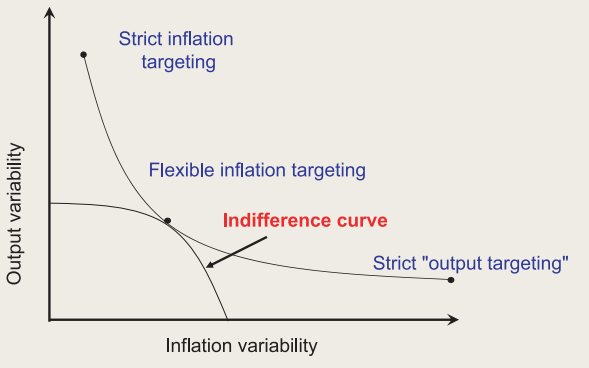
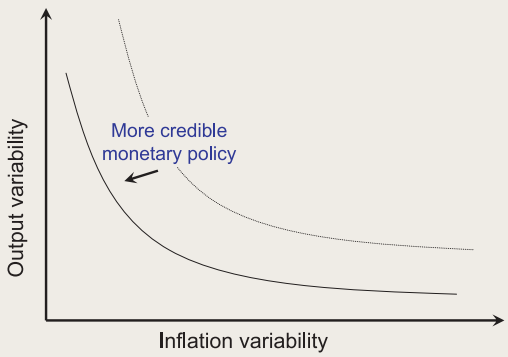


Chart 3 Effect of a credible monetary policy



[2] See, for example, Svensson, Lars E. O. (2000): "Open-Economy Inflation Targeting", Journal of International Economics, vol. 50, no. 1, pp.

inflation around the target, and their behaviour reflects this, inflation will move back to the target more quickly. Hence, the central bank must react less each time it wants to bring inflation back to the target. This also implies that output and employment must be reduced less in order to achieve a given decline in inflation.[3] The line in Chart 3 will thus lie further down and to the left with a credible monetary policy.

3 Norwegian monetary policy and cyclical fluctuations

In the long term, we cannot influence growth potential or prosperity by means of monetary policy - not even in Norway. But we can influence the fluctuations in the economy, the short-term cyclical movements. We also take into account that monetary policy should not cause unreasonably sharp fluctuations in output by setting a relatively long-term horizon for the attainment of the inflation target, and allowing deviations in the intervening period.

It would normally be possible by means of very aggressive use of instruments to force inflation back to the target within a time frame of 3-4 quarters - perhaps even less if the foreign exchange channel is strong. This would cause very pronounced fluctuations in the real economy, however.

In this sense, variations in output enter our loss function. The thinking that follows from the theoretical research is to a large degree present in the actual setting of interest rates. For practical purposes, we, and other central banks with inflation targeting, make estimates of future price inflation. Our instruments are oriented in such a way that there are prospects of attaining the inflation target two years ahead. The theoretical literature has given us useful knowledge as to how far forward in time this horizon should be set. The result of using too short a horizon will be considerable instability in output and in nominal and real interest rates.

From our point of view, it is very positive that substantial resources are being invested in theoretical and empirical research in this area. Norges Bank will seek to contribute to this work and to the public debate. We must also be willing to consider adjusting the manner in which we carry out our analyses and communicate monetary policy as new knowledge becomes available.

Let us now look at the concrete objectives of Norwegian monetary policy. A year and a half ago, the Storting and the Government adopted new guidelines for economic policy. According to its mandate, Norges Bank shall orient monetary policy towards maintaining low and stable inflation.

The first paragraph of Section 1 presents an objective. The next paragraph states more specifically what Norges Bank is required to do.

The first sentence in the mandate refers to the value of the krone. Stability in the internal value of the krone implies that inflation must be low and stable. It is also a

The Regulation on Monetary Policy

Established by Royal Decree of 29 March 2001 pursuant to Section 2, third paragraph, and Section 4, second paragraph, of the Act of 24 May 1985 no. 28 on Norges Bank and the Monetary System

I

Section 1

Monetary policy shall be aimed at stability in the Norwegian krone's national and international value, contributing to stable expectations concerning exchange rate developments. At the same time, monetary policy shall underpin fiscal policy by contributing to stable developments in output and employment.

Norges Bank is responsible for the implementation of monetary policy.

Norges Bank's implementation of monetary policy shall, in accordance with the first paragraph, be oriented towards low and stable inflation. The operational target of monetary policy shall be annual consumer price inflation of approximately 2.5 per cent over time.

In general, the direct effects on consumer prices resulting from changes in interest rates, taxes, excise duties and extraordinary temporary disturbances shall not be taken into account.

Section 2

Norges Bank shall regularly publish the assessments that form the basis for the implementation of monetary policy.

Section 3

The international value of the Norwegian krone is determined by the exchange rates in the foreign exchange market.

Section 4

On behalf of the State, Norges Bank communicates the information concerning the exchange rate system ensuing from its participation in the International Monetary Fund, cf. Section 25, first paragraph, of the Act on Norges Bank and the Monetary System.

II

This regulation comes into force immediately. Regulation no. 0331 of 6 May 1994 on the exchange rate system for the Norwegian krone is repealed from the same date.

[3] See, for example, Clarida, Richard, Jordi Gali and Mark Gertler (2000): "The Science of Monetary Policy: A New Keynesian Perspective", Journal of Economic Literature, Vol. 44, no. 2, 195-222.

necessary precondition for stability in financial and property markets.

The regulation also states that monetary policy shall be aimed at stability in the international value of the krone. The krone exchange rate fluctuates from day to day, from week to week, and from month to month. We have free international trade and free capital movements. We do not have the instruments for fine-tuning the exchange rate. In Norges Bank's submission of 27 March 2001 to the Ministry of Finance on the new guidelines for economic policy, we indicated that when monetary policy is aimed at low and stable inflation, this is the best contribution monetary policy can make to stability in the krone exchange rate over time.

The interest rate affects price inflation through a number of channels, including the krone exchange rate. A stronger krone curbs inflation. If we take steps to counteract an appreciation of the krone when there are pressures in the economy, we reduce the possibility of keeping inflation at bay and there is a greater risk of pronounced fluctuations in the economy. Maintaining stability in the internal value of the krone must thus take precedence. As long as other countries pursue a policy of low and stable inflation, stability in the international value of the krone is dependent on low and stable inflation in Norway.

The implementation of monetary policy is delegated to Norges Bank. This implies that Norges Bank sets the interest rate on the basis of our understanding of the regulation, as indicated in the Bank's submission to the Ministry of Finance in March last year. Our interpretation places emphasis on the Government's rationale behind the regulation, on the objective as formulated in the first paragraph and on our knowledge about the relationships between the interest rate, the krone exchange rate, output, employment and inflation.

The operational objective of monetary policy is low and stable inflation. The inflation target is set at 2_ per cent. A monetary stance resulting in high and varying inflation would have led to wider swings in output and employment. It would also have been a recipe for turbulence in the foreign exchange markets. There is therefore a close link between the third paragraph of the regulation - the inflation target - and the first paragraph concerning stabilising economic developments and exchange rate expectations.

Monetary policy affects the economy with considerable and variable lags. The current level of inflation does not provide an adequate basis for determining the level at which interest rates should be set today. Our analyses indicate that a substantial share of the effects of an interest rate change will occur within two years. Two years is thus a reasonable time horizon for attaining the inflation target, and also makes it possible to avoid unnecessary output and employment variability. See also the first section of the regulation about contributing to stable developments in output and employment. If we should attempt to attain the inflation target in the very short term, by lowering the key rate and thereby contributing to a depreciation of the krone and higher price inflation, we would very probably be compelled to raise the interest rate even more a year from now in order to attain the inflation target than we did the last time we raised interest rates. Such a short-term policy would have contributed to greater demand and output instability. With the relatively long time horizon that has been chosen, monetary policy can contribute to stable developments in output and employment.

However, situations may arise where more than two years or less than two years are required to attain the inflation target. This will depend on what disturbances the economy is exposed to. Norges Bank will communicate such a change in the time horizon.

4 Monetary policy and competitiveness

Monetary policy cannot be used to influence the size of the internationally exposed sector over time. This is primarily determined by wage and income formation, fiscal policy, including the use of petroleum revenues over the government budget, and the adaptability and efficiency of the economy.

The new monetary policy mandate is linked to the new fiscal policy guideline. When the new guidelines were adopted in March 2001, Norges Bank pointed out that, in isolation, a gradual phasing in of petroleum revenues could contribute to deteriorating conditions for the internationally exposed sector.

Norway's fiscal policy will stimulate demand in the public and sheltered sectors. Consequently, internationally exposed industries may have difficulties recruiting labour and may face higher labour costs. The contest for labour may result in a deterioration in competitiveness internationally.

Norges Bank's submission of 27 March 2001 to the Ministry of Finance:

"Norges Bank would assert that a gradual phasing in of petroleum revenues approximately in step with the expected real return of the Petroleum Fund will, ceteris paribus, contribute to deteriorating conditions for businesses exposed to international competition."

The fact that economic mechanisms function in this way was pointed out in Report no. 29 (2000-2001) to the Storting from the Stoltenberg Government and in Annex 4 to Report no. 1(2001-2002) to the Storting from the Bondevik Government.

Consequences of the fiscal guideline

"Over time, increased use of petroleum revenues will lead to restructuring and the transfer of resources from the exposed to the sheltered sector."

St. Rep.1 (2001-2002) Annex 4

"Increased use of petroleum revenues may increase economic activity. In a situation with high capacity utilisation, this could lead to a weakening of internationally exposed industries."

St. Rep 29 (2000-2001)

A deterioration in competitiveness can be caused by two factors: high wage growth or a nominal appreciation of the krone. In isolation, an expansionary fiscal policy must lead to a tightening of monetary policy if the inflation target is to be attained. Without such a tightening, the labour market would be tighter, and competitiveness would deteriorate as a result of rising wage and price inflation.

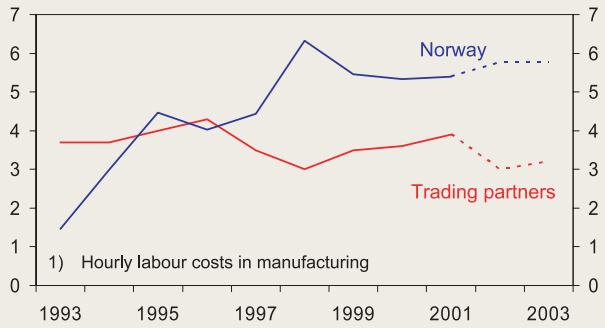
In the debate, it has been stressed that the scaling back of manufacturing has come faster and with greater intensity than expected. But nor was wage growth expected to take the turn it did – not this year, not last year, and not the year before that. Wage growth that is 15 per cent higher than other countries (from 1998 to 2003) is bound to have repercussions. The krone exchange rate has also appreciated. But the reaction in the foreign exchange market cannot be called an overreaction when wages have increased sharply. The same forces that have driven up the krone could bring it down if they were reversed.

Competitiveness is the ability to pay high wages on the basis of high productivity. For a number of years, Norway has had high wage growth that has not been matched by equally high productivity growth. Over time, growth in real wages must be consistent with growth in labour productivity. An inflation target of 2_ per cent and trend productivity growth of around 2 per cent, according to updated national accounts figures, imply annual nominal wage growth of about 4_ per cent.

Under the "Solidarity Alternative" in the 1990s, a stable exchange rate and the rate of wage growth among our trading partners functioned as an anchor for the social partners. Up to 1997, this anchor remained effective. However, growth in labour costs jumped in 1998 and has since been around 2 percentage points higher than among our trading partners (Chart 4). Wage growth is high in relation to earnings in many enterprises. It is demanding to improve efficiency at the pace required to keep up with the rise in labour costs.

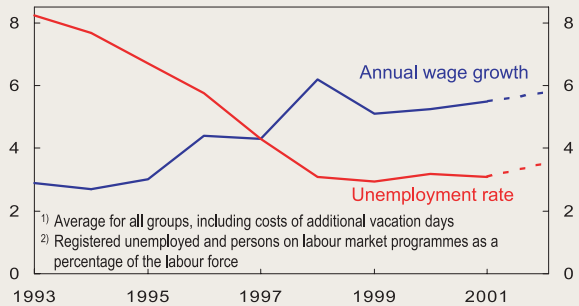
The sharp rise in labour costs in recent years carries with it a potential for higher unemployment (Chart 5). The interest rate is an effective instrument for countering lower demand and growing unemployment when measures to stimulate demand do not translate into higher wage growth or unstable financial markets. However, there is little monetary policy can do to prevent an increase in unemployment that is driven by high cost inflation.

