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Economic Bulletin





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- . Category not applicable
- .. Data not available
- ... Data not yet available
- Nil
- $0 \quad \downarrow \quad \text{Less than half the final digit shown}$
- 0.0

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Economic perspectives

Annual address by Governor Svein Gjedrem at the meeting of the Supervisory Council of Norges Bank on 20 February 2003

The global economy is ailing, plagued by a recent history of unsound investments, a fall in equity prices and fears of terror and war. In Norway, employees obtained the strongest increase in real wages for a generation in 2002. Petroleum revenues have generated excessive optimism. The imbalances caused by the combination of global stagnation and the high Norwegian cost level are leading to job losses and higher unemployment.

Why has the krone appreciated?

The krone is strong. As a result, prices for imported goods have fallen. This has led to low and stable inflation in spite of sharp wage growth. It would appear that inflation will also remain low in the years ahead.

The krone exchange rate fluctuates. This is not surprising because other countries' currencies also fluctuate (see Chart 1). The Swedish krona depreciated sharply in 1992. Since then it has remained weak, but has shown wide variations. Pound sterling appreciated by more than 20 per cent between 1996 and 1998, reflecting solid growth in the UK economy from the mid-1990s. A currency that has exhibited wider swings than most is the New Zealand dollar. A sharp appreciation up to the mid-1990s was subse-quently reversed. Over the past two years, this currency has moved in tandem with the Norwegian krone.

The krone exchange rate is the price of our currency measured in terms of a foreign currency. Developments in other countries are just as important for the krone as developments in the Norwegian economy.

Capital flows freely and flows can change rapidly. This can spill over to exchange rates and interest rates as well as output and employment.

Currency swings are driven by cross-border capital movements. Capital flows were heavily influenced by investor focus on stock market returns until the downturn began. In the US, equity prices almost trebled between 1995 and 2000 (see Chart 2). Stock markets in other countries followed suit. Capital inflows into the stock market resulted in a strong dollar. However, expectations concerning corporate earnings were higher than later proved to be warranted. When expectations were lowered, equity prices fell. The decline was amplified after the downturn in the global economy deepened as a result of terror and fears of war. Investors sought to avert the risk in the stock market. Demand for bonds increased, resulting in low long-term interest rates.

In response to heightened uncertainty and fears of war, traditional safe havens for capital, such as the Swiss franc and gold, have become increasingly attractive. The Swiss franc appreciated after the terrorist attacks on 11 September 2001 and towards the end of last year (see Chart 3). Gold prices moved up sharply after UN Security Council Resolution 1441 was adopted on 8 November last year.





The chart shows developments in the nominal effective exchange rates for Norway, Sweden, the UK and New Zealand. A rising curve denotes an appreciation of the exchange rate. Monthly figures

Chart 2. Equity prices and long-term interest rates







The chart shows the difference between Norwegian and trading partners' three-month rates. Trading partners' interest rates are trade-weighted. Developments in the krone exchange rate are measured in terms of the trade-weighted exchange rate index index (1990=100). A rising curve denotes an appreciation of the krone. Monthly figures.



The chart shows developments in Standard and Poor's 500 equity index as well as developments in the trade-weighted exchange rate index (1990=100). A falling curve for the krone exchange rate denotes an appreciation of the krone. Monthly figures.





Oil prices fell markedly after 11 September 2001, but have since risen. Fears of war in Iraq have increased the uncertainty surrounding global oil supplies. Strategic oil reserves have risen, while private reserves are low. This has exerted upward pressure on oil prices. The strike in Venezuela has also had an impact.

Major economies such as the US, Germany and France are struggling with stagnation and fears of recession. Substantial tax relief and low interest rates are holding up activity in the US. The Japanese economy has been in a deflationary recession for a long period.

In recent years, the krone exchange rate has shadowed the difference between Norwegian and foreign short-term rates (see Chart 4). This is why the krone has appreciated to its current strong level. In addition, high oil prices have had an influence. The effect of the interest rate differential on the krone has been intensified by conditions in capital markets. Investors have been favouring carry trades. Risk premiums in major currency markets have been low, which seems to indicate that investors have been less prone to speculate in exchange rate fluctuations.

As equity prices fell, investors started seeking alternative vehicles. This made the krone market more attractive. The krone appreciated at the same time that foreign stock markets and domestic equity prices fell (see Chart 5). Bonds and other interest-bearing securities have been of particular interest.

This is reflected in the international market for bonds issued in NOK. Last year, such bond issues amounted to more than NOK 50 billion (see Chart 6). Both foreign and Norwegian companies were issuers and a number of small and large foreign investors and Norwegian companies - primarily life insurance companies - were buyers.

The relationships in the foreign exchange market are unstable. New shifts in the world economy may reduce interest in the krone.



Sources: TRCIS/IMF, Ministry of Finance and Norges Bank

The chart shows relative hourly labour costs in the manufacturing sector in Norway and among Norway's trading partners, calculated in a common currency. The series shows the percentage deviation from the average for the period 1970-2002. Estimates from the Technical Reporting Committee on Income Settlements (TRCIS) for 2002. Annual averages. The point marked 31 January 2003 shows relative hourly labour costs in 2002, translated into a common currency with the trade-weighted exchange rate index as at 31 January 2003 (93.64).

As a result of the strong krone and a high wage level, competitiveness in business and industry is close to 15 per cent weaker than the average for the past 30 years (see Chart 7). Historically, following such substantial deviations, competitiveness has always returned to the average fairly rapidly. Market participants weigh the interest rate differential between Norway and other countries against the likelihood of a depreciation of the krone in the future. Cyclical divergence can cause the krone to overshoot its future level in the short term. However, in the long term, the krone cannot remain this strong. This would require a substantial improvement in our capacity to generate income.

What are the factors behind the wide interest rate differential?

With the krone exchange rate prevailing at end-January, competitiveness had weakened by a little less than 25 per cent since 1996 (see Chart 8). The krone had appreciated by almost 10 per cent.

In the same period, wages in Norwegian manufacturing increased by close to 15 per cent more than wages among trading partners. In the years around the millennium, the depreciation of the krone veiled the underlying deterioration in competitiveness. In May 2000, the krone hit its lowest level in six years¹). The krone has since appreciated, and the effect of high wage growth has gradually come into evidence in company accounts.

In the ten years that have passed since the banking and currency crisis in 1992, the economy featured a long period of balanced growth. However, towards the end of the upturn the economy was facing labour shortages, higher



Sources: TRCIS/IMF, Ministry of Finance and Norges Bank

The chart shows relative hourly labour costs in the manufacturing sector in Norway and among Norway's trading partners. Index 1990=100. Estimates from TRCIS for 2002. Annual averages. The curve *local currency* shows the index for relative hourly labour costs without taking exchange rate developments into account. The curve *common currency* shows relative hourly labour costs when exchange rate developments are also taken into account. This curve expresses developments in competitiveness. A rising curve denotes a deterioration in competitiveness. The point marked 31 January 2003 shows relative hourly labour costs in 2002, translated into a common currency with the trade-weighted exchange rate index as at 31 January 2003 (93.64).