Chart 4 Labour costs: Norway and trading partners[1]. Percentage increase



Sources: Statistics Norway, TRCIS/IMF and Norges Bank

Chart 5 Annual wage growth[1] and unemployment rate[2]. Per cent



Sources: TRCIS, the Directorate of Labour and Norges Bank

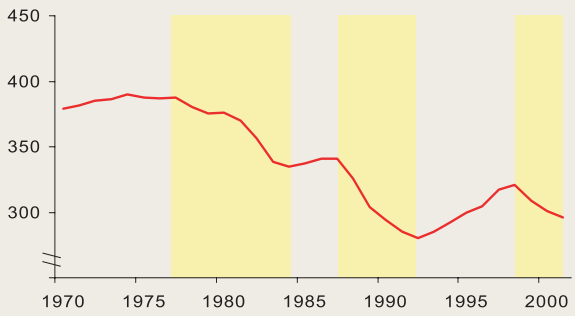
Chart 6 The trade-weighted krone exchange rate. A rising value denotes a stronger krone. January 1990=100. Monthly figures

Source: EcoWin

Developments in wage settlements have been a driving force behind the appreciation of the krone (Chart 6). The foreign exchange market has responded as expected. When there is confidence that the inflation target will be attained, high wage growth creates expectations of a tight monetary policy and relatively high interest rates. High returns make it attractive to take krone positions. Increased demand for our currency boosts the international value of the Norwegian krone. If wage growth slows , and we can be confident that it will remain low for the next few years, the interest rate differential against other countries can be narrowed. This will normally lead to the krone depreciating.

Over the last thirty years, manufacturing has been scaled back in waves, and particularly sharply in the period 1977 to 1987 (Chart 7). In the years leading up to the periods of contraction, profitability weakened in the manufacturing sector. It can take time before such a deterioration translates into lower output and employment. But when the turnaround does occur, it tends to be rapid and substantial. It now appears that a new period of downscaling is under way.

Chart 7 Manufacturing employment, 1970-2001.
In 1000s employed



Source: Statistics Norway

Several factors point to this: First, a trend analysis indicates that manufacturing employment will be reduced in the period ahead, partly because petroleum investment is expected to decline and productivity growth in manufacturing to be somewhat higher than in other industries.

Second, manufacturing costs have increased sharply since 1998 as a consequence of high wage growth. Up to the summer of 2000, this cost increase was to some extent offset by a weaker krone. The appreciation of the krone has revealed and exacerbated the deterioration in cost competitiveness.

Third, as a result of the fiscal guideline the internationally exposed sector is subject to additional pressure. Over time, the phasing in of petroleum revenues will lead to restructuring and the transfer of resources from the exposed to the sheltered sector.

Fourth, the response patterns in stabilisation policy function in a different way from previously. In the past, it was generally understood that high wage growth and overheating of the economy must be countered by a tightening of government budgets. Today, with the fiscal guideline and inflation targeting, it is monetary policy that is tightened to a greater extent in such a situation. The burden of stabilisation policy is thus at times transferred to the internationally exposed sector.

Against this background, a decline in manufacturing employment from 300 000 to 240 000 over a ten-year period, as Norges Bank has previously indicated, does not seem unreasonable.

Norges Bank has one instrument: the interest rate. It has a broad impact. Monetary policy can therefore not be oriented towards stabilising developments only in the internationally exposed sector. This would create considerable imbalances in the Norwegian economy.

The low interest rate policy and devaluations in the 1970s and 1980s are examples of how such a policy can fail. Monetary policy was geared towards preventing a weakening of competitiveness in manufacturing. The krone was devalued on several occasions. But wage growth accelerated to compensate for higher inflation. The result was the yuppy period, unsound investments and a wage and price spiral that hit the entire economy. The Norwegian economy had to go through an extensive turnaround operation in the late 1980s. Confidence in monetary policy and the Norwegian krone had to be restored in order to avoid persistently high inflation. It took a long time, and very high interest rates were required, before confidence in the nominal anchor was restored.

5. Conclusion

Through a sound, credible orientation of monetary policy, it is possible to attain an inflation rate that on average is equal to the targeted figure. By practising flexible inflation targeting, i.e. having a medium-term horizon for the inflation target, we can also achieve a reasonable trade-off between inflation variability and output variability in the short term.

But monetary policy has no lasting effect on output and employment. These are determined by the supply of economic resources - capital and labour. Technological developments, and our ability to use that technology, also play a decisive part. In the long run, monetary policy cannot influence output, employment or competitiveness beyond the benefits that follow from low and stable inflation.

The economy requires a nominal anchor. The Government has laid down a guideline for monetary policy which implies flexible inflation targeting. This is a regime that has also won broad international support.

How vulnerable are financial institutions to macroeconomic changes? An analysis based on stress testing

Espen Frøyland, adviser, and Kai Larsen, senior economist, both in the Financial Analysis and Market Structure Department1)

Macroeconomic changes have been an important reason why financial institutions have experienced losses on loans to households and enterprises. This article contains an analysis of financial institutions' vulnerability in two stress test scenarios using a new analytical framework. The results indicate that a fall in property prices, higher interest expenses and stronger wage growth will lead to higher losses on loans to enterprises and households. The analytical methods used here are still being developed, and the results must be interpreted with caution.

1 Introduction

Norges Bank has the objectives of price stability and financial stability. Financial stability implies that the financial system has good "shock absorbers" to reduce the risk of problems in one financial institution spreading to others. At worst, financial instability may lead to systemic and banking crises. The weaker the institution is financially, the greater the possibility of negative economic changes resulting in a financial crisis. Norges Bank closely monitors factors that affect financial stability. Important factors in this context are debt build-up in households and enterprises and developments in asset prices.

Stress tests show how vulnerable financial institutions may be to marked – though possible – changes in economic circumstances. A stress test analyses how much may be lost, not necessarily how much will probably be lost. We have decided to use stress test scenarios in our analyses. A stress test scenario is a shift in risk factors (equity prices, exchange rates, interest rates, etc.) with a view to illustrating the effect of the shifts on, for example, financial institutions' profitability and financial strength. The ERM crises of 1992 and 1993 and the 1997 fall in equity prices are examples of changes on which a stress test scenario may be based. This kind of stress test is normally used to analyse changes resulting in negative results for financial institutions. We analyse the effect of changes on vulnerability in the financial sector as a whole rather than in individual institutions.

A number of central banks use stress testing to determine how robust the financial sector is (see for example Benito et al. (2001)). In the IMF's Financial Sector Assessment Program (FSAP), stress testing is used to analyse financial stability in member countries (see for example the FSAP for Finland (IMF 2001)). Private financial institutions also use stress testing to identify the level of risk in their activities. At the same time, the supervisory authorities are tightening their requirements with regard to financial institutions' quantitative tests of the risks associated with their activities. In the proposal for new Basel rules, banks are required to conduct stress testing when calculating new capital adequacy requirements.[2] It is proposed that financial institutions analyse the effects of macroeconomic changes on market, credit and liquidity risk. Central bank representatives from the G10 countries have charted the extent of stress testing in 43 large banks in 10 countries.[3] According to their findings, these banks performed an average of just under 10 stress tests each year.

This article presents some examples of how stress testing may be performed. We begin by explaining how stress test scenarios may be used to shed light on the risk of losses by financial institutions on loans to households and enterprises. We then discuss two macroeconomic stress test scenarios using a model-based simulation, and calculate financial institutions' losses on loans to households and enterprises in these two cases. Finally, we draw some conclusions as to what extent these events can be said to pose a threat to financial stability.

2 Stress test scenarios and credit risk

The banking crisis in Norway showed that there is a relationship between substantial fluctuations in the real economy and financial institutions' losses on loans to households and enterprises. This may be illustrated by means of a simple theoretical model. For a lender, the expected loan loss (TAP) will be the product of the probability of default/bankruptcy, the borrower's outstanding debt and the level of loss in the event of default/bankruptcy. We can write:

$$TAP_t = \sum_{i=1}^{n} p_{it} G_{it} TG_{it} \qquad (1)$$

where p_{it} is the probability of borrower i defaulting or going bankrupt, G_{it} is borrower i's debt and TG_{it} is the level of loss given default or bankruptcy at a point in time, t. By aggregating the figures for all borrowers, we obtain an expression of the overall expected loan loss in the economy. The probability of bankruptcy, debt and the level of

[1] We would like to thank Eivind Bernhardsen, Thea B. Birkeland, Tore Anders Husebø, Arild J. Lund, Thorvald Grung Moe, Kjetil Olsen and Bent Vale for useful input and comments.

[2] See BIS (2001a).

[3] See BIS (2001b).

loss in the event of bankruptcy is a function of both macroeconomic developments and microeconomic conditions associated with the individual borrower. To analyse loan losses, both of these factors should be assessed.

Our analysis of the risk of losses on loans to enterprises is based on an individual-specific bankruptcy prediction model developed by Norges Bank, used in combination with the macroeconomic model RIMINI. For households, we have used aggregate figures from the national accounts and have based our analysis on the assumption that the macroeconomic model adequately describes relevant aspects related to households.

3 Two macroeconomic stress test scenarios

Norges Bank uses the RIMINI model to draw up projections for macroeconomic developments.[4] We have used the macroeconomic projections in *Inflation Report* 1/2002 as the baseline scenario. We can also use RIMINI to analyse alternative scenarios for the economy. In the following, we will be taking a closer look at two different scenarios for the Norwegian economy. In the first scenario, we will study the effect of a gradual fall in house prices to about 25 per cent below the level of the baseline scenario in 2004.[5] Housing wealth accounts for about three quarters of total household net wealth. A change in wealth has a relatively substantial impact on household consumption in the basic version of the consumption equation in RIMINI that we have used.[6] In this stress scenario, the fall in house prices will reduce growth in household consumption by ½ percentage point in 2002 and around 1½ percentage points in 2003 and 2004 compared with the baseline scenario. Private consumption accounts for over half of mainland GDP. The sharp fall in demand will in turn result in higher unemployment. In 2004, unemployment will be just under 1 percentage point higher than in the baseline scenario. As a result of the fall in house prices, growth in household loan debt will decline substantially compared with the baseline scenario. The interest rate is assumed to be the same as in the baseline scenario.

In the second scenario, we look at what the effects will be if wage growth is 2 percentage points higher than in the baseline scenario in 2002. In 2003 and 2004, wage growth is assumed to be the same as in the baseline scenario. At the same time, the interest rate is maintained at 2 percentage points higher than in the baseline scenario from 1 January 2002. In this scenario, we have used an alternative equation for private consumption, where real interest rates after tax have a direct effect in addition to income and wealth effects.[7] Stronger wage growth will in isolation fuel growth in real disposable income and encourage higher private consumption. However, higher interest rates reduce demand. Overall, there is a slight decline in private consumption in all the years. Unemployment is about ½ percentage point higher than in the baseline scenario at the end of the period. Higher wage growth fuels price rises, while higher interest rates help to push down price inflation. However, it takes time for higher interest rates to curb inflation. In the projection period, inflation only returns to 2½ per cent in 2004.

Stress test scenarios do not provide an indication of changes we regard as probable. They are only used to illustrate the effect on financial stability of possible shocks to the economy. The effects of the changes must be interpreted with caution. The results depend to a great extent on, among other things, the assumptions and the model used. For example, exchange rates are kept constant in both cases.

4 Losses on loans to households

Norwegian financial institutions' loans to enterprises and households amount to about NOK 1 500 billion. About 60 per cent of this is loans to households, primarily mortgages. In this chapter, we calculate financial institutions' losses on loans to households given the two macroeconomic stress test scenarios outlined above.

We have estimated a simple econometric model for recorded losses[8] on loans to households on the basis of developments in real economic variables (see (2))[9], where *TAPAGJ* is the financial institutions' losses on loans to households as a percentage of household loan debt, *GJELDSB* is household loan debt as a percentage of average nominal income, *RHUSBOL* is real household housing wealth,[10] *RLB* is the banks' nominal lending rate, *UAKU* is *LFS* unemployment as a share of the

$$tapagj_t = \underset{(5.7)}{3.73}\, gjeldsb_t \underset{(-7.8)}{-1.63}\, rhusbol_t + \underset{(5.5)}{13.33}\, RLB_t + \underset{(5.5)}{31.18}\, UAKU_t \underset{(24.2)}{-6.46}\, DUM97_t \quad (2)$$

4 See Olsen and Wulfsberg (2001) for a review of the methodology and how the model is used.

5 This fall in house prices does not seem very likely in the current economic situation. However, house prices have risen sharply over several years. If the rise in house prices has been stronger than fundamental conditions would indicate, so that the level of house prices is "out-of-balance", there is a possibility that house prices could fall sharply if the "bubble" bursts. However, there is little to indicate that this is the case.

6 See for example Eitrheim and Gulbrandsen (2001) for a discussion of the consumption equation in RIMINI.

7 The basic version of RIMINI probably underestimates the effect of changes in interest rates. In this version of RIMINI, consumption depends primarily on disposable income and secondarily on household wealth. Experience in recent years indicates that changes in interest rates affect private consumption faster than the wealth effect is capable of capturing. See Olsen and Wulfsberg (2001) for a more detailed explanation. It therefore seems reasonable to use the alternative consumption function in this stress test scenario.

8 Actual losses and loss provisions adjusted for reversal of previous years' loss provisions.

9 Numbers in brackets show the statistical significance (t-values) of the coefficients.

10 Measured as nominal housing wealth deflated by the consumer price index.

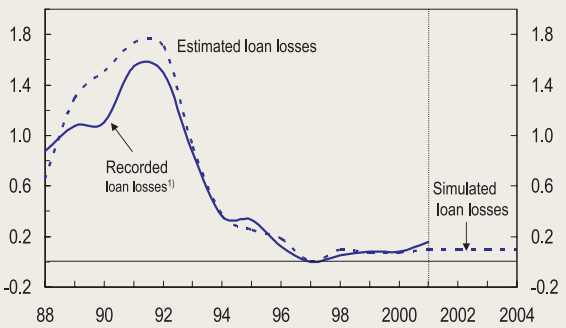
labour force and *DUM97* is a dummy for 1997. Lowercase letters indicate that we have taken the logarithm of the variables. This means that the coefficients preceding these variables may be interpreted as elasticities. Test properties for (2) are shown in Annex A.

According to the model in (2), a 1 per cent rise in the household debt burden will in isolation increase financial institutions' loan losses (as a percentage of household loan debt) by 3.7 per cent. Losses will increase by 1.6 per cent (as a percentage of household loan debt) if real household housing wealth is 1 per cent lower. This variable is an indicator of the realisation value of financial institutions' collateral. One reason why lower housing wealth has relatively less effect on loan losses than a higher debt burden is probably that many households can furnish relatively solid collateral for loans. According to the Norwegian Banking, Insurance and Securities Commission (2001), just under 70 per cent of loans from 32 banks were covered by collateral within 80% of the assessed value of a property in 2001. This share has remained relatively constant for several years. For many households, even a substantial fall in house prices would thus not result in the value of their house falling below the value of the loan. This reduces the risk of a fall in house prices resulting in financial institutions suffering losses on housing loans. A 1 percentage point higher lending rate will result in a 13 per cent increase in losses (as a percentage of household loan debt), while an increase in unemployment of 1 percentage point will result in a 31 per cent increase in losses (as a percentage of household loan debt). The equation shares many features with models previously developed by Norges Bank and the Bank of England.[11]

Chart 1 shows developments in financial institutions' actual and estimated losses on loans to households. In 2001, financial institutions' losses on loans to households amounted to NOK 1.4 billion, equivalent to 0.16 per cent measured as a percentage of household loan debt. During the banking crisis of 1991, losses amounted to over 1.5 per cent of household loan debt. The chart also shows financial institutions' loan losses up to 2004 based on developments in the real economy in the baseline scenario. According to calculations based on the baseline scenario, loan losses will remain low throughout the period.

Chart 2 shows loan losses in the two cases, measured as deviations from the baseline scenario. In the stress test scenario with stronger wage growth and higher interest rates, financial institutions' losses on loans to households as a percentage of total household debt will increase by about 0.1 percentage point, or just under NOK 1 billion in 2001 prices, compared with the baseline scenario in 2004. A somewhat lower debt burden will in isolation contribute to reducing losses, whereas higher unemployment and higher interest rates will result in an increase in overall losses in this case.

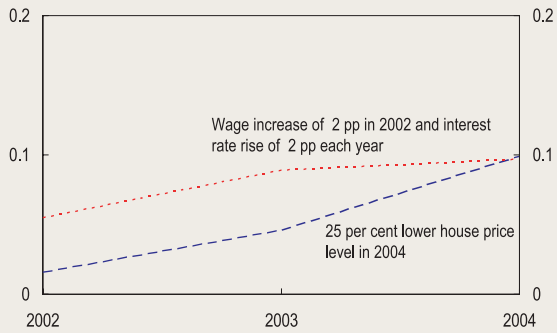
Chart 1 Financial institutions' losses on loans to households as a percentage of household loan debt



1)Actual losses and loss provisions adjusted for reversal of previous years' loss provisions.

Source: Norges Bank

Chart 2 Effect on financial institutions' losses on loans to households1). Deviation from baseline scenario in percentage points



1) Measured as a percentage of household loan debt

Source: Norges Bank

In the stress test scenario with a fall in house prices, losses will be slightly lower in 2002 and 2003, but on a level with the losses in the above scenario in 2004. The fall in house prices results in a substantial reduction in household consumption and housing wealth. Lower demand will contribute to rising unemployment. In 2004, losses will be about 0.1 percentage point, or just under NOK 1 billion (2001 prices), greater than in the baseline scenario.

The analysis does not reflect the fact that households are a heterogeneous group. Debt burden, for example, varies widely across the different household income deciles and has developed differently over time. See box "Household debt burden by category of household income" in *Financial Stability* 1/2002. This implies that changes in interest rates may have a very different effect on the various categories. In a more micro-based approach, financial institutions' loan losses could be modelled for the various income categories in the household sector.

[11] See Eitrheim and Gulbrandsen (2001) and Benito et al. (2001).

5 Losses on loans to enterprises

In order to calculate the effect of the stress test scenarios on enterprises, we have used Norges Bank's bankruptcy prediction model as well as RIMINI.[12] The bankruptcy prediction model predicts the probability of bankruptcy as a function of selected accounting variables, age, size and industry characteristics. By multiplying the bankruptcy probability for each borrower by the borrower's long-term debt and overdraft debt, we obtain an estimate of how much the lender can expect to lose in the absence of collateral. We have called this estimate risk-weighted debt. In order for us to comment on future developments in financial institutions' loan losses beyond what the model predicts on the basis of historical figures, the model's explanatory variables must be projected for each enterprise. We have done this by assuming that key revenue and expense items in enterprise accounts will vary in pace with changes in estimates for key macroeconomic variables. For example, growth in operating income is projected using estimated mainland GDP growth according to the macroeconomic projections in *Inflation Report* 1/2002 (see Annex B). It is assumed that no enterprise leaves the population and that none are added, and that the age of each enterprise remains constant.

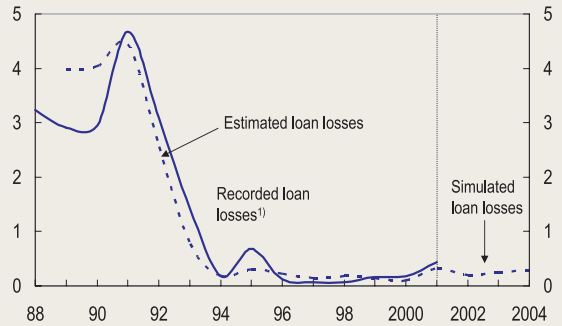
The model uses the projected accounts to generate simulated bankruptcy probabilities and risk-weighted debt. We have developed an econometric model for financial institutions' losses on loans to enterprises in which we use risk-weighted debt in combination with a variable that indicates the value of the lenders' collateral (see (3)):[13]

$$tapfor_t = \underset{(50.3)}{0.954}\ rgjeld_{t-1} - \underset{(-7.0)}{13.34}\ \Delta rph_t \qquad (3)$$

where *TAPFOR* is financial institutions' losses on loans to enterprises measured in 2001 prices, *RGJELD* is the sum of risk-weighted debt for all enterprises measured in 2001 prices and *RPH* is the real price of existing dwellings. Lower case letters indicate logarithmic form and Δ indicates the first difference of the variable. The annual change in real house prices is used as an indicator of the change in the realisation value of the lenders' collateral (see *TG* in equation (1) above). The collateral pledged by enterprises to lenders consists mainly of real estate, operating assets and inventories. However, since information about the realisation value of these assets is not available, we have chosen to use changes in house prices as an indicator. According to the model in (3), a 1 per cent increase in risk-weighted debt will increase loan losses by 0.95 per cent. A 1 percentage point reduction in the value of financial institutions' collateral will increase losses by 13 per cent. The test properties of (3) are shown in Annex C.

According to the simulations based on the baseline scenario, financial institutions' loan losses will amount to 0.28 per cent of enterprises' loan debt, or NOK 2.4 billion in 2001 prices in 2004 (see Chart 3). This is in line with losses in 2001, but a rise in relation to the latter half of the 1990s.

Chart 3 Financial institutions' losses on loans to enterprises as a percentage of corporate loan debt

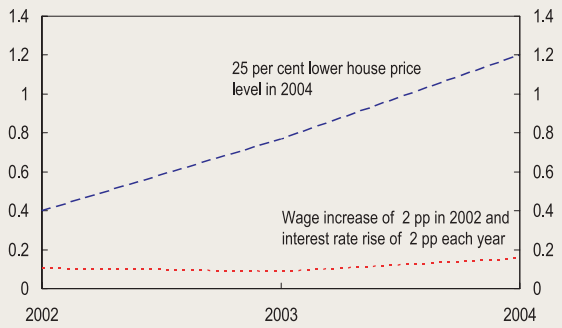


1) Actual losses and loss provisions adjusted for reversals of loss provisions for previous years

Source: Norges Bank

The scenario with higher wage growth and higher interest rates will increase financial institutions' losses on loans to enterprises by between 0.1 and 0.2 percentage point each year compared with the baseline scenario (see Chart 4). One reason for the change having little impact compared with the baseline scenario is that labour costs and interest expenses constitute a relatively small share of enterprises' total expenses in the accounts. Labour costs and interest expenses are also included indirectly to a varying degree in the cost of goods for enterprises, but this is not captured in our simulations. The effect on corporate earnings, and hence on bankruptcy probability, is thus underestimated to some

Chart 4 Effect on financial institutions' losses on loans to enterprises.[1)] Deviation from baseline scenario in percentage points



1) Measured as a percentage of corporate loan debt

Source: Norges Bank

12) See Bernhardsen (2001) and Eklund et al. (2001).

13) Numbers in brackets show the statistical significance (t-values) of the coefficients.

extent. Another reason for the small differences is that the rise in enterprise debt is assumed to be the same in this stress test scenario and in the baseline scenario.

The scenario with a fall in house prices will result in far greater loan losses. This is to some extent due to an increase in bankruptcy probabilities, but mainly to the sharp reduction in the realisation value of financial institutions' collateral. In this case, loan losses will be 1.2 percentage points higher than the baseline scenario in 2004, but still far lower than the loss level in the early 1990s. In 1991, loan losses were equivalent to 4.7 per cent of enterprises' loan debt. One reason for the losses being far lower in this scenario than during the banking crisis is that the majority of enterprises are far more financially solid today, and are therefore better able to withstand deterioration in profitability and financial strength. Moreover, macroeconomic developments during the banking crisis were far more negative than has been assumed in the scenario with a fall in house prices.

The results of the stress tests must be interpreted with caution. There is considerable uncertainty as to how well the model captures the effects of the estimates for macroeconomic developments. It is also unrealistic to expect all enterprises to be affected to an equal extent by the various changes. Furthermore, it is natural to assume that the property industry, which accounts for a large share of enterprise sector debt, will be more severely affected than other industries by a sharp decline in the property market. In our calculations we have also assumed that some accounting items, such as other operating expenses and dividends, remain unchanged in the various scenarios during the simulation period.

One feature of the method used is that the bankruptcy probability of financially solid enterprises diminishes, while that of financially weak enterprises increases. In reality, the enterprises in the population will change over time. At any point in time, each will face individual changes with respect to earnings. Thus a favourable (poor) result one year will not necessarily be followed by favourable (poor) results in subsequent years. It may also be assumed that some of the enterprises that continue to do well will decide to make new investments, acquire other enterprises, give their owners extra large dividends, etc. Although such measures may lead to improved profitability and financial strength in the long term, they may contribute to increasing the probability of bankruptcy in the short term. Similarly, enterprises that record a poor performance may implement measures to curb the negative trend. This may help to reduce the probability of bankruptcy. Our analysis is based only on "mechanical" projections of enterprise earnings, liquidity and equity capital.

Another important factor we do not capture is the natural "dynamics" in the enterprise sector, i.e. that new enterprises are established, existing enterprises go bankrupt, are wound up, or merge, strong enterprises acquire weak ones, etc. We have not taken this into account in our analysis. There will therefore be a margin of error when the simulated risk-weighted debt is compared with the actual risk-weighted debt. The further ahead in time the accounts are projected, the larger this margin of error will be. This is partly because the (constant) simulation sample will increasingly differ from actual developments in the enterprise population.

6 Conclusion

In this article, we have presented some examples of how stress tests may be used to analyse the risk of financial instability. The use of macroeconomic models enables us to quantify the effects of various macroeconomic changes on financial institutions' loan losses. Our analysis has the advantage that it captures important effects resulting from the interaction between the household and enterprise sectors.

The analysis indicates that negative changes in the real economy will lead to higher losses on loans to enterprises and households. The stress test scenario with falling property prices will have by far the most negative effect on financial institutions' losses, and in particular losses on loans to enterprises. In this case, financial institutions' losses on loans to households and enterprises (measured as a percentage of household and corporate loan debt) will be about 0.6 percentage point higher than the baseline scenario in 2004. The stress test scenario with higher wages and interest rates results in a 0.13 percentage point increase in loan losses. The stress test scenarios we have examined indicate far lower loan losses than during the banking crisis in the early 1990s. However, macroeconomic developments during the banking crisis were far more negative than assumed in the two scenarios used in this analysis.

The results will to a great extent depend on the models used and the assumptions on which the scenario is based. Nonetheless, they give an indication of how vulnerable financial institutions may be in the event of changes in economic developments. Stress tests are at an early stage of development and use, and the methodology is being further developed by Norges Bank and other institutions. It is, for example, relevant to analyse to what extent any retroactive effects from financial institutions to the real economy will affect loan losses. It is likely, for example, that higher losses in financial institutions will lead to more restrictive lending practices and a closer focus on credit risk.

References:

Benito, Andrew, John Whitley and Garry Young (2001): "Analysing corporate and household sector balance sheets", *Financial Stability Review*, Bank of England, December.

Bernhardsen, Eivind (2001): "A model of bankruptcy prediction", *Working Paper* 2001/10, Norges Bank.

BIS (2001a): "The new Basel Capital Accord", *Consultative Document*, 16 January, BIS.

BIS (2001b): "Stress testing in practice: a survey of 43 major financial institutions". *BIS Quarterly Review*, June 2001.