Source: EcoWin

wage growth and a sharp increase in household consumption and debt. Interest rates had to be kept at a high level in Norway.

The turnaround abroad took place two years ago, but the Norwegian economy continued to show a high level of activity. This led to a widening of the interest rate differential against other countries. The main explanation for the wide interest rate differential is not that interest rates are high in Norway, but that interest rates are at a historic low abroad (see Chart 9). Interest rates in the US have not been at such a low level since the 1960s.

A further jump in wages in 2002 amplified the imbalances in the economy and fuelled the rise in prices for goods and services produced in Norway. This is why monetary policy has been tight.

The real interest rate, i.e. the interest rate adjusted for inflation, rose in 2000 and was thereafter somewhat higher than the average for the past 30 years (see Chart 10). With the reduction in the key rate this winter, the real interest rate is no longer particularly high. The tight monetary stance is reflected in the strong krone.

Is there a risk of prolonged stagnation?

The US has been the driving force in the world economy. The US economy has historically been very resilient. Growth tends to pick up rapidly after short periods of contraction. Most likely this will prove to be the case this time as well. A positive aspect is that confidence in the financial system has not been impaired. There is some evidence of a recovery in investment.

However, we cannot exclude the possibility of a fairly long period of stagnation in the global economy. Low interest rates in the US and Europe are a reflection of this risk. The level of investment in the US was high during the expansion, which may have resulted in excess capacity in the business sector. The fall in equity prices is having a negative effect on household wealth. In addition,

¹⁾ Measured by the monthly average of the import-weighted exchange rate against 44 countries, the krone was at its weakest level in May 2000 since May 1994. Measured by the monthly average of the trade-weighted exchange rate index, the krone was at its weakest level in May 2002 since the series was started in January 1971. Measured by both indices, there were a few days in autumn and winter 1998 when the krone was weaker than in May 2000.



The real interest rate is the three-month nominal money market rate (NIBOR) deflated by the inflation rate the same year. The inflation rate used is the annual rise in the CPI-ATE in the period 1980-2002 (calculated by Norges Bank until 2000). For the years 1966-1979, the interest rate is deflated by the annual rise in the CPI. For 2003, the nominal interest rate level as of 13 February 2003 is held constant for the remainder of the year. The nominal interest rate is deflated by Norges Bank's projection for the annual rise in the CPI-ATE in 2003 from *Inflation Report* 3/02. The average real interest rate from 1966 to 2003 is 3.71 per cent.

US household saving is low and low interest rates have induced households to accumulate debt. The fall in the value of the dollar may make a contribution, but growth in the business sector is still not self-driven and the depreciation of the dollar is reducing other countries' exports. The impetus generated by the US economy may be weak for several years ahead.

Nor is the rest of the world showing clear signs of an imminent recovery. Japan is dragging down growth in the world economy. The large European economies, in particular Germany, are stagnating. Unemployment is high, but the growth potential appears to be low.

Interest rates in the US and Japan have been reduced to such a low level that there is little room for further stimulus. The monetary policy authorities could use more unorthodox measures. For example, the central bank could purchase massive volumes of long-term bonds – as seen in Japan – or other assets. It is uncertain how effective such measures are. Traditional fiscal policy instruments may also prove to be ineffective when budget deficits are rising sharply. This may fuel expectations of future fiscal retrenchment and tax increases.

If the world economy continues to stagnate over a longer period, the effects will also spill over to the Norwegian economy. The decline in traditional exports will then persist. Sooner or later, the oil market will also feel the effects of the downturn and oil prices will decline. If the world economy experiences prolonged stagnation and the krone remains firm, a markedly lower interest rate will contribute to a weakening of the krone and mitigate the effects for Norway. On the other hand, any fiscal slippage will contribute to maintaining a strong krone.

A precondition for countering a possible downturn by means of monetary policy easing is slower growth in labour costs. Monetary policy cannot prevent an increase in unemployment that is caused by a significantly higher rate of growth in labour costs in Norway compared with other countries.

A stagnating global economy has changed the domestic inflation outlook in recent months. World stock markets have continued to decline. It does not appear that interest rates in the US and Europe will increase in the near future. They may even be reduced further before the recovery starts. In Norway, the interest rate has also been reduced. At the same time, fiscal policy is stimulating activity, partly through tax reductions and growth in government allocations. In addition, state finances weaken when the economy shows little growth and unemployment rises. As a result of the strong krone, however, overall economic policy is tight. With an equally tight policy ahead, inflation would probably have been lower than the inflation target. A gradual easing of monetary policy would thus seem appropriate.

Does the inflation target promote stability?

The operational target of monetary policy as defined by the Government is inflation of close to 2.5 per cent over time. The inflation target provides economic agents with an anchor for their decisions concerning saving, investment, budgets and wages. Households, businesses, public entities, employees and employers can base decisions on the assumption that inflation in Norway will be 2½ per cent over time.

The responsibility for implementing monetary policy has been delegated to the central bank. This is also the case in comparable countries. The central bank shall exercise professional judgement within the framework of its mandate. Assessments of economic developments and the basis for interest rate decisions are presented to the public. This makes it possible for others to gain insight into the assumptions and analyses underlying interest rate decisions.

The operational target is well defined. The Bank's judgement can therefore be evaluated retrospectively. Norges Bank explains the reasoning behind its judgement in its annual report. The Bank's reporting requirement is set out in § 75, litra c of the Constitution, which stipulates that the Storting shall supervise Norway's monetary system. Up to 1950, the annual report was submitted directly to the Storting. Today, in keeping with the Norges Bank Act, it is sent to the Ministry of Finance for submission to the King in Council and communication to the Storting in the Government's credit report. The law thereby provides a framework that allows the government authorities to follow up the performance of the delegated responsibility for monetary policy.

Norges Bank sets the interest rate so that future inflation will be equal to the inflation target of 2¹/₂ per cent. High demand for goods and services and labour shortages normally point to higher inflation in the future. When interest rates are increased, demand falls and inflation is kept at bay. When demand is low and unemployment rises, inflation will tend to slow. Interest rates will then be reduced. The inflation target is a vehicle for, not an obstacle to, monetary policy's contribution to stabilising output and employment. This intention is also expressed in the Regulation on Monetary Policy.

The inflation target of 2¹/₂ per cent is broadly in line with the inflation targets of our trading partners. It is also an anchor for developments in the krone exchange rate. The krone fluctuates. We have open trade with other countries and free capital movements. We do not have the instruments to fine-tune the krone exchange rate. As long as inflation remains low and stable, any substantial deviations in the krone exchange rate over time will have a considerable impact on activity in business and industry. As a result, the krone exchange rate will tend to return to its long-term mean following any substantial deviations. The best contribution monetary policy can make to stability in the krone exchange rate is to aim at low and stable inflation.

Wide cyclical differences and differences in wage formation between Norway and other countries have always had an impact on the krone exchange rate and competitiveness. The central bank alone cannot, with the instruments at its disposal, steer the exchange rate.

During the years when a fixed or stable exchange rate was the objective of monetary policy, fiscal policy was responsible for smoothing fluctuations in the economy. At the same time, incomes policy's role was to keep wage growth in line with wage growth abroad. The objective of exchange rate stability therefore provided a framework for economic policy.

When foreign interest rates moved up, the interest rate in Norway also had to be raised in order to prevent a weakening of the krone. Conversely, interest rates in Norway were often reduced following a reduction in interest rates abroad.

One can imagine how this division of responsibility would have been implemented in the face of the disturbances to the Norwegian economy which occurred in 2001 and 2002. The upward tendency of the krone would have led to reductions in the interest rate down to the international level. As a result, interest rates would also have reached a historical low in Norway. Low interest rates would have fuelled lending growth, pushed up house prices and intensified the shortage of labour. In order to prevent another bubble of this type in the Norwegian economy, substantial fiscal policy tightening would have been required in 2001, 2002 and 2003.

The fiscal rule stipulates that the central government budget deficit shall over time be equivalent to the expected real return on the Government Petroleum Fund. The rule is robust to variations in government revenues and provides a stable framework for economic developments. The fiscal rule has been adhered to, which in itself makes a considerable contribution to stability.

Monetary policy has been assigned a clear responsibility for stabilising the economy. Inflationary pressures are addressed using a different approach than earlier. Monetary policy keeps inflation under control. This may translate into high interest rates and in periods a strong krone.

The alternative could have been higher inflation, with a continued contest for economic resources and persistently high wage growth. This would have resulted in a continued deterioration in business sector competitiveness year after year as a result of higher price and cost inflation in Norway than abroad. The experience of the 1970s and 1980s shows that inflation and wage growth do not have a stable anchor under these conditions. Inflation and wage growth would have continued to move up until monetary policy was tightened. Unleashing inflation is not a viable alternative.

Why is unemployment rising?

High labour costs, a strong krone and global stagnation are leaving a mark on Norway's internationally exposed sector. Many enterprises will not be able to sustain activity given current market conditions and cost levels. Labour costs are also squeezing margins in some private service industries. More enterprises are competing on international markets. Moreover, even if allocations are growing, public entities have limited capacity for increasing employment because wage expenses have risen so sharply.

Unemployment has edged up recently. The current unemployment rate of 4 per cent is more or less on a par with unemployment in 1997 (see Chart 11). It is also 2 percentage points lower than the average number of unemployed and persons participating in labour market programmes in the 1990s. For manufacturing, the effect of weak profitability has not yet come into full evidence. Unemployment is therefore expected to increase somewhat in the period ahead.

In spite of the high level of wage growth, inflation is low. Conditions are now conducive to a gradual narrowing of the interest rate differential between Norway and abroad. How tight monetary policy will be is essentially contingent on how fast wage growth is brought down.

The inflation targets adopted by Norway and our trading partners imply that total wage growth of about $4\frac{1}{2}$ per cent is consistent with little or no change in business sector competitiveness. This is based on the assumption that productivity growth in Norway is around 2 per cent, or about the same as the average for the past 20 years. Both companies and employees can take as a given that inflation will be $2\frac{1}{2}$ per cent over time. This reduces uncertainty and makes it possible for the social partners to disregard brief spells of somewhat lower or somewhat higher inflation.

Inflation does not have to be higher than $2\frac{1}{2}$ per cent in Norway to achieve growth and high employment. The experience of the 1990s demonstrates this. During that period unemployment fell and growth was strong. Even with major restructuring and changes in industry structure, inflation was close to $2\frac{1}{2}$ per cent.

Growth in real wages is now markedly higher than the underlying growth in productivity. This is why unemployment is rising. Businesses must adjust their work-



forces to sustain profitability. This leads to a fall in employment, but also continued operations in Norway. The alternative is that companies are not able to adjust their workforces quickly enough. If higher costs cannot be passed on to customers, earnings will fall and the wage share rise. This may lead to closures or relocation of production.

The wage share in Norwegian manufacturing has increased (see Chart 12). The situation in service industries is more mixed. Import firms have wider margins. We know that employment in some service industries has fallen. This may indicate that many service enterprises have adjusted their workforces. To some extent, higher costs can more easily be passed on to customers through higher prices in this sector.

This picture is typical of the final phase of an expansion. A tight labour market and the contest for economic resources lead to a sharp increase in real wages. This results in high growth in household income, consumption and housing investment. The propensity to borrow increases and house prices rise sharply. On the other hand, the business sector faces pressures on profitability, a high cost level and declining investment. Commercial property prices fall. At the same time, corporate restructuring brings growth in employment to a halt. When costs reach a high level, employment starts to fall. The period of expansion has then come to an end. The cost level must be adjusted to restore balance in the labour market.

Wage formation in Norway is subject to an institutional and statutory framework and agreements that have been developed over several decades. The result of negotiations is influenced by labour legislation, including regulations relating to job protection, unemployment benefits and the rules that apply to cooperation and settlement of industrial disputes.

In important segments of the labour market, there appears to have been a shift in the social partners' strategic position in negotiations in favour of employees. Technological changes, increased demands for stable supplies





and intensified international competition have made enterprises in many industries ever more vulnerable to even short operational disruptions. The employers' ability and willingness to take on open labour conflicts have therefore diminished.

On the other hand, corporate boards and management are responsible for decisions on expansions, closures, rationalisation, location and workforce increases. Unions have little direct influence on these matters. If company costs increase, either productivity must be improved, production closed or relocated to another country. This is the companies' arena. Their decisions concerning operations, investment and location are in turn determined by the rate of return required by owners to keep their capital in the company.

Under these operating parameters, developments in labour costs essentially reflect employees' and their organisations' assessment of the trade-off between real wage growth and employment. These organisations cannot assume that others can safeguard their members' jobs when they determine how high pay increases should be.

The pay increases for white-collar workers in the business and financial sector and academics in the public sector have been particularly high. For a long period, this mirrored the high wage growth for liberal professions, consultancy firms, law firms and the IT industry. However, wage growth for white-collar workers and academics appears to be holding up even with weaker labour market conditions for these groups. In many places in our country, public sector wages are higher than the level that can be sustained by local businesses in a less favourable economic environment.

It may appear that wages for white-collar workers are first increased in line with that of other groups and then supplemented by individual increases based on performance and profits. The overall rise in wages does not seem to be adapted to the situation now faced by many enterprises or to an ample supply of labour. The system for determining these groups' wages may be an unnecessary source of cost increases for enterprises and public entities.

Last year's wage settlements resulted in wide differ-

ences in pay increases across different groups. This may give rise to renewed tension between occupational groups and new wage spirals. Because substantial pay increases negotiated in 2002 will take effect in 2003, wage growth will also be high this year even without any new generous pay increases. It may take time and be very costly for business and public entities to resolve the problems caused by last year's wage settlements. It will only be well into 2004 before we can assess how high the unemployment rate will be in this business cycle.