Eklund, Trond, Kai Larsen and Eivind Bernhardsen (2001): "Model for analysing credit risk in the enterprise sector", *Economic Bulletin* 3/01, Norges Bank.

IMF (2001): "Finland: Financial System Stability Assessment" *IMF Country Report* No. 01/214, November 2001

Banking, Insurance and Securities Commission (2001): "Kredittilsynets boliglånsundersøkelse i 2001" (The Banking, Insurance and Securities Commission 2001 mortgage survey), Press release No. 20/2001, Oslo, 3 July.

Olsen, Kjetil and Fredrik Wulfsberg (2001): "The role of assessment and judgment in the macroeconomic model RIMINI", *Economic Bulletin* 2/01, Norges Bank.

Norges Bank (2002): *Financial Stability* No. 1/2002.

Annex A. Model of financial institutions' losses on loans to households

$$tapagj_t = \underset{(5.7)}{3.73}\ gjeldsb_t - \underset{(-7.8)}{1.63}\ rhusbol_t + \underset{(5.5)}{13.33}\ RLB_t + \underset{(5.5)}{31.18}\ UAKU_t - \underset{(24.2)}{6.46}\ DUM97_t$$

Properties

Estimation period 1978-2001 (T = 24)
Sigma = 0.238342
RSS = 1.07932957
Log-likelihood = 3.16604
Durbin-Watson = 2.07

AR 1-2 test: $F(2.17) = 0.25855$ [0.7752]
ARCH 1-1 test: $F(1.17) = 0.28035$ [0.6033]
Normality: $\chi^2(2) = 1.3879$ [0.4996]
Hetero test: $F(9, 9) = 0.78893$ [0.6351]
RESET test: $F(1, 18) = 0.56228$ [0.4630]

The figures in brackets are significance probabilities.

Annex B. Variables underlying projections of corporate accounts

The key explanatory variables in Norges Bank's bankruptcy prediction model are corporate earnings, liquidity and financial strength. Changes in these variables are mainly reflected in enterprises' operating income, the cost of goods, labour costs and interest expenses. These accounting items are influenced by a number of internal and external factors. It is unrealistic to take all the factors that influence them into consideration. We have decided to focus on the following accounting items and factors:

Accounting item	*Projected on the basis of estimates for*
Operating income	Mainland GDP[1]
Cost of goods	Mainland GDP[1]
Labour costs	Annual wages and cost of additional vacation days[1]
Interest expenses	Norges Bank's deposit rate plus fixed additional amount for risk and administration[2]
Real estate and buildings[3]	Real house prices[1]
Long-term debt and overdraft debt	Average net increase in debt[4]

[1] See *Inflation Report* 1/2002 and the above stress test scenarios

[2] Estimated on the basis of figures from Norges Bank's interest rate statistics

[3] Only applies to the scenario with a fall in house prices.

[4] Calculated as an average of the annual net change in enterprises' long-term debt and overdraft debt in the period 1995-2000. Source: Norges Bank

Annex C. Model of financial institutions' losses on loans to enterprises

$$tapfor_t = \underset{(50.3)}{0.954}\ rgjeld_{t-1} - \underset{(-7.0)}{13.34}\ \Delta rph_t$$

Properties

Estimation period: 1989 – 2001 (T = 13)
Sigma = 0.567296
RSS = 3.54007181
Log-likelihood = -9.99099
Durbin-Watson = 1.37
AR 1-1 test: $F(1, 10) = 0.92840$ [0.3580]

ARCH 1-1 test: $F(1.9) = 0.00059521$ [0.9811]
Normality: $\chi^22(2) = 0.41951$ [0.8108]
Hetero test: $F(4, 6) = 1.6980$ [0.2676]
Hetero-X test: $F(5, 5) = 1.1885$ [0.4272]
RESET test: $F(1, 10) = 0.013015$ [0.9114]

The figures in brackets are significance probabilities.

Statistical annex

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

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

	31.12.2000	31.12.2001	31.05.2002	30.06.2002	31.07.2002
FINANCIAL ASSETS					
Foreign assets	**646 120**	**837 262**	**833 648**	**799 961**	**803 260**
International reserves [1) 2)]	245 863	211 537	196 249	184 983	182 675
Investment of Government Petroleum Fund	386 126	613 317	626 023	605 057	610 245
Other foreign assets	14 131	12 408	11 376	9 921	10 340
Claims on Norwegian financial institutions	**22 194**	**15 242**	**8 104**	**885**	**223**
Loans to private banks	21 158	15 140	8 002	5	8
Other assets in th form of deposits, securities, loans and overdrafts	1 036	102	102	880	215
Claims on central government	**13 909**	**11 813**	**13 759**	**12 875**	**13 307**
Bearer bonds	10 743	9 073	10 299	10 397	10 436
Other securities	2 776	2 451	3 245	2 215	2 545
Other claims	390	289	215	263	326
Claims on other Norwegian sectors	**1 306**	**1 327**	**1 077**	**1 358**	**1 224**
Securities and loans	576	603	616	620	624
Other claims	730	724	461	738	600
Stock, production units	**26**	**27**	**20**	**20**	**20**
Fixed assets	**1 939**	**1 832**	**1 794**	**1 787**	**1 630**
Valuation adjustments [3)]	**0**	**0**	**78 779**	**119 444**	**129 102**
Expenses	**0**	**0**	**5 426**	**6 542**	**8 082**
Total assets	**685 494**	**867 503**	**942 607**	**942 872**	**956 848**
LIABILITIES AND CAPITAL					
Foreign liabilities	**74 998**	**56 211**	**53 669**	**45 566**	**43 690**
IMF debt in NOK	14 107	12 383	11 351	9 896	10 315
Other foreign liabilities	60 891	43 828	42 318	35 670	33 375
Notes and coins in circulation	**46 952**	**46 633**	**40 784**	**41 899**	**40 945**
Domestic deposits	**505 837**	**719 980**	**732 384**	**702 046**	**706 605**
Treasury	96 083	83 503	96 712	57 475	46 947
Government Petroleum Fund	386 126	613 317	626 023	605 057	610 245
Other public administration (excl.municipalities)	293	45	116	95	83
Private banks	21 647	21 614	8 428	38 399	47 888
Other financial institutions	1 591	1 406	1 027	935	1 356
Other Norwegian sectors	97	95	78	85	86
Accured interest to the Treasury	**0**	**0**	**1 118**	**29**	**199**
Other domestic debt	**10 955**	**2 697**	**3 335**	**4 654**	**3 248**
Calculated value of SDRs in the IMF	**1 934**	**1 898**	**1 725**	**1 650**	**1 684**
Capital	**44 818**	**40 084**	**40 084**	**40 084**	**40 084**
Valuation adjustments	**0**	**0**	**0**	**0**	**0**
Revenues [4)]	**0**	**0**	**69 508**	**106 944**	**120 393**
Total liabilities and capital	**685 494**	**867 503**	**942 607**	**942 872**	**956 848**
Off balance-sheet items:					
Foreign currency solf forward	32 595	11 541	24 000	21 642	24 104
Foreign currency purchased forward	25 699	13 311	25 175	23 465	25 541
Derivatives sold	77 743	121 116	114 931	171 240	149 456
Derivatives purchased	83 094	145 597	112 884	167 825	166 146
Alloted, unpaid shares in the BIS	314	324	324	324	324

[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. Spesification of international reserves[1]. In million of NOK

	31.12.2000	31.12.2001	31.05.2002	30.06.2002	31.07.2002
Gold	2 275	2 346	2 474	2 230	2 194
Special drawing rigths in the IMF	2 713	3 192	2 512	2 394	2 442
Reserve position in the IMF	5 166	6 533	5 837	6 549	6 469
Loans to the IMF	1 269	1 165	1 027	950	961
Bank deposits abroad	73 397	55 447	45 861	42 190	43 590
Foreign Treasury bills	-	-	459	289	303
Foreign bearer bonds [2]	157 893	117 275	115 790	110 454	108 611
Foreign shares	-	22 952	19 755	17 789	16 219
Accrued interest	3 190	2 628	2 534	2 139	1 885
Short-term assets	-40	-	-	-	-
Total	245 863	211 538	196 249	184 984	182 674

[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 million of NOK

	30.06.2001	30.09.2001	31.12.2001	31.03.2002	30.06.2002
Cash holdings and bank deposits	2 697	2 817	2 890	2 457	2 255
Total loans	175 530	176 942	178 665	182 931	183 194
Of which:					
To the general public [1]	173 514	174 919	176 538	180 654	180 934
Claims on the	-	-	-	-	-
Other assets	7 660	8 778	8 364	10 131	8 999
Total assets	185 887	188 537	189 919	195 519	194 448
Bearer bond issues	51	49	45	44	39
Of which:					
In Norwegian kroner	51	49	45	44	39
In foreign currency	-	-	-	-	-
Other loans	175 272	176 604	177 806	182 622	182 964
Of which:					
From the	175 272	176 604	177 806	182 622	182 964
Other liabilities, etc.	4 939	6 129	5 213	5 968	4 549
Share capital, reserves	5 625	5 755	6 855	6 885	6 896
Total liabilities and capital	185 887	188 537	189 919	195 519	194 448

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

Source: Statistics Norway and Norges Bank

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

	30.06.2001	30.09.2001	31.12.2001	31.03.2002	30.06.2002
Cash	5 058	4 735	5 290	4 599	4 644
Deposits with Norges Bank	12 736	32 773	23 974	50 756	39 084
Deposits with commercial and savings banks	22 892	18 262	16 633	16 750	19 366
Deposits with foreign banks	64 199	54 652	42 099	48 820	43 561
Treasury bills	5 637	5 040	4 485	3 834	3 440
Other short-term paper	17 049	20 493	16 643	13 099	14 206
Government bonds etc. [1]	6 331	5 179	4 603	5 856	5 306
Other bearer bonds	85 735	85 937	84 116	84 617	85 868
Loans to foreign countries	50 715	54 502	51 642	51 208	49 960
Loans to the general public	987 543	1 007 913	1 030 481	1 046 090	1 073 189
Of which:					
In foreign currency	83 854	85 183	87 455	88 531	84 160
Loans to mortgage and finance cos., insurance etc. [2]	76 772	76 531	79 542	84 110	87 059
Loans to central government and social security admin.	232	311	240	134	369
Other assets [3]	96 531	95 182	91 737	98 603	100 496
Total assets	1 431 430	1 461 510	1 451 485	1 508 476	1 526 548
Deposits from the general public	683 358	679 493	703 269	714 090	734 771
Of which:					
In foreign currency	26 641	25 764	25 886	22 759	21 553
Deposits from commercial and savings banks	26 168	27 143	18 137	25 938	22 498
Deposits from mortagage and fin.cos., and inst.etc. [2]	39 852	37 634	39 029	40 509	52 998
Deposits from	4 375	5 443	8 511	8 204	8 696
Fund from CDs	84 991	87 612	78 067	67 251	72 744
Loans and deposits from Norges Bank	16 640	2	15 779	487	705
Loans and deposits from abroad	11 425	10 990	16 091	17 029	16 291
Other liabilities	460 412	507 756	471 740	531 053	511 700
Share capital/primary capital	25 401	25 182	25 322	25 328	25 839
Allocations, reserves etc.	71 656	71 390	75 540	75 719	75 688
Net income	7 152	8 865	0	2 868	4 618
Total liabilities and capital	1 431 430	1 461 510	1 451 485	1 508 476	1 526 548
Specifications:					
Foreign assets	164 494	155 570	137 015	146 581	151 662
Foreign debt	340 298	380 364	358 433	394 688	360 357

[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.

Source: Statistics Norway and Norges Bank

Table 5. Commercial and savings banks. Loans and deposits by sector[1]. In millions of NOK

	30.06.2001	30.09.2001	31.12.2001	31.03.2002	30.06.2002
Loans to:					
Local government (incl. municipal enterprises)	12 482	12 533	11 945	10 632	10 224
Non-financial enterprises[2]	351 578	355 565	358 719	365 993	369 751
Households[3]	623 483	639 815	659 818	669 465	693 213
Total loans to the general public	987 543	1 007 913	1 030 481	1 046 090	1 073 189
Deposits from:					
Local government (incl.municipal enterprises)	46 109	42 455	45 955	47 519	46 315
Non-financial enterprises[2]	202 920	209 155	219 365	207 452	207 857
Households[3]	434 329	427 883	437 948	459 119	480 599
Total deposits from the private sector and municipalities	683 358	679 494	703 269	714 090	734 771

[1] Includes local government administration, non-financial enterprises and huseholds.