One of the richest countries in the world?

Norway's position as petroleum exporter may have influenced wage developments and affected household optimism and eagerness to borrow. The risk of job losses and a rise in unemployment may have been underestimated. Cash flows from the petroleum sector may give rise to the perception that Norway is one of the absolute richest countries in the world.

The large cash flows from petroleum activities are reflected in official income figures. Measured by GDP per capita, Norway ranks high in the statistics. These figures do not, however, provide an accurate picture of value added.

When calculating GDP and national income, the cash flow from petroleum activities is measured in the same way as all other income. Extracting oil and gas from the seabed is measured in the same way as all other production. This means that Norway's income is overestimated. Oil and gas represent wealth under the seabed. When oil and gas are sold, this wealth is invested abroad. This transaction does not in itself generate income, even though it is posted as income in the national accounts. The income is not equivalent to the entire cash flow, only to the return on this wealth.

A more accurate picture of Norway's income is obtained when GDP is adjusted for the transfer of petroleum wealth to financial investments abroad. The so-called "permanent income" from petroleum activities can be used to calculate the return both on today's Petroleum Fund and on future investments. The value of labour input in the petroleum sector comes in addition.

With this more accurate picture, the income level in Norway is not particularly high. Norway's income is approximately on a level with other Western countries such as Australia and Germany, while the level in, for example, Canada and Denmark is considerably higher²).

Norway's income is generated through labour. Income growth in the 1990s was unusually strong as a result of substantial productivity gains and a sharp increase in employment. Major technological advances were achieved in the petroleum industry, and productivity growth in private services was especially high – particularly in retail trade, financial services and telecommunications





Productivity is measured as gross product per person-hour. National accounts figures for the person-hours worked and volume growth in value added in basic values by main industries are used in the calculations. Private service sector is defined here as mainland Norway excluding manufacturing, mining, dwellings (households), utilities, government administration, farming and forestry, fishing and fish farming. The chart shows the three-year moving averages (centered) of annual growth rates.

and postal services (see Chart 13). In retail trade, nationwide chains boosted efficiency. New technology and improved services provided new impetus to the financial industry. The telecommunications and postal services started operating on normal commercial terms.

A number of conditions were conducive to favourable developments in the 1990s. Wage growth was moderate for a long period and interest rates were low. Banks regained their strength after the banking crisis. The tax reform stimulated innovation and strengthened the incentive to work. The reorganisation of state-owned commercial enterprises enhanced efficiency and value added. It is unlikely that gains of this magnitude will be achieved in this decade.

Today, the greatest potential for new and substantial improvements is probably to be found within the public service sector. Norway has a high level of spending for schools and education compared with other countries. The considerable potential for efficiency gains in public administration, particularly in local government, has been amply documented. The reorganisation of the regional health authorities promises an increase in efficiency. The organisational challenges are nevertheless considerably greater than they were for Telenor and Norway Post. In hospitals managed by the regional health authorities, the patient's bill is covered by the central government and competition is - for obvious reasons - highly limited. In this context, therefore, other instruments to promote efficiency are required. Hospitals must have reasonable prospects of being able to provide satisfactory services to the public over time. On the other hand, establishing a framework that the hospital authorities and employees perceive as binding and credible is not an easy task for the central government. Thus, encouraging hospitals to seek the most efficient solutions probably represents a particular challenge.

²⁾ The analysis was based on provisional figures from the OECD. Revised figures from the OECD, based on new calculations of purchasing power parities, show higher GDP per capita in Norway. When adjusting for the transfer of petroleum wealth to financial investments abroad, GDP per capita in Norway was lower than in the US, but still somewhat higher than in other European countries.



Is it wise to invest in equities?

The cash flow from petroleum activities to the Treasury resulted in a government budget surplus – as this is measured - of almost 10 per cent of GDP in 2002. The central government invests this amount abroad through the Petroleum Fund. This results in capital outflows and a balance-of-payments surplus. The central government builds up assets, but also obligations through the social security system. Even if a large share of oil revenues is set aside, it would appear that, in the long term, the level of direct and indirect taxes will have to be at least maintained in order to honour these obligations.

Petroleum revenues would normally have resulted in substantial currency inflows into Norway. If we had used this capital domestically, we would have had to convert this currency into NOK. The attendant increase in demand for kroner would have resulted in an even sharper appreciation of the krone exchange rate. The capital outflow through the Petroleum Fund contributes to curbing the appreciation of the krone. With oil and gas production now reaching its peak, Norway has – and must have – a substantial balance-of-payments surplus.

The return on the Petroleum Fund will to some extent make up for the fall in petroleum revenues in the period ahead. In about 15 years, the return on the Fund may exceed the cash flow from petroleum activities (see Chart 14). Norway's position as international investor may then overshadow its position as an oil and gas producer. Swings in capital markets may have a greater impact on central government finances than oil price fluctuations.

We are now in a phase where petroleum wealth is being invested at home and abroad. Norway is – and has to be – an international investor. We must invest abroad in order to safeguard our petroleum wealth and maintain a broad-based business sector. This will also be the case if we should decide to reform our pension system in the future, with a larger component of public or private fundbased schemes. Risk diversification also favours the



investment of capital abroad. The state is already a dominant owner in many of Norway's largest companies. Future government tax revenues will also largely depend on the growth potential of the Norwegian economy.

The safest investment an individual or a small firm can make is to deposit their money in a bank. The return on bank deposits may be low, but for small amounts it is safe. The central government cannot, however, safeguard its capital by depositing tens of billions of kroner in banks. Investments can be made in two main types of instruments: bonds and equities. The international bond market is about the same size as the equity market.

Government bonds are a relatively safe investment, but the return is low. Long-term interest rates in the US and Europe are currently around 4 per cent. New investments will thus achieve an annual real rate of return of $1\frac{1}{2}$ -2 per cent. By way of comparison, the authorities have based their use of petroleum revenues over the central government budget on the assumption that the Petroleum Fund can achieve a long-term real return of 4 per cent. It is unlikely that this rate of return will be achieved if we only invest in bonds.

In the long term, there may even be a risk associated with investments in government bonds. This has been experienced by the Norwegian state. The State Reserve Fund, established in 1904, lost much of its capital during the First World War as a result of losses on investments in German and French government bonds.³⁾

Buying a bond means lending money to others. Buying equities is the same as investing in real assets. Buying equities gives us direct ownership of the means of production in global business and industry. On the one hand, these ownership rights provide high returns when companies are flourishing. On the other, shareholders are the first to sustain losses when companies fail. As a result, returns on equities fluctuate far more than returns on bonds, reflecting the higher level of risk (see Chart 15). Over the past 75 years, equity returns in the US market have been negative almost every third year.

³⁾ For further details, see Hylland (1991) "Statens Reservefond - et forsøk fra politikerne på å binde sin egen handlefrihet?" (The State Reserve Fund - An attempt by politicians to restrict their scope for manoeuvre?). Unpublished paper, University of Oslo.



Sources: Ibbotson Associates and Datastream

The chart shows 10-year rolling returns on US equities (S&P Composite Index) and 5-year government bonds. 10-year rolling returns means that the figure for each year shows the average annual return on an investment in equities or bonds that was made 10 years earlier. The average annual return on fixed income instruments for the entire period was 5.4 per cent. The average annual return for equities was 10.2 per cent.

An investor will only invest in high-risk vehicles if it is reasonable to expect compensation for the risk. The compensation for high risk in the stock market is a far higher average return for equities compared with bonds. Since 1926, the annual return on US equities has on average been 4.8 percentage points higher than the return on bonds.

Also in most ten-year periods, investing in US equities has been profitable, with the exception of the depression in the 1930s and the last half of the 1970s (see Chart 16). Equity returns have been negative after ten years only in the years between 1928 and 1938, in other words on equity investments made the year before the 1929 stock market crash. It may also be worth noting that equities purchased during recessions – such as in the mid-1930s and mid-1970s – brought solid returns ten years later. This picture is the same for most other countries.

Since short-term fluctuations in equity prices are difficult to predict, it may be a sound strategy to keep the share of equities constant over time. This means buying a relatively large volume of equities when prices are low, and buying a smaller volume – or selling – when prices are high. This is the strategy applied by the Petroleum Fund.

Optimism and pessimism, confidence and doubt influence equity prices. In periods when markets are characterised by optimism and confidence in the future, equity prices tend to be high. When markets are marked by pessimism and fear, prices tend to be low. The actual income flow from equities – the dividend – depends more on developments in the global economy over time. This is a far more stable variable than equity prices. Investing a large share of the capital in bonds diversifies risk even further.

We are nevertheless left with the question of whether we are now entering a long period of very low or negative returns on investment in global business. This would then imply that there is an unusually low growth potential in the global economy, as in the 1930s.

There is little we can do to achieve high returns on investments if global growth is weak. In this situation, not even investments in our own business sector - or for that matter in long-term bonds or infrastructure - would generate returns of any size. But even in an economy with low growth, we can basically expect to be compensated for risk.

The global business sector must be profitable in the long run. This must imply that equity investments can, in the long run, generate a solid return in relation to other alternatives.

If prospects for achieving a return should deteriorate, another question is whether we should save less and spend more now. However, there are good reasons to maintain the saving ratio. It will be even more demanding to finance future pensions for an ageing population if the economy stagnates.

Conclusion

The global economy is in the doldrums. Swings in capital markets have a substantial impact on the value of wealth accumulated by the central government. However, it is highly unlikely that investing in global business will not be profitable in the long run, and with a high portion of wealth invested in bonds the risk is spread.

It is unlikely that we will achieve the substantial productivity gains seen in the 1990s. The Norwegian business sector is facing pressures on profitability, a high cost level and declining investment. Growth in real wages is markedly higher than underlying growth in productivity. This is why unemployment is rising. Businesses must adjust their workforces to maintain profitability, or close down or relocate production.

The inflation target is the vehicle for monetary policy's contribution to stabilising output and employment. In spite of high wage growth, the strong krone has kept inflation at a low level. Global stagnation has changed the domestic inflation outlook in recent months. The tight monetary stance is reflected in the strong krone. A gradual easing of monetary policy would thus seem appropriate.

As long as inflation remains low and stable, any substantial deviations in the krone exchange rate over time will have an impact on business and industry. As a result, the krone exchange rate will tend to return to its long-term mean. The interest rate differential between Norway and other countries has resulted in a strong krone. The wide interest rate differential is due to the historically low level of interest rates abroad. If the world economy experiences prolonged stagnation and the krone remains firm, a markedly lower interest rate will lead to a weakening of the krone and mitigate the effects for Norway. Any fiscal slippage will contribute to maintaining a strong krone.

Evaluation of Norges Bank's projections for 2001 and 2002

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Norges Bank's projections for developments in the Norwegian and international economy form an important basis for monetary policy decisions. Norges Bank places emphasis on the importance of evaluating the projections in the *Inflation Report* and on transparency in our forecasting work.¹⁾ It is important to analyse forecast errors to improve the quality and accuracy of our projections. In addition to the series of articles containing evaluations of Norges Bank's projections, the assessments on which monetary policy decisions have been based are also included in the Bank's Annual Report.

Low and stable inflation has been Norges Bank's operational objective for monetary policy since March 2001. The inflation target is set at 2½ per cent. An optimal monetary policy is forward-looking and takes account of long and variable lags associated with monetary policy decisions. This is why inflation-targeting central banks use projections for future price inflation as a basis for monetary policy decisions.

This article analyses Norges Bank's projections for 2001 and 2002 as presented in *Inflation Report* 4/2000. Our projections for consumer price inflation receive particular emphasis, but we also look at the projections for other macroeconomic variables given the impact they have on consumer price inflation.

Consumer price inflation, as measured by the CPI-ATE²), was approximately in line with our projection in 2001 and 2002. Wage growth was higher than expected. The projection nevertheless proved to be accurate partly because imported price inflation was low as a result of a higher-than-projected krone exchange rate. The analysis stresses that our understanding of wage formation requires greater emphasis on sheltered industries.

1. Introduction

Like other central banks with an inflation target for monetary policy, Norges Bank uses projections for consumer price inflation as a basis for monetary policy decisions. Calculations presented in Norges Bank's *Inflation Report* indicate that a substantial share of the effects of an interest rate change on inflation will occur within two years. The key rate (the sight deposit rate) is set on the basis of an overall assessment of the inflation outlook, normally with a view to achieving an inflation rate of 2½% two years ahead. The direct effects on consumer prices resulting from changes in taxes, excise duties and extraordinary temporary disturbances shall in general not be taken into account. We therefore focus on actual developments in underlying price inflation, as measured by the CPI-ATE, compared with our projections.

The projections in the Inflation Report are conditional on various assumptions, such as technical assumptions concerning changes in the interest rate and the exchange rate. In Inflation Report 4/2000, the projections were based on the assumption that the exchange rate would remain constant and the interest rate would change in line with market expectations. These assumptions will not necessarily reflect the most probable outcome. Consequently, our projections will not always be the best forecast of economic developments. The purpose of Norges Bank's projections is to provide a basis for monetary policy decisions. If, for example, the conditional projection for consumer price inflation two years ahead is above the inflation target, the interest rate will normally be increased with a view to achieving the inflation target. In such a situation, the interest rate is changed in order to achieve a different outcome than projected. When the projections are subsequently evaluated, it is important to take into account that the projections do not necessarily represent Norges Bank's view of the most probable outcome.