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

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

Source: Statistics Norway and Norges Bank

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

	30.06.2001	30.09.2001	31.12.2001	31.03.2002	30.06.2002
Cash and bank deposits	6 083	6 573	4 586	5 011	4 405
Notes and certificates	12 730	13 730	809	1 683	1 359
Government bonds [1]	932	904	1 238	908	915
Other bearer bonds	48 305	43 032	41 337	51 023	58 931
Loans to:					
Financial enterprises	19 797	21 369	24 981	23 874	24 473
The general public [2]	149 450	154 006	167 642	163 948	165 692
Other sectors	13 786	12 775	11 656	11 106	11 796
Others assets [3]	-2 161	-803	-1 986	-1 980	-1 041
Total assets	248 922	251 586	250 263	255 573	266 530
Notes and certificates	38 497	37 006	23 371	31 607	34 145
Bearer bonds issues in NOK [4]	60 292	60 173	61 067	59 446	60 651
Bearer bond issues in foreign currency [4]	79 624	79 946	84 857	81 688	85 272
Other funding	54 449	58 448	65 650	67 331	70 832
Equity capital	11 841	12 199	11 436	11 705	12 012
Other liabilities	4 219	3 814	3 882	3 796	3 618
Total liabilities and capital	248 922	251 586	250 263	255 573	266 530

[1] Includes government bonds and bonds issued by state lending institutions.
[2] Includes local government administration, non-financial enterprises and households.
[3] Foreign exchange differences in connection with swaps are entered net in this item. This may result in negative figures for some periods.
[4] Purchase of own bearer bonds deducted.
Source: Statistics Norway and Norges Bank

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

	30.06.2001	30.09.2001	31.12.2001	31.03.2002	30.06.2002
Cash and bank deposits	2 271	1 535	2 176	2 011	1 787
Notes and certificates	99	99	109	105	104
Bearer bonds	39	40	20	20	0
Loans [1] (gross) to:	80 491	82 425	82 605	85 637	86 750
The general public [2] (net)	75 348	78 092	78 432	81 538	83 114
Other sectors (net)	4 964	4 091	3 959	3 884	3 446
Other assets [3]	2 704	2 382	2 693	2 316	2 212
Total assets	85 604	86 481	87 603	90 089	90 853
Notes and certificates	575	500	575	550	675
Bearer bonds	115	115	115	115	115
Loans from non-banks	9 617	9 875	10 529	10 010	10 108
Loans from banks	63 004	63 180	60 033	65 320	63 661
Other liabilities	5 073	5 311	9 144	6 649	8 303
Capital, reserves	7 220	7 500	7 207	7 445	7 991
Total liabilities and capital	85 604	86 481	87 603	90 089	90 853

[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

	31.03.2001	30.06.2001	30.09.2001	31.12.2001	31.03.2002
Cash and bank deposits	13 800	11 425	11 167	13 467	16 315
Norwegian notes and certificates	16 707	19 780	27 871	29 699	31 834
Foreign Treasury bills and notes	195	2 168	933	1 189	3 002
Norwegian bearer bonds	97 921	99 000	100 305	101 819	106 898
Foreign bearer bonds	77 827	81 680	83 383	83 147	79 495
Norwegian shares, units, primary capital certificates and interests	49 218	48 309	44 639	47 506	44 841
Foreign shares, units, primary capital certificates and interests	73 729	73 152	49 349	57 243	62 451
Loans to the general public [1]	24 658	24 405	24 360	24 482	23 013
Loans to other sectors	1 035	1 038	1 012	935	738
Other specified assets	44 172	44 484	53 959	53 214	54 072
Total assets	399 262	405 441	396 978	412 701	422 659

[1] Includes local government administration, non-financial enterprises and households
Source: Statistics Norway

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

	31.03.2001	30.06.2001	30.09.2001	31.12.2001	31.03.2002
Cash and bank deposits	6 107	6 126	5 767	6 454	7 454
Norwegian notes and certificates	3 866	3 945	4 492	3 631	5 057
Foreign notes and certificates	200	131	92	249	372
Norwegian bearer bonds	13 428	12 471	12 854	13 111	13 470
Foreign bearer bonds	13 579	12 411	12 851	13 005	13 228
Norwegian shares, units, primary capital certificates, interests	10 627	11 354	10 269	10 807	9 933
Foreign shares, units, primary capital certificates, interests	10 856	12 666	10 428	11 677	11 148
Loans to the general public [1]	1 643	1 644	1 243	934	854
Loans to other sectors	98	114	89	148	144
Other specified sectors	35 861	39 186	35 997	40 452	45 485
Total assets	96 265	100 048	94 082	100 468	107 145

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

Source: Statistics Norway

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

	31.03.2001	30.06.2001	30.09.2001	31.12.2001	31.03.2002
Bank deposits	4 251	4 925	4 384	3 857	4 120
Treasury bills, etc.[1]	2 286	1 576	1 661	867	957
Other Norwegian short-term paper	18 574	18 525	19 768	19 003	19 014
Foreign short-term paper	56	63	55	55	41
Government bonds, etc.[2]	3 771	2 919	3 077	3 959	4 322
Other Norwegian bonds	20 662	22 030	24 920	24 788	24 679
Foreign bonds	1 555	1 738	1 538	1 516	1 072
Norwegian equities	35 546	35 902	27 337	30 301	32 116
Foreign equities	49 349	52 126	40 009	47 140	48 373
Other assets	1 935	1 981	1 746	1 958	1 935
Total assets	137 986	141 785	124 494	133 444	136 627

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

[2] Comprises government bonds and bonds issued by state lending institutions.

Sources: Norwegian Central Securities Depository and Norges Bank

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

	31.03.2001	30.06.2001	30.09.2001	31.12.2001	31.03.2002
Central government and social security administration	393	341	341	320	332
Commercial and savings banks	3511	3675	3793	3508	3550
Other financial corporations	17188	16859	14718	15524	14566
Local government corporations and municipal enterprises	6126	6778	7259	7840	8276
Other corporations	25477	26381	23688	24691	25191
Households	80504	82806	70320	76777	79460
Rest of the world	3288	3446	2877	3284	3754
Mutual funds shares in total	136 488	140 287	122 996	131 946	135 129

Sources: Norges Bank and the Norwegian Central Securities Depository

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

Holding sector	31.03.2001	30.06.2001	30.09.2001	31.12.2001	31.03.2002
Central government and social security administration	141 244	260 012	223 630	249 604	271 787
Norges Bank	0	0	0	0	0
State lending institutions	25	29	10	4	4
Savings banks	3 339	3 515	3 152	3 232	3 393
Commercial banks	10 942	10 268	8 979	9 283	13 983
Insurance companies	42 836	41 267	32 562	36 556	37 338
Mortgage companies	183	175	162	174	201
Finance companies	6	6	4	4	5
Mutual funds	40 815	41 184	30 713	34 477	36 460
Other financial enterprises	30 009	36 575	30 210	32 059	31 512
Local government administration and municipal enterprises	3 043	2 775	2 452	2 755	5 528
State enterprises	9 114	9 998	7 371	9 412	10 226
Other private enterprises	169 242	184 572	172 690	143 658	163 783
Wage-earning households	57 073	70 781	52 235	50 497	54 208
Other households	3 521	3 905	3 412	2 678	2 765
Rest of the world	252 512	307 045	248 369	242 456	278 695
Unspecified sector	1 760	1 570	1 762	1 925	1 865
Total	765 663	973 678	817 716	818 774	911 755

Sources: Norwegian Central Securities Depository and Norges Bank

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

	31.03.2001	30.06.2001	30.09.2001	31.12.2001	31.03.2002
Savings banks	8 986	8 986	8 991	9 126	9 126
Commercial banks	15 292	15 562	15 702	15 712	15 712
Insurance companies	886	886	1 123	1 124	1 124
Mortgage companies	1 955	1 955	2 194	2 194	2 194
Finance companies	64	64	64	5	5
Other financial enterprises	12 048	12 131	12 156	11 389	11 411
Local government administration and municipal enterprises	2	2	2	2	2
State enterprises	12 947	18 421	18 421	18 425	18 425
Other private enterprises	47 285	47 462	47 019	46 027	45 105
Rest of the world	6 668	7 685	7 023	7 194	6 884
Unspecified sector	0	0	0	0	0
Total	106 133	113 154	112 695	111 198	109 987

Sources: Norwegian Central Securities Depository and Norges Bank

Table 13. Net purchases and net sales (-) in the primary and secondary markets of shares registered with the Norwegian Central Securities Depository, by purchasing, selling and issuing sector [1]. Estimated market value. In millions of NOK

2002 Q1	Purchasing/ selling sector																	
Issuing sector	Cent. govt and social security	Norges Bank	State lending inst.	Sav. banks	Comm. banks	Insur. comp.	Mort. comp.	Fin. comp.	Secur. funds	Other financ. enterpr.	Local govt & munic. enterpr.	State enterpr.	Other private enterpr.	Wage-earning house-holds	Other house-holds	Rest of the world	Unsp. sector	Total [2]
Comm. banks	0	0	0	-148	8	26	0	0	-35	-107	20	5	68	64	34	65	1	2
Insurance comp.	0	0	0	0	0	0	0	0	0	-15	0	0	4	8	0	-1	4	0
Mortgage comp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finance comp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other financial enterpr.	-85	0	0	-3	1 274	-48	0	0	-151	39	5	6	-152	-30	33	-845	1	43
Local govt. admin. and municipal enterprises	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
State enterprises	-1	0	0	12	527	90	-5	0	-259	-125	-6	-37	54	0	-7	-243	1	1
Other private enterprises	-57	0	-5	202	8 049	-1 283	16	1	56	-1 820	168	21	4 581	474	-37	-2 558	83	7 891
Rest of the world	-190	0	0	6	3 818	-449	2	0	-272	-727	22	0	-1 638	-97	41	-679	1	-161
Unspecified sector	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-333	0	-5	69	13 677	-1 663	12	1	-660	-2 755	209	-6	2 919	419	63	-4 261	90	7 776

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

	31.03.2001	30.06.2001	30.09.2001	31.12.2001	31.03.2002
Central government and social security administration	28 274	28 601	28 004	27 682	26 484
Norges Bank	10 148	7 625	6 986	6 531	5 610
State lending institutions	257	241	232	219	209
Savings banks	26 602	24 741	25 114	26 733	28 357
Commercial banks	39 327	39 737	39 768	35 598	38 549
Insurance companies	153 860	153 099	154 734	160 077	163 016
Mortgage companies	15 831	14 311	13 415	12 880	13 159
Finance companies	5	7	33	23	27
Mutual funds	24 899	25 460	28 517	29 428	29 602
Other financial enterprises	1 711	1 462	1 685	3 353	3 534
Local government administration and municipal enterprises	10 556	10 441	10 642	10 694	14 215
State enterprises	3 098	3 150	3 457	3 166	4 105
Other private enterprises	23 418	21 870	21 966	24 049	23 329
Wage-earning households	11 092	12 841	13 286	14 972	15 841
Other households	4 270	4 567	4 651	4 882	4 814
Rest of the world	69 936	62 187	60 872	61 131	57 974
Unspecified sector	762	795	825	948	973
Total	424 048	411 135	414 185	422 367	429 799

Sources: Norwegian Central Securities Depository and Norges Bank

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

	31.03.2001	30.06.2001	30.09.2001	31.12.2001	31.03.2002
Central government and social security administration	148 052	126 354	127 776	129 762	132 785
State lending institutions	316	295	284	263	252
Savings banks	51 964	55 399	58 484	60 263	64 969
Commercial banks	56 147	62 005	61 675	58 601	63 694
Insurance companies	819	994	994	994	990
Mortgage companies	67 686	67 141	66 510	66 988	66 187
Finance companies	75	75	50	50	550
Other financial enterprises	2 300	2 300	2 300	2 300	2 300
Local government administration and municipal enterprises	49 211	50 404	47 198	46 466	44 411
State enterprises	14 904	15 496	12 685	14 854	14 398
Other private enterprises	29 471	30 893	32 908	35 488	36 716
Households	27	27	27	23	23
Rest of the world	6 931	7 586	8 086	9 698	10 191
Unspecified sector	0	0	0	0	0
Total	427 901	418 968	418 977	425 750	437 466

Sources: Norwegian Central Securities Depository and Norges Bank

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

2002 Q1	Purchasing/ selling sector																	
Issuing sector	Cent. govt and social security	Norges Bank	State lending inst.	Sav. banks	Comm. banks	Insur. comp.	Mort. comp.	Fin. comp.	Secur. funds	Other financ. enterpr.	Local govt & munic. enterpr.	State enterpr.	Other private enterpr.	Wage-earning house-holds	Other house-holds	Rest of the world	Unsp. sector	Total [2)]
Central government and social security admin.	-1 469	-826	0	609	2 702	139	-215	-6	429	28	542	1 510	-15	-2	-10	-440	3	2 979
State lending institutions	0	0	-9	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	-11
Savings banks	63	0	0	1 036	-5	1 679	635	7	460	-84	309	59	302	257	43	-58	4	4 706
Commercial banks	598	0	0	-549	161	3 426	54	5	-8	55	244	21	265	727	-94	149	35	5 091
Insurance comp.	0	0	0	0	5	6	0	0	-23	0	0	0	-5	0	-14	45	-1	13
Mortgage comp.	105	0	0	72	661	-531	-58	-2	177	-138	26	13	-456	-31	29	-670	2	-802
Finance comp.	0	0	0	310	0	80	0	0	40	0	23	0	35	10	2	0	0	500
Other financial enterprises	0	0	0	36	61	-82	0	0	-27	0	-14	0	0	0	5	20	0	0
Loc. govt. adm.+ mun. ent.	-55	0	0	129	-708	211	-53	0	-296	14	149	-49	-110	-2	5	-695	0	-1 458
State enterprises	0	0	0	53	133	78	4	0	-83	8	-9	-585	-8	2	0	-48	0	-455
Other private enterprises	237	0	0	122	-739	-77	-11	0	-116	414	2 362	13	-445	-49	35	-423	-11	1 313
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	1	245	162	15	0	4	-5	-2	0	-1	20	-5	59	0	493
Unspecified sector	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-521	-826	-9	1 820	2 517	5 091	371	4	557	293	3 630	982	-439	931	-3	-2 061	32	12 369