It is decisive to have a good understanding of inflation developments if monetary policy is to fulfil the operational objective of stable inflation. Actual economic developments will often differ from the projections. The most important reasons for these forecast errors are:

- Assumptions included in the analysis may be incorrect. Norges Bank makes technical assumptions concerning the interest rate and the exchange rate.
- The projections are also based on other key assumptions concerning, for example, international economic developments, oil prices, public expenditure, and direct and indirect taxes. If developments differ from the assumptions, the projections will not be accurate.
- The economy is constantly being exposed to unexpected events that are impossible to predict at the time the projections are published. Examples of these events may be wage-driven cost shocks, unexpected changes in oil prices or low levels of rainfall resulting in sharp, unexpected increases in electricity prices.
- The economic models used in preparing the projections may be incorrect. Forecast errors may arise if historical relationships change, or if our understanding of the economic relationships on which our assessments were based proves to have been incorrect.

^{*}With thanks to my colleagues at Norges Bank for their useful comments.

¹⁾ See previous articles (Madsen 1996, Jore 1997, Jore 1999, Jore 2000, Sturød 2002)

²⁾ CPI-ATE is consumer prices adjusted for tax changes and excluding energy products.

- Any projection involves a certain degree of judgement. The projections generated by the models are different from the final projections. For example, we correct model projections that have proved to be systematically incorrect over time. In addition, professional judgement is used to assess how reasonable the model-generated projections are, based on our overall knowledge of the way the economy functions. This judgement may subsequently prove to have been unsatisfactory.
- There is also uncertainty surrounding the actual state of the economy at the time the projections are published. This is because it takes time for the statistics to be published, and because the statistics are often subject to considerable revision. Forecast errors may result if the basis for analysing future developments is incorrect. If, for example, preliminary statistics indicate that there are strong pressures in the economy and labour shortages, while the opposite proves to be the case, this will result in policy errors.

It can be difficult to provide an exact analysis of why our projections of economic developments differ from actual developments. If actual developments differ from the assumptions underlying one variable, all the variables will be affected because economic variables are dependent on each other through various mechanisms. The variables included as assumptions in our analyses will, in reality, also be determined by economic developments. In addition to explaining the differences, the aim of evaluation is to

provide greater insight into and understanding of the functioning of the economy. A reasonable description of demand and output developments will provide a good basis for projecting price inflation two years ahead. Wages are included both as a direct factor in prices for some services and as an important cost component in the production of other goods and services. We will be looking more closely at how accurate the projections published in December 2000 were in relation to economic developments both internationally and in Norway in 2001 and, to the extent data is available, in 2002. The projections in Inflation Report 1, 2 and 3 in 2000 did not differ significantly from the projections in the December Inflation Report. The projection for consumer price inflation in 2001 was revised upwards by ³/₄ percentage point through 2000, primarily reflecting a higher projection for wage growth. The projection for consumer price inflation in 2002 was kept unchanged through 2000.

In addition, we will focus on actual wage growth in comparison with projected wage growth because wage growth is one of the main determinants of domestic consumer price inflation.

2. How accurate were the projections for 2001 and 2002 published in December 2000?

The background for our projections in December 2000 was an economy marked by high capacity utilisation, a tight labour market and strong growth in labour costs. In

2001 2002 Forecast error¹⁾ Actual²) Forecast error1) Projection Actual Projection Mainland demand 11/2 1.8 _1/4 2 1/4 2 1/4 0 Private consumption 1 1/2 2.5 -1 21/2 3 3/4 -1 1/4 Public consumption 3 2.0 +12 2 1⁄2 -1/2 Fixed investment -1 3/4 -4.6 +2 1/2 1 1/4 -2 1/4 +3 Petroleum investment -4 -7.4 -2 2 -4 +31/2 4.0 Traditional merchandise exports 3 1/4 _3/4 3 3/4 1 +2 3/4 Traditional merchandise imports 2 1/2 4 -11/2 4 2 1/2 +1 1/2 Mainland GDP 1.2 11/4 1 1/4 0 1 3/4 +1/2 0.5 +1⁄4 Employment 3/4 1/2 1/2 0 Rate of registered unemployment (level) 2 3/4 27 31/4 -1/2 0 2 3/4 5 ½ 5 3⁄4 Annual wages3) 5 -1/2 4 1/2 -1 1/4 5 Hourly pay 6 -1 4 1/2 5 3/4 -1 1/4 Consumer price 4) 3 3 0 2 1/2 1.3 +1 1/4 0 CPI-ATE 2 3/4 2.6 2 1/2 2.3 + 1/4

 Table 1
 Projected and actual developments in key macroeconomic variables for the Norwegian economy in 2001 and 2002

 Percentage change from previous year unless otherwise specified.

1) Positive figures indicate that projections are too high. Percentage points

²⁾ Final figures for 2002 not available, with the exception of registered unemployment and consumer price inflation. Our projections from Inflation Report 1/03 have been used for the other variables.

3) Includes costs in connection with the two of the

Includes costs in connection with the two additional vacation days.

⁴⁾ For 2002 we assumed that overall consumer price inflation for the year as a whole would shadow underlying price inflation. In our projections for 2002, we therefore disregarded the isolated and temporary effect of the reduction by half of VAT on food from 1 July 2001.

2000, the interest rate was increased by a total of $1\frac{1}{2}$ percentage points.

Because of interest rate increases, price and wage inflation was expected to edge down in 2001 and 2002. We also placed emphasis on the high level of capacity utilisation and the limited supply of labour, which in isolation could lead to somewhat lower growth in the Norwegian economy. Growth in the global economy was also expected to decline in 2001.

Table 1 shows projected and actual developments for 2001 and 2002. For 2002, however, preliminary national accounts figures are only available for the first three quarters. We have therefore used our latest projections for developments in the real economy in 2002 as a basis for evaluating the projections published at the end of 2000. Consumer price inflation, as measured by the CPI-ATE, was approximately in line with our projections in 2001 and 2002. However, it must be taken into account that the developments in a number of variables underlying our projections for consumer price inflation did not materialize:

- Growth in the global economy was markedly lower than projected, while consumer price inflation was higher than projected.
- Unemployment remained low through 2001 in line with the projections, but increased more than expected in 2002.
- Wage growth was considerably higher than projected in both 2001 and 2002.
- The interest rate was higher than assumed. Our calculations were based on the technical assumption that interest rates would move in line with market expectations.
- However, the import-weighted krone exchange rate appreciated by about 15 per cent from December 2000

to December 2002, while the projections were based on a technical assumption of an unchanged krone exchange rate.

Growth in the global economy substantially underestimated

Developments in the global economy are an important assumption underlying our projections. The projections were based on a slowdown in growth in the global economy. Both Norges Bank and other forecasters underestimated the international downturn in 2001 (see Chart 1).

This is primarily due to a sharper-than-expected downturn in the US. GDP growth fell from 4.1 per cent in 2000 to 0.3 per cent in 2001. The decline was primarily triggered by developments in investment, particularly in the information and communications technology (ICT) sector. Considerable overcapacity had built up in this sector following sharp growth throughout the 1990s. However, expectations concerning corporate earnings were higher than later proved to be warranted. Weaker profits recorded by a number of US companies in the first half of 2000 resulted in a shift in the equity market. There was a considerable decline in companies' willingness to invest, and equity prices fell sharply.

Developments in the US gradually spread to other economic regions and resulted in the first synchronised downturn in the global economy since 1974. The sluggish developments continued in 2002.

In spite of substantially weaker developments in the global economy, international consumer price inflation was somewhat higher than expected in 2001 (see Chart 2). The oil price had risen from USD 10 at the beginning of 1999 to over USD 30 at the end of 2000. In spite of a decline in oil prices in 2001 approximately in line with the assumption underlying our projections, the second-round effects of the rise in oil prices seem to have con-



Chart 1 Projections for trading partners' GDP growth in 2001 published in 2000 by various institutions. Annual growth. Per cent

Chart 2 Projections for trading partners' consumer price inflation in 2001 published in 2000 by various institutions. Annual rise. Per cent



tributed to pushing up price inflation more than expected. In the first half of 2001, the impact of a number of livestock diseases on the agricultural sector in Europe resulted in higher food prices. The projections for international consumer price inflation for 2002 were accurate. Developments in international producer prices were also essentially in line with the projections published in December 2000.

The downturn in the global economy had limited effects on growth in the Norwegian economy

The downturn in the global economy in 2001 was much sharper than expected. However, this had little impact on the Norwegian economy in 2001. In spite of weak international developments, traditional merchandise exports were higher than projected in 2001.

Growth in both mainland GDP and unemployment were in line with projections in 2001 (see Table 1). However, growth in mainland demand was somewhat higher and employment somewhat lower than projected. Due to slightly stronger-than-projected growth in productivity, especially in the private services sector, the projections for growth in the Norwegian economy were nevertheless accurate.

Growth in private consumption was underestimated, and growth in public consumption was overestimated. This may be related to higher-than-expected wage growth. A larger share of public expenditure went to cover labour costs, and thus higher private income, and there was less room for increased activity in the public sector. Developments in the saving ratio are, nevertheless, the most important reason. The saving ratio fell somewhat from 2000 to 2001, whereas we had projected an increase.

Growth in mainland demand rose somewhat toward end-2001 and early 2002 as expected. Preliminary quarterly national accounts figures for the first three quarters of 2002 indicate, however, that growth in mainland GDP was somewhat lower than expected in 2002. Growth in employment was in line with projections, but unemployment rose more than expected.

The direct effects of weak developments in the global economy still had a limited effect on developments in the Norwegian economy at the beginning of 2002. Nonetheless, international developments had an impact on some sectors of Norwegian business and industry, not least through the exchange rate. Sharp reductions in interest rates in other countries widened an already considerable interest rate differential. The krone appreciated steadily through 2001. The trend intensified in 2002. These developments contributed to a sharp deterioration in the cost competitiveness of export-related manufacturing and other business and industry exposed to international competition. Traditional merchandise exports were considerably lower than projected for 2002. Unemployment edged up through 2002 and at yearend was close to ³/₄ percentage point higher than projected two years earlier. Although manufacturing employment fell, manufacturing unemployment remained low. The increase in unemployment in 2002 occurred mainly in the service sector. Many enterprises in the ICT sector, travel industry, media industry and some retail sectors reduced their workforce and cut costs. Activity and the workforce were reduced in the ICT sector and the airline industry in particular.

Higher-than-expected wage growth

Annual wage growth was expected to decline from around 5 per cent in 2001 (including costs in connection with extra vacation days) to $4\frac{1}{2}$ per cent in 2002. Some developments pointed to lower wage growth. Profitability in the business sector, especially in manufacturing, had deteriorated over a period of several years. It was assumed that this would contribute to wage moderation. The projections were based on the assumption that wage formation functioned in the same way as in the 1990s, when manufacturing was the wage leader.

Annual wage growth in 2001, which was a year with interim wage settlements, was underestimated by ½ percentage point, in spite of accurate projections for unemployment growth. Moreover, the centralised wage increases were essentially known. Wage drift through 2001 was thus higher than projected. The growth in hourly labour costs was further underestimated because of an unexpectedly sharp rise in sickness absence. Higher-thanprojected wage growth is probably one of the explanations for the underestimation of growth in private consumption. In spite of the rise in unemployment, the wage settlement in 2002 indicated that the social partners still perceived the labour market as tight. Preliminary figures indicate overall annual wage growth of 5³/₄ per cent in 2002, which is substantially higher than projected.

The interest rate was higher than assumed

In December 2000, the pricing of forward interest rate agreements indicated that the sight deposit rate was expected to fall from 7 per cent to 6-61/4 per cent a year later and to 53/4 per cent two years later. This was the assumption underlying our projections. Money market rates were on average 0.2 percentage point higher in 2001 and 0.9 percentage point higher in 2002 than the technical assumption (see Chart 3).

This must be viewed in conjunction with a persistent shortage of resources in the economy, which was reflected in the unexpectedly high wage growth. Through 2001 and the first half of 2002, it became clear that inflation two years ahead would be higher than the projections from 2000. Monetary policy became tighter than assumed at that time.



The krone appreciated

The krone exchange rate reflected these developments. The import-weighted krone exchange rate appreciated by around 15 per cent from December 2000 to December 2002 (see Chart 4). The appreciation of the krone was especially pronounced in 2002. These developments must be viewed in the light of high and widening interest rate differentials between Norway and other countries, caused primarily by substantial reductions in interest rates in other countries. The sharp fall in global equity prices, and thus increased interest in interest-bearing securities, combined with high oil prices may also have contributed to the appreciation of the krone.³

3. Consumer price inflationan explanation of the model

The projections for consumer price inflation were relatively accurate for 2001 and 2002. A thorough evaluation must, however, look more closely at the factors that have affected consumer price inflation. Wage growth was higher than projected in both 2001 and 2002 and contributed in isolation to higher-than-projected price inflation. The appreciation of the krone exchange rate from December 2000 to end-2002 contributed in isolation to lower-than-projected price inflation. These two factors cannot be viewed separately however. Stronger-thanprojected wage growth has probably led to expectations of high interest rates in Norway. Expectations of a wide interest rate differential against other countries appear to have been an important explanatory factor behind the appreciation of the krone. **Chart 4** Actual movements in the krone exchange rate (I-44) and the technical assumption underlying the projections in IR 4/00.



Therefore, two questions should be raised:

- 1) Why did we underestimate wage growth?
- 2) Would our projections have been in line with actual price inflation if wage growth and exchange rate developments had been known?

Concerning point 1)

When the projections were made, the macroeconomic model RIMINI, which is an important tool in Norges Bank's forecasting work for the Inflation Report⁴), underpredicted wage growth for the previous years, especially the results of the wage settlements in 1998 and 2000. This raised the question of whether the model would again underpredict wage growth for 2001 and 2002. On the other hand, several years of high wage growth indicated that profitability in the business sector was squeezed, which should have a dampening impact on wage growth. The wage projections in Inflation Report 4/2000 were somewhat higher than indicated by a neutral use of the RIMINI model, but the upward revision in the wage equation was considerably smaller than was necessary to explain the previous wage settlements. Therefore, the wage projections could largely be regarded as an expectation of a return to more normal wage growth after several years of underpredicted wage growth. Actual wage growth, especially in 2002, showed that the model on the contrary continued to increasingly underpredict this variable⁵⁾. This raises the question of whether there has been a change in wage formation or whether the wage settlement in 2002 was unique and should be regarded as a shock.