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

	31.03.2001	30.06.2001	30.09.2001	31.12.2001	31.03.2002
Central government and social security administration	8 465	8 248	7 889	5 680	6 444
Norges Bank	3 010	1 687	2 478	2 451	3 053
State lending institutions	0	0	0	0	0
Savings banks	7 821	8 340	6 847	4 088	3 529
Commercial banks	23 814	17 177	21 024	17 629	13 633
Insurance companies	23 341	30 290	36 746	38 829	42 046
Mortgage companies	1 667	789	1 128	454	173
Finance companies	92	98	73	61	58
Mutual funds	21 482	20 841	22 169	20 690	21 180
Other financial enterprises	1 702	1 508	1 214	2 025	2 656
Local government administration and municipal enterprises	6 340	4 501	4 360	3 244	4 022
State enterprises	2 585	4 978	6 381	4 006	10 944
Other private enterprises	20 112	10 282	10 734	7 225	6 762
Wage-earning households	385	292	363	180	121
Other households	409	484	521	1 354	1 245
Rest of the world	10 147	11 084	10 947	9 995	13 394
Unspecified sector	865	458	429	488	48
Total	132 236	121 057	133 303	118 398	129 308

Sources: Norwegian Central Securities Depository and Norges Bank

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

Issuing sector	30.06.2001	30.09.2001	31.12.2001	31.03.2002	30.06.2002
Central government and social security administration	32 500	35 500	36 000	36 500	33 000
Counties	1 064	2 389	2 172	1 163	1 076
Municipalities	3 155	3 267	3 208	3 280	3 722
State lending institutions	0	0	0	0	0
Commercial banks	17 905	19 724	13 466	21 937	21 744
Savings banks	35 339	38 240	37 965	34 421	36 406
Mortgage companies	7 082	9 177	5 525	4 380	3 572
Finance companies	575	500	575	550	625
Other financial enterprises	0	0	0	0	0
State enterprises	1 800	3 900	2 780	4 530	8 105
Municipal enterprises	11 004	11 693	9 974	11 194	10 439
Private enterprises	11 610	11 530	7 538	11 690	13 723
Rest of the world	2 540	2 040	1 885	2 400	1 125
Total	124 574	137 960	121 088	132 045	133 537

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

Source: Norges Bank

Credit and liquidity trends

Table 19. Credit indicator and money supply

	Volume figures at end of period NOKbn			Percentage growth Over past 12 months			Over past 3 months Annualised rate	
	C2[1]	C3[2]	M2[3]	C2[1]	C3[2]	M2[3]	C2[1]	M2[3]
December 1993	877.7	1 074.1	476.0	-1.8	-1.7	-0.7	0.1	1.6
December 1994	893.5	1 075.8	501.3	2.3	1.3	5.3	2.8	2.4
December 1995	936.0	1 123.6	530.3	4.9	5.2	5.8	5.4	2.2
December 1996	992.7	1 213.6	564.4	6.0	5.3	6.4	7.8	5.2
December 1997	1 099.4	1 361.0	578.5	10.2	10.2	2.5	10.0	3.6
December 1998	1 193.3	1 519.6	605.3	8.3	12.3	4.6	6.5	6.0
December 1999	1 295.3	1 695.0	670.1	8.3	8.0	10.7	9.7	9.2
December 2000	1 461.5	1 916.9	731.8	12.4	10.8	9.2	12.2	8.3
April 2001	1 519.5	1 978.0	740.7	11.6	10.1	8.6	9.6	7.6
May 2001	1 529.7	2 002.2	756.6	11.4	10.9	10.0	9.0	6.2
June 2001	1 542.1	2 014.7	775.7	11.1	10.5	8.6	8.6	8.4
July 2001	1 547.9	2 011.0	773.5	10.7	9.3	8.6	9.4	7.4
August 2001	1 557.1	2 001.0	772.1	10.6	6.7	8.1	9.9	7.1
September 2001	1 572.5	2 011.5	775.8	10.1	5.8	6.5	10.1	5.8
October 2001	1 583.0	2 037.7	781.7	10.2	6.3	8.4	9.8	6.9
November 2001	1 601.0	2 067.4	773.9	9.7	7.1	7.7	9.4	8.3
December 2001	1 608.9	2 070.6	795.0	9.7	7.9	8.6	9.2	12.0
January 2002	1 615.2	2 078.5	821.0	9.4	8.2	9.5	8.4	12.6
February 2002	1 622.1	2 083.2	812.4	8.9	8.1	7.5	7.8	12.1
March 2002	1 633.1	2 097.0	813.1	8.9	8.4	8.1	7.7	5.2
April 2002	1 648.5	2 114.1	800.1	9.0	8.3	8.0	8.6	3.2
May 2002	1 657.2	2 105.9	805.7	9.3	7.8	6.5	10.2	3.7
June 2002	1 670.7		844.6	9.6		8.9	10.8	8.7
July 2002	1 677.2		837.1	9.4		8.2		

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 20. Domestic credit supply to the general public[1], by source. In millions of NOK. 12-month growth as a percentage

	31.12.1999		31.12.2000		31.12.2001		31.07.2002	
	Amount	%	Amount	%	Amount	%	Amount	%
Private banks	819 535	9.5	938 076	13.8	1 030 694	9.6	1 076 156	9.7
State lending institutions	189 651	5.3	167 921	3.9	176 494	5.1	181 108	4.9
Norges Bank	566	6.4	575	1.6	603	4.9	624	5.8
Mortgage companies	93 270	-2.5	144 846	20.4	167 698	15.6	167 109	12.2
Finance companies	58 806	28.4	66 809	12.1	79 474	14.6	82 968	11.3
Life insurance companies	25 062	-11.3	23 047	-8.0	24 482	0.2	22 910	-6.1
Pension funds	4 993	8.2	4 659	-6.7	3 263	0.0	3 263	0.0
Non-life insurance companies	1 321	-59.6	1 649	24.8	934	-43.4	850	-43.7
Bond debt [2]	75 538	2.8	82 838	9.7	89 671	8.2	89 780	0.8
Certificate debt	19 335	82.8	25 059	29.6	24 932	-0.5	40 053	41.5
Other sources	7 175	51.7	6 038	27.4	10 624	76.0	12 385	45.2
Total domestic credit (C2)[3]	1 295 252	8.3	1 461 517	12.4	1 608 869	9.7	1 677 206	9.4

[1] Comprises 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 21. Composition of money supply. In millions of NOK

Actual figures at end of period	Notes and coins	Transaction account deposits	M1[1)]	Other deposits [2)]	CDs	M2[3)]	Change last 12 months in total M2
December 1993	38 003	149 615	185 359	288 396	2 260	476 015	-4 223
December 1994	40 454	172 154	210 108	286 081	5 116	501 305	24 352
December 1995	42 069	178 653	217 727	296 799	15 731	530 257	28 363
December 1996	43 324	208 072	247 937	294 741	21 686	564 364	34 113
December 1997	46 014	227 382	269 597	278 741	30 200	578 538	14 387
December 1998	46 070	237 046	279 188	292 820	33 321	605 329	26 792
December 1999	48 020	300 131	343 496	295 822	30 803	670 121	65 981
December 2000	46 952	328 816	371 340	326 351	34 152	731 843	60 528
April 2001	42 107	328 323	366 756	339 957	33 957	740 670	58 523
May 2001	42 350	339 233	377 740	344 153	34 742	756 635	68 562
June 2001	43 608	340 669	379 824	358 067	37 801	775 692	61 143
July 2001	42 839	325 299	363 721	375 651	34 095	773 467	61 093
August 2001	42 026	311 390	349 126	386 447	36 510	772 083	58 018
September 2001	41 591	333 317	370 697	363 275	41 868	775 840	47 616
October 2001	40 969	331 294	368 173	376 933	36 572	781 678	60 430
November 2001	42 084	327 191	365 086	374 039	34 819	773 944	55 292
December 2001	46 633	344 124	386 162	369 966	38 899	795 027	63 184
January 2002	42 613	350 854	389 293	393 987	37 746	821 026	71 321
February 2002	41 510	346 813	384 287	390 769	37 342	812 398	56 458
March 2002	42 002	346 918	384 789	385 152	43 124	813 065	60 599
April 2002	40 746	337 329	374 096	381 891	44 146	800 133	59 463
May 2002	40 785	342 667	379 393	379 315	47 000	805 708	49 073
June 2002	41 900	378 726	416 494	381 587	46 540	844 621	68 794
July 2002	40 945	365 140	401 900	389 125	46 073	837 098	63 569

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

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

[3)] 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 22. Household financial balance. Financial investments and holdings, by financial instrument. In billions of NOK

	Financial investments					Holdings				
	Year			Q1		Year			31 March	
	1999	2000	2001	2001	2002	1999	2000	2001	2001	2002
Bank deposits, etc.[1)]	33.4	33.0	39.0	10.3	16.8	407.5	440.6	479.6	450.8	496.4
Bonds, etc.[2)]	2.2	7.8	6.7	0.4	0.7	10.9	18.2	21.5	16.3	22.1
Shares, etc.[3)]	2.9	4.2	6.8	1.2	1.2	166.9	174.7	173.0	172.8	177.3
Units in securities funds	7.0	11.9	2.2	1.0	1.2	77.9	85.7	82.6	84.6	85.8
Insurance claims	20.6	22.5	32.4	7.0	11.1	428.0	455.1	470.6	457.8	480.8
Loans and other assets [4)]	5.4	6.0	5.3	11.1	11.7	100.9	106.9	112.2	118.0	123.8
Total assets	71.4	85.4	92.4	31.0	42.7	1192.1	1281.1	1339.5	1300.4	1386.2
Loans from commercial and savings banks	49.9	66.5	67.9	11.0	9.7	525.3	591.9	659.8	603.6	669.4
Loans from state banks and Norges Bank	6.0	7.7	8.5	4.0	4.0	134.3	141.4	149.1	145.2	153.0
Loans from private mortgage companies	0.4	6.2	13.9	3.1	3.8	47.1	53.5	67.5	56.7	71.2
Loans from insurance companies	-3.9	-2.5	-0.8	-0.2	-0.1	19.2	16.7	16.0	16.6	15.9
Other liabilities [5)]	4.7	1.1	1.8	-6.6	-8.1	81.1	81.7	83.0	75.0	74.9
Total liabilities	57.3	79.0	91.3	11.4	9.4	807.0	885.4	975.4	897.2	984.4
Net	14.1	6.4	1.2	19.6	33.2	385.1	395.7	364.1	403.2	401.7

[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), non - registered shares and primary capital certificates.

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

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

Sources: Norges Bank and Statistics Norway

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

	1.1 - 31.12		1.1 - 31.8	
Supply+/withdrawal–	2000	2001	2001	2002
Central govt. and other public accounts (excl. paper issued by state lending inst. and govt.)	-50 855	-115 094	-58 385	17 822
Paper issued by state lending inst. and govt.	-11 103	8 514	11 236	-17 318
Purchase of foreign exchange for Govt Petroleum Fund	53 010	120 300	74 300	38 785
Other foreign exchange transactions	368	91	30	421
Holdings of banknotes and coins [1] (estimate)	775	424	5 014	5 941
Overnight loans	245	-126	-98	0
Fixed-rate loans	-4 425	-6 011	-21 151	-15 140
Other central bank financing	340	-8 135	-22 135	-39 885
Total reserves	-11 645	-37	-11 189	-9 374
Of which:				
Sight deposits with Norges Bank	-11 645	-37	-11 189	-9 374
Treasury bills	0	0	0	0
Other reserves (estimate)	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 24. Nominal interest rates for NOK. Averages. Per cent per annum

	1 month		3 month		12 month		Interest rate on banks' overnight loans in Norges Bank	Interest rate on banks' sight deposits with Norges Bank
	NIDR	NIBOR	NIDR	NIBOR	NIDR	NIBOR		
April 2001	7.6	7.5	7.6	7.5	7.5	7.4	9.0	7.0
May 2001	7.6	7.4	7.6	7.4	7.6	7.5	9.0	7.0
June 2001	7.4	7.3	7.6	7.4	7.7	7.6	9.0	7.0
July 2001	7.4	7.3	7.5	7.4	7.6	7.5	9.0	7.0
August 2001	7.4	7.2	7.5	7.3	7.5	7.3	9.0	7.0
September 2001	7.3	7.1	7.3	7.1	7.2	7.0	9.0	7.0
October 2001	7.2	7.1	7.1	6.9	6.8	6.6	9.0	7.0
November 2001	7.2	7.1	7.1	6.9	6.6	6.4	9.0	7.0
December 2001	7.0	6.9	6.8	6.6	6.4	6.2	8.7	6.7
January 2002	6.7	6.5	6.5	6.3	6.4	6.2	8.5	6.5
February 2002	6.7	6.6	6.7	6.6	6.8	6.7	8.5	6.5
March 2002	6.8	6.7	6.9	6.7	7.0	6.9	8.5	6.5
April 2002	6.9	6.7	6.9	6.8	7.2	7.0	8.5	6.5
May 2002	6.9	6.7	7.1	6.9	7.5	7.3	8.5	6.5
June 2002	7.0	6.9	7.3	7.1	7.7	7.5	8.5	6.5
July 2002	7.3	7.2	7.4	7.3	7.6	7.4	8.9	6.9
August 2002	7.3	7.1	7.4	7.3	7.5	7.3	9.0	7.0

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

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

Source: Norges Bank

Table 25. Short-term interest rates [1] for key currencies in the Euro-market. Per cent per annum

	DKK	GBP	JPY	SEK	USD	EUR	Interest rate differential NOK/EUR
April 2001	5.0	5.3	0.1	4.0	4.6	4.7	2.7
May 2001	5.0	5.2	0.1	4.0	4.0	4.6	2.7
June 2001	4.9	5.2	0.1	4.3	3.8	4.4	2.9
July 2001	4.8	5.2	0.1	4.4	3.7	4.5	2.8
August 2001	4.7	4.9	0.1	4.3	3.5	4.3	2.9
September 2001	4.3	4.6	0.1	4.1	3.0	4.0	3.1
October 2001	3.9	4.4	0.1	3.8	2.4	3.6	3.3
November 2001	3.6	3.9	0.1	3.8	2.1	3.4	3.4
December 2001	3.5	4.0	0.1	3.8	1.9	3.3	3.2
January 2002	3.6	4.0	0.1	3.8	1.8	3.3	2.9
February 2002	3.5	4.0	0.1	3.9	1.9	3.3	3.1
March 2002	3.6	4.1	0.1	4.1	2.0	3.4	3.2
April 2002	3.6	4.1	0.1	4.3	1.9	3.4	3.3
May 2002	3.7	4.1	0.0	4.4	1.9	3.4	3.3
June 2002	3.7	4.1	0.0	4.4	1.8	3.4	3.6
July 2002	3.6	4.0	0.0	4.4	1.8	3.4	3.8
August 2002	3.5	3.9	0.0	4.3	1.8	3.3	3.8

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

Sources: OECD and Norges Bank

Table 26. Yields on Norwegian bonds[1]. Per cent per annum

	3 year		5 year		10 year	
	Govt.	Private	Govt.	Private	Govt.	Private
April 2001	6.7	7.1	6.4	7.1	6.2	7.1
May 2001	6.8	7.3	6.6	7.3	6.5	7.3
June 2001	6.9	7.5	6.8	7.4	6.6	7.4
July 2001	6.9	7.4	6.7	7.4	6.6	7.4
August 2001	6.7	7.2	6.5	7.1	6.5	7.2
September 2001	6.4	7.0	6.4	7.0	6.4	7.1
October 2001	6.0	6.6	6.0	6.7	6.1	6.8
November 2001	5.8	6.5	5.8	6.5	5.9	6.6
December 2001	5.8	6.5	6.0	6.6	6.2	6.8
January 2002	6.0	6.6	6.1	6.7	6.2	6.9
February 2002	6.3	6.9	6.4	6.9	6.4	7.0
March 2002	6.6	7.0	6.5	7.1	6.6	7.1
April 2002	6.6	7.2	6.6	7.1	6.7	7.2
May 2002	6.9	7.3	6.8	7.3	6.8	7.3
June 2002	7.1	7.5	6.9	7.4	6.8	7.4
July 2002	6.8	7.2	6.7	7.1	6.6	7.1
August 2002	6.5	7.0	6.4	6.9	6.3	6.9

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

Source: Norges Bank

Table 27. Yields on government bonds [1] in key currencies. Per cent per annum

	DEM	DKK	FIM	FFR	GBP	JPY	SEK	USD	Interest rate differential NOK/DEM[2]
April 2001	4.9	5.2	5.2	5.0	4.9	1.4	5.0	5.2	1.3
May 2001	5.1	5.4	5.4	5.2	5.1	1.3	5.3	5.4	1.4
June 2001	5.1	5.4	5.3	5.1	5.2	1.2	5.5	5.3	1.5
July 2001	5.1	5.4	5.3	5.1	5.1	1.3	5.5	5.2	1.6
August 2001	4.9	5.2	5.1	5.0	4.9	1.4	5.2	5.1	1.5
September 2001	4.9	5.2	5.1	4.9	4.9	1.4	5.3	4.9	1.5
October 2001	4.7	4.9	4.9	4.7	4.8	1.4	5.2	4.6	1.4
November 2001	4.5	4.7	4.8	4.6	4.6	1.3	5.0	4.7	1.3
December 2001	4.8	5.0	5.0	4.8	4.8	1.4	5.3	5.1	1.4
January 2002	4.9	5.2	5.1	5.0	4.9	1.4	5.3	5.2	1.3
February 2002	5.0	5.2	5.2	5.0	4.9	1.5	5.4	5.0	1.4
March 2002	5.2	5.5	5.4	5.2	5.2	1.5		5.4	1.4
April 2002	5.2	5.5	5.4	5.3	5.2	1.4		5.3	1.5
May 2002	5.2	5.5	5.5	5.3	5.3	1.4		5.2	1.5
June 2002	5.1	5.4	5.3	5.1	5.1	1.4		4.9	1.7
July 2002	4.9	5.2	5.2	5.0	5.0	1.3		4.6	1.6
August 2002	4.7	4.9	4.9	4.7	4.7	1.3		4.2	1.7

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

	All loans				Loans, excl. non-accrual loans [1]			
	Credit lines	Repayment loans			Credit lines	Repayment loans		
	Overdrafts and building loans	Housing loans	Other loans	Total loans	Overdrafts and building loans	Housing loans	Other loans	Total loans
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	11.56	8.59	9.27	9.03	11.75	8.59	9.34	9.06
All banks	11.03	8.50	8.81	8.86	11.18	8.51	8.87	8.90
2001 Q4[2]								
Commercial banks	10.17	8.25	8.03	8.38	10.31	8.27	8.20	8.46
Savings banks	10.84	8.53	8.80	8.80	11.18	8.56	9.06	8.91
All banks	10.47	8.41	8.37	8.59	10.69	8.43	8.58	8.69
2002 Q1								
Commercial banks	9.71	7.86	7.78	8.04	9.83	7.88	7.89	8.11
Savings banks	10.55	8.09	8.58	8.43	10.88	8.12	8.75	8.51
All banks	10.06	7.99	8.14	8.24	10.28	8.01	8.27	8.31
2002 Q2								
Commercial banks	9.55	7.84	7.94	8.08	9.73	7.86	8.06	8.18
Savings banks	10.47	8.09	8.63	8.43	10.80	8.11	8.80	8.51
All banks	9.94	7.98	8.24	8.26	10.18	8.01	8.39	8.35

[1] Up to and including 2001 Q3, non-accrual loans consist only of loans included in calculations of average interest rates with an interest rate of 0% and commission as they are non-performing and the bank has therefore stopped recording interest, commissions and fees from them. From 2001 Q4 non-accrual loans include loans with an interest rate of 0%.

[2] From 2001 Q4 loss provisions are included in "Total loans".

Source: Norges Bank

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

	Ordinary terms	Special terms	Total deposits	Sight deposits	Time deposits	Deposits on transaction accounts	Other deposits
2001 Q2[1)]							
Commercial banks	…	…	5.81	…	…	5.11	6.56
Savings banks	…	…	5.74	…	…	4.55	6.50
All banks	…	…	5.78	…	…	4.87	6.52
2001 Q3							
Commercial banks	…	…	5.89	…	…	5.25	6.54
Savings banks	…	…	5.79	…	…	4.63	6.47
All banks	…	…	5.84	…	…	4.99	6.50
2001 Q4							
Commercial banks	…	…	5.76	…	…	5.10	6.45
Savings banks	…	…	5.72	…	…	4.51	6.42
All banks	…	…	5.74	…	…	4.85	6.43
2002 Q1							
Commercial banks	…	…	5.38	…	…	4.72	6.07
Savings banks	…	…	5.41	…	…	4.26	6.09
All banks	…	…	5.40	…	…	4.53	6.08
2002 Q2							
Commercial banks	…	…	5.27	…	…	4.62	6.05
Savings banks	…	…	5.32	…	…	4.09	6.09
All banks	…	…	5.29	…	…	4.40	6.08

[1)] From 2001 Q2 the manner of collecting data on deposit rates was changed.
This may have influenced deposit rate data from this quarter.

Source: Norges Bank

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

	Housing loans	Other loans	Total loans
2001 Q2	8.1	7.2	7.6
Q3	8.1	7.2	7.6
Q4	7.8	6.9	7.4
2002 Q1	7.7	6.8	7.3
Q2	7.9	7.5	7.5

Source: Norges Bank

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

	Housing loans	Loans to private enterprises	Total loans
2001 Q2	7.6	7.7	7.4
Q3	7.6	7.7	7.4
Q4	7.4	7.5	7.3
2002 Q1	7.4	7.5	7.1
Q2	7.5	7.6	7.2

Source: Norges Bank

Profit/loss and capital adequacy data

Table 32. Profit/loss and capital adequacy: commercial banks[1]. Percentage of average total assets

			Q2	
	2000[3]	2001	2001	2002
Interest income	7.4	7.5	7.7	7.1
Interest expenses	5.5	5.8	6.0	5.3
Net interest income	1.8	1.8	1.8	1.8
Total other operating income	1.3	1.2	1.2	0.8
Other operating expenses	1.9	1.9	1.8	1.7
Operating profit before losses	1.2	1.1	1.2	0.9
Recorded losses on loans and guarantees	0.1	0.3	0.1	0.2
Ordinary operating profit before taxes	1.1	0.7	1.1	0.7
Capital adequacy ratio [2]	11.0	11.7	11.5	11.5
Of which:				
Core capital	7.8	8.7	8.5	8.9

[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 33. Profit/loss and capital adequacy: savings banks [1]. Percentage of average total assets

			Q2	
	2000[3]	2001	2001	2002
Interest income	7.6	8.1	8.2	7.6
Interest expenses	4.9	5.6	5.7	5.1
Net interest income	2.7	2.5	2.5	2.4
Total other operating income	0.8	0.7	0.7	0.6
Other operating expenses	2.0	1.8	1.8	1.8
Operating profit before losses	1.6	1.4	1.3	1.3
Recorded losses on loans and guarantees	0.2	0.3	0.2	0.2
Ordinary operating profit before taxes	1.8	1.2	1.2	1.1
Capital adequacy ratio [2]	13.7	13.8	13.6	13.0
Of which:				
Core capital	10.9	11.0	10.6	10.5

[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 34. Profit/loss and capital adequacy: finance companies [1]. Percentage of average total assets

			Q2	
	2000[3]	2001	2001	2002
Interest income	10.6	10.3	10.4	9.4
Interest expenses	5.6	6.0	6.1	5.4
Net interest income	5.0	4.3	4.3	4.0
Total other operating income	2.3	2.8	2.5	2.3
Other operating expenses	4.7	4.5	4.3	3.9
Operating profit before losses	2.5	2.6	2.5	2.4
Recorded losses on loans and guarantees	0.5	0.5	0.4	0.5
Ordinary operating profit before taxes	2.1	2.1	2.1	2.0
Capital adequacy ratio [2]	12.4	11.3	11.8	10.9
Of which:				
Core capital	11.1	9.8	10.5	9.4

[1] Norwegian parent (excl. OBOS) 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 35. Profit/loss and capital adequacy: mortgage companies[1)3)]. Percentage of average total assets

			Q2	
	2000[4)]	2001	2001	2002
Interest income	6.9	6.5	6.8	5.3
Interest expenses	6.2	5.7	6.1	4.6
Net interest income	0.7	0.8	0.7	0.7
Total other operating income	0.0	0.0	0.0	0.0
Other operating expenses	0.2	0.2	0.2	0.2
Operating profit before losses	0.6	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	0.6	0.6	0.6	0.5
Capital adequacy [2)]	16.6	14.6	15.0	13.4
Of which:				
Core capital	13.0	11.2	12.0	10.9

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

	Trade-weighted krone exchange rate [1)]	1 EUR	100 DEM	100 DKK	100 FIM	100 FRF	1 GBP	100 JPY	100 SEK	1 USD
April 2001	105.50	8.1183	415.08	108.78	136.54	123.76	13.05	7.35	89.04	9.09
May 2001	104.70	7.9952	408.79	107.16	134.47	121.89	13.04	7.51	88.24	9.14
June 2001	104.07	7.9338	405.65	106.44	133.44	120.95	13.02	7.60	86.16	9.30
July 2001	104.15	7.9714	407.57	107.08	134.07	121.52	13.10	7.44	86.05	9.26
August 2001	104.16	8.0552	411.86	108.20	135.48	122.80	12.85	7.37	86.52	8.95
September 2001	102.63	7.9985	408.96	107.49	134.53	121.94	12.84	7.39	82.70	8.78
October 2001	102.80	7.9970	408.88	107.54	134.50	121.91	12.82	7.28	83.50	8.83
November 2001	102.63	7.9224	405.07	106.41	133.24	120.78	12.81	7.29	84.14	8.92
December 2001	103.22	7.9920	408.63	107.38	134.42	121.84	12.90	7.04	84.77	8.96
January 2002	102.72	7.9208	404.98	106.56	133.22	120.75	12.85	6.76	85.84	8.97
February 2002	101.34	7.7853	398.06	104.78	130.94	118.69	12.73	6.70	84.78	8.95
March 2002	100.67	7.7191		103.86			12.53	6.73	85.19	8.81
April 2002	99.16	7.6221		102.53			12.42	6.58	83.44	8.61
May 2002	97.06	7.5147		101.07			11.96	6.49	81.53	8.19
June 2002	95.13	7.4048		99.62			11.50	6.29	81.25	7.75
July 2002	94.58	7.4015		99.62			11.59	6.32	79.94	7.47
August 2002	95.09	7.4284		100.02			11.67	6.39	80.32	7.60

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

	DEM/USD[1)]	DEM/GBP[1)]	USD/EUR	JPY/DEM[1)]	JPY/USD
April 2001	2.1910	3.1445	0.893	56.464	123.71
May 2001	2.2368	3.1887	0.874	54.463	121.82
June 2001	2.2923	3.2100	0.853	53.367	122.33
July 2001	2.2729	3.2140	0.861	54.810	124.57
August 2001	2.1723	3.1209	0.900	55.904	121.44
September 2001	2.1470	3.1401	0.911	55.321	118.78
October 2001	2.1592	3.1348	0.906	56.168	121.28
November 2001	2.2019	3.1629	0.888	55.563	122.35
December 2001	2.1916	3.1558	0.892	58.047	127.21
January 2002	2.2145	3.1720	0.883	59.876	132.60
February 2002	2.2480	3.1979	0.870	59.426	133.59
March 2002			0.876		130.93
April 2002			0.886		130.75
May 2002			0.917		126.29
June 2002			0.955		123.34
July 2002			0.991		118.11
August 2002			0.978		118.95

[1)]Converted via the euro on the basis of the rate at 31.12.1998. This conversion was discontinued as at 28.02.2002.
Source: Norges Bank

Balance of payments

Table 38. Balance of payments. In millions of NOK

			January - June	
	2000	2001	2001	2002
Goods balance	229 595	231 532	119 531	107 350
Service balance	16 917	25 475	14 255	12 223
Net interest and transfers	-26 864	-23 621	-13 528	-4 599
A. Current account balance	219 648	233 386	120 258	114 974
Of which:				
Petroleum activities [1)]	303 153	304 574	156 454	138 433
Shipping [1)]	25 609	44 885	22 549	17 078
Other sectors	-109 114	-116 073	-58 745	-40 537
B. Net capital transfers	-1 683	-840	-548	647
C. Capital outflow excl. Norges Bank	52 273	-23 694	-24 015	37 967
Distributed among:				
Central government sector	-19 294	14 502	8 212	1 847
Local government sector	341	237	448	560
Commercial and savings banks	-43 033	-33 132	14 447	-27 700
Insurance	19 744	9 540	11 614	2 195
Other financial institutions	-12 261	-13 263	2 740	-15 100
Shipping	-8 592	-768	-2 530	2 605
Petroleum activities	24 018	-42 379	-38 363	-19 505
Other private and state enterprises	22 447	5 000	-29 931	38 401
Unallocated (incl. errors and omissions)	68 903	36 569	9 348	54 664
D. Norges Bank's net capital outflow (A + B - C)	165 692	256 240	143 725	77 654
E. Valuation changes in Norges Bank's net foreign assets	17 030	-41 057	-24 795	-102 907
Change in Norges Bank's net foreign assets (D + E)	182 722	215 183	118 930	-25 253

[1)] Specified by Norges Bank on the basis of items from the balance of payments.
Sources: Statistics Norway and Norges Bank

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

	31.12.2000			31.12.2001			30.06.2002		
	Assets	Debt	Net	Assets	Debt	Net	Assets	Debt	Net
Central government admin.	16.0	76.4	-60.4	16.0	62.8	-46.8	15.9	60.5	-44.6
Norges Bank incl. Petroleum Fund	767.6	199.7	567.9	959.5	176.8	782.7	930.1	172.6	757.5
State lending institutions	1.6	0.0	1.6	1.7	0.0	1.7	1.7	0.0	1.7
Commercial and savings banks	131.1	339.5	-208.4	134.6	373.4	-238.8	147.6	378.1	-230.5
Mortgage companies	29.9	94.3	-64.4	39.3	119.0	-79.7	47.7	138.3	-90.6
Finance companies	3.1	18.9	-15.8	3.7	27.4	-23.7	3.6	27.5	-23.9
Insurance companies	193.7	17.0	176.7	187.2	20.2	167.0	191.0	19.7	171.3
Local government	0.0	0.5	-0.5	0.2	0.4	-0.2	0.3	0.0	0.3
Municipal enterprises	0.1	7.6	-7.5	0.3	7.7	-7.4	0.2	6.1	-5.9
State enterprises	157.9	171.9	-14.0	106.3	117.1	-10.8	114.1	110.5	3.6
Other Norwegian sectors	396.0	344.7	51.3	475.9	432.0	43.9	505.5	410.2	95.3
Undistributed errors and omissions	0.0	0.0	0.0	0.0	0.0	0.0	54.7	0.0	54.7
All sectors	1 697.0	1 270.5	426.5	1 924.7	1 336.8	587.9	2 012.4	1 323.5	688.9

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

International capital markets

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

				Q1		Outstanding
	1999	2000	2001	2001	2002	31 March 2002
Total	276.1	1 221.9	858.9	729.2	31.1	11 562.9
Of which vis-à-vis:						
Non-banks	298.2	288.8	446.5	273.5	55.9	3 953.3
Banks (and undistributed)	-22.0	933.1	412.4	455.7	-24.9	7 609.5

1) International assets (external positions) comprise
– cross-border claims in all currencies
– foreign currency loans to residents
– equivalent assets, excluding lending
Source: Bank for International Settlements

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

	December			Q1	
	1999	2000	2001	2001	2002
US dollar (USD)	41.5	43.3	45.3	42.0	45.7
Deutsche mark (DEM)	..	..	..	..	..
Swiss franc (CHF)	2.4	2.2	2.1	2.1	2.2
Japanese yen (JPY)	9.0	8.2	6.2	7.3	5.4
Pound sterling (GBP)	4.3	4.4	4.4	4.5	4.4
French franc (FRF)	..	..	..	..	..
Italian lira (ITL)	..	..	..	..	..
ECU/EURO [1]	27.8	27.8	28.6	28.7	28.7
Undistributed [2]	15.0	14.1	13.4	15.4	13.6
Total in billions of USD	9 939.5	10 778.5	11 592.0	11 177.4	11 562.9

[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 c
Source: Bank for International Settlements

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

	Purchased net from:					Purchased gross from:		Sold gross to:	
	Central govt.[2]	Other financial inst.[3]	Non-financial sector	Foreign sector	Total	Non-financial sector	Foreign sector	Non-financial sector	Foreign sector
July 2001	0.1	1.3	72.2	-20.6	53.0	107.4	606.0	35.2	626.6
August 2001	0.1	32.7	69.5	-7.2	95.1	110.9	679.7	41.4	686.9
September 2001	-0.1	30.1	57.9	9.8	97.7	108.5	688.6	50.6	678.9
October 2001	0.0	31.0	64.5	-22.8	72.7	107.7	644.6	43.2	667.4
November 2001	-0.2	39.4	60.5	-37.4	62.3	105.9	679.3	45.4	716.7
December 2001	0.4	43.6	66.8	-57.0	53.8	107.8	725.7	41.0	782.7
January 2002	0.4	59.4	55.8	-36.3	79.3	107.0	744.0	51.2	780.3
February 2002	0.3	47.7	63.5	-18.4	93.1	106.3	733.7	42.8	752.0
March 2002	0.2	45.9	56.6	7.0	109.7	99.0	725.3	42.4	718.3
April 2002	0.1	56.5	64.1	-24.2	96.5	105.4	650.2	41.3	674.4
May 2002	0.1	51.1	60.5	-21.3	90.4	108.1	636.6	47.6	657.9
June 2002	-0.2	44.9	56.3	-6.9	94.1	106.8	647.1	50.4	654.0
July 2002	-0.1	59.3	56.2	-64.6	50.8	108.3	427.9	52.0	492.5

[1] Excl. exchange rate adjustments.
[2] Central government administration, social security administration and Norges Bank.
[3] Incl. possible discrepancies between forward assets and forward liabilities within the category of foreign exchange banks.
Source: Statements from commercial and savings banks (registered foreign exchange banks) to Norges Bank

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

	30.06.2001	30.09.2001	31.12.2001	31.03.2002	30.06.2002
Foreign assets, spot	228 094	221 490	219 915	217 232	203 997
Foreign liabilities, spot	329 440	358 713	335 926	366 240	317 645
1. Spot balance, net	-101 346	-137 223	-116 011	-149 008	-113 648
2. Forward balance, net	54 848	81 370	44 192	76 692	121 215

Source: Norges Bank

Table 44. Norges Bank's foreign currency transactions with banks. In billions of NOK

	2000	2001	Uke i 2002													
	1-52	1-52	24	25	26	27	28	29	30	31	32	33	34	35	36	1-36
A. Norges Bank's net sales of foreign exchange to banks	**-53**	**-111**	**-1.40**	**-1.35**	**-1.50**	**-1.20**	**-1.15**	**-1.15**	**-1.25**	**-1.20**	**-1.15**	**-1.25**	**-0.95**	**-1.25**	**-1.15**	**-38.29**
1. Spot	-48	-111	-1.40	-1.35	-1.50	-1.20	-1.15	-1.15	-1.25	-1.20	-1.15	-1.25	-0.95	-1.25	-1.15	-38.29
2. Forward	-5	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Used by banks to cover:																
B. Foreign sector [1]	**-37**	**-15**	**-21.28**	**-5.85**	**0.31**	**10.74**	**0.50**	**-3.94**	**-0.34**	**3.51**	**-0.52**	**-2.82**	**0.73**	**-9.25**	**-17.68**	**-55.07**
1. Spot	-64	4	-3.40	-3.25	-5.71	-0.40	-2.35	4.31	4.39	-2.49	4.40	1.57	-7.24	-0.17	-8.78	-5.28
2. Forward	27	-20	-17.88	-2.60	6.02	11.14	2.85	-8.25	-4.73	6.00	-4.92	-4.39	7.97	-9.08	-8.90	-49.79
C. Norwegian sectors, non- bank [1]	**-22**	**-96**	**16.26**	**9.36**	**-2.13**	**-8.91**	**-0.16**	**4.35**	**-1.91**	**-3.64**	**0.42**	**-0.68**	**-3.14**	**11.92**	**14.55**	**24.16**
1. Spot	20	-102	18.77	4.14	-1.20	-9.83	-9.48	4.42	0.12	-5.12	8.16	4.00	-12.30	7.33	15.61	23.21
2. Forward	-33	7	-8.06	13.00	4.27	-4.22	9.43	1.25	-3.83	2.19	-11.38	-1.00	4.26	5.98	0.33	17.98
3. Increase in customers' net currency claims on banks	-10	-1	5.55	-7.78	-5.20	5.14	-0.11	-1.32	1.80	-0.71	3.64	-3.68	4.90	-1.39	-1.39	-17.03
D. Other	**6**	**0**	**3.63**	**-4.87**	**0.32**	**-3.03**	**-1.50**	**-1.56**	**0.98**	**-1.08**	**-1.07**	**2.26**	**1.46**	**-3.92**	**1.97**	**-7.49**
1. Banks' income deficit in foreign exchange, foreign	6	9	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	3.96
2. Losses on spot transactions, foreign	6	-3	-1.11	-4.10	-4.91	1.33	-2.14	-1.93	5.17	1.03	1.46	-4.15	3.30	-3.04	-2.16	-38.06
3. Other losses, including adjustments	-6	-4	1.16	-1.80	4.85	-4.15	0.13	0.80	-4.54	-0.69	-2.55	6.15	-2.51	-0.62	4.22	24.23
4. Increase in banks' total position	-1	-2	3.47	0.92	0.27	-0.32	0.40	-0.54	0.24	-1.53	-0.09	0.15	0.56	-0.37	-0.20	2.38
Specification:																
Non- resident net sale of NOK- denominated assets related to:																
Net NOK claims on banks	-5	0	-0.04	-6.33	-4.49	-0.09	-2.16	2.17	4.24	-2.75	6.16	0.83	-6.94	-1.11	-7.79	-7.42
VPS- registrered shares	-40	-3	-2.18	-0.25	-0.94	-1.28	0.12	0.12	-0.38	0.43	0.20	-0.18	-1.21	0.79	0.55	0.40
VPS- registrered bonds	-16	10	-1.02	-0.01	0.13	0.44	0.14	0.37	0.79	-0.89	-0.32	-0.36	0.31	-0.12	-0.71	0.62
VPS- registrered notes and certificates	-3	-2	-0.16	3.34	-0.41	0.52	-0.44	1.66	-0.26	0.72	-1.65	1.29	0.60	0.27	-0.83	1.13
Total (equal to NOK offset to B1 above)	**-64**	**4**	**-3.40**	**-3.25**	**-5.71**	**-0.41**	**-2.34**	**4.32**	**4.39**	**-2.49**	**4.39**	**1.58**	**-7.24**	**-0.17**	**-8.78**	**-5.27**
Memorandum:																
Increase in banks' foreign spot position (net) (Corresponds to A1- B1- C1- D1- D2)	-29	-20	-15.77	1.75	10.21	7.59	12.71	-8.06	-11.04	5.27	-15.28	-2.78	15.18	-5.48	-5.93	-22.12

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

Source: Norges Bank

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