³⁾ See box: "Factors behind the developments in the krone exchange rate", Inflation Report 1/2003.

⁴⁾ For more information about the RIMINI model and our use of it see Olsen and Wulfsberg (2001).

⁵) The revision of the national accounts in summer 2002 somewhat improved the model's explanatory power for the last half of the 1990s. Nonetheless, the model has continued to underpredict wage growth the last few years, especially for 2002.

Table 2 Forecast error in 2001 and 2002 and the effects of changes in assumptions. Positive figures indicate that projections are too high. Percentage point

_	Rise in	CPI-ATE	Annual wa	age growth
	2001	2002	2001	2002
Aggregate error	0	1/4	-1/2	-1¼
Residual error				
- after incorporation of correct estimates for exogenous variables ¹)	-0.1	-1/2	-3⁄4	-2
- and after incorporation of correct projection for wage growth				
(annual wage growth and hourly wage growth)	+0.1	0	0	0
Memo: Isolated effect of incorporation of correct exchange rate	-0.1	-0.6	-0.1	-0.6

¹⁾ Interest rates, the exchange rate, fiscal policy, oil prices, international producer prices and working hours.

In a scenario with a shift in wage determination in Inflation Report 4/2000, we illustrated a possible path for wage and price inflation, where weak profitability in manufacturing did not moderate wage growth to the same extent.⁶⁾ We pointed out that the two divergent trends in the Norwegian economy, with falling manufacturing employment and continued growth in employment in the public and private service sectors could contribute to tension between the sectors and lead to changes in wage determination, with the sheltered sector playing a more prominent role in determining overall wage growth. Such a development could mean that labour market tightness would have a greater impact on wage determination. In this alternative scenario, wage growth was around 1 percentage point higher from 2002. This is largely in line with actual wage growth.⁷)

Based on the last few years' experience, we have looked at different empirical models for wage growth. In *Inflation Report* 1/2002, we described an alternative wage equation. The most important difference from the wage determination described in the RIMINI model is that the alternative wage equation models wage growth for the Norwegian economy as a whole without assuming that manufacturing is the wage leader. Overall labour market conditions play a relatively larger role than profitability. Used in isolation in autumn 2000, this alternative wage equation would have projected the outcome from the wage settlements at 5½ per cent both in 2001⁸⁾ and 2002. This is broadly in line with actual developments. In the last reports, this equation has received more emphasis in our projections.

Concerning point 2)

To answer the question of whether our projections would have been accurate if wage growth and exchange rate developments had been known, we can start by looking at the RIMINI model as it was used in December 2000.⁹⁾ The first line in Table 4 shows the forecast error for consumer price inflation and wage growth for both 2001 and 2002. The projections for CPI-ATE were close to the outcome for 2001 and 2002. The projections for wage growth were too low both years.

The second line shows the residual forecast error after the incorporation of the actual values for a number of key exogenous variables such as interest rates, the exchange rate, fiscal policy, oil prices, producer prices and working hours. Exchange rate movements are the main reason that the projection for price inflation for 2002 is now _ percentage point lower than the outcome. In the model, a stronger exchange rate will contribute to reducing prices for imported goods, which in turn curbs wage growth and in the next round price inflation. Therefore, the forecast error increases for both wage growth and price inflation when the actual values for the exogenous variables are incorporated in the model. Experience from the last two years indicates that such an exchange rate effect has not been especially pronounced.

The third line shows the residual forecast error after the incorporation of the actual outcome for wage growth. We see that if both the exchange rate and wage growth had been known, the forecast error would essentially have been eliminated in the model.

In a box in *Inflation Report* 2/2002, we provided a further account of the relationship between the exchange rate and inflation. Any effects on wages, and thereby on prices, of changes in the krone exchange rate will probably depend on how wage determination functions and the inflation expectations applied by the social partners in the wage settlements. With a credible inflation target for monetary policy, the social partners are likely to apply an expected inflation rate close to 2½ per cent as a basis for wage negotiations. In this case, it may be less likely that a stronger krone exchange rate will trigger a downward price-wage spiral.

4. Overview of projections from 1994-2001

Besides studying the projections in a single report, it is important to consider whether we make systematic errors over time. Charts 5 to 10 provide a comparison of actual

⁶⁾ Technically, the results are obtained by removing the negative contribution from the add factors in the wage equation. This is accomplished by raising the equilibrium wage share to the projected level in the baseline scenario in 2002.

⁷) Subsequent revisions in the national accounts have shown that productivity growth was higher and the wage share lower than what was known in autumn 2000.

⁸ Including costs, about ³/₄ percentage point, connected with extra vacation days in 2001

9) Including use of the same add factors

Charts 5 – 10 Projections for growth from Statistics Norway (SN), Ministry of Finance (FIN) and Norges Bank (NB), and actual growth. Per cent 1994 to 2000











Chart 6 Mainland demand



Actual growth

Chart 8 Unemployment rate



Chart 10 Consumer price inflation

98 99 00 01

97

0

95 96

94

4

3

2

0

figures for the period 1994-2001 with projections from Statistics Norway, the Ministry of Finance and Norges Bank made at the end of the year before the forecast year. There has been a tendency for all three institutions to underestimate the period of expansion in the 1990s. Growth in demand, employment and GDP was higher than expected every year from 1994 to 1998. In spite of this, the projections for unemployment were fairly accurate. Wage growth, however, has been systematically underestimated. The projections for CPI-ATE inflation have been relatively accurate.

Table 3 shows the average forecast error, the average absolute error (AAE¹⁰) and the relative root mean square error (RRMSE¹¹). These are measures of the accuracy of our projections for the entire period. AAE provides an indication of the average forecast error in percentage points over these years, without the forecast errors with opposite signs offsetting each other. RRMSE penalises large forecast errors more heavily than small errors, and indicates the size of the errors in relation to actual growth. This makes it possible to compare the size of the forecast errors across different variables.

The table provides a summary of the information in the charts. We see that the forecast error is smallest for wage growth and price inflation. The forecast error for consumer price inflation is virtually the same for all three institutions. Norges Bank's projections for wage growth have consistently been the most accurate.

5. Conclusions

The projections for consumer price inflation made in December 2000 were relatively accurate. Nonetheless, some conclusions may be drawn, and these have led to some change in our view of some economic relationships and our presentations in the *Inflation Report* the last few years.

Norges Bank underestimated wage growth for both 2001 and 2002. Several years of higher-than-projected wage growth raised the question of whether Norges Bank's understanding of the mechanisms which form the basis of wage determination was correct. As a result, work was begun to look at other models to explain wage growth. This work was discussed in a box in *Inflation Report* 1/2002. Recent years' experience may indicate that general labour market conditions play a more important part and profitability in manufacturing a less important part than experience over a longer period might indicate.

The krone exchange rate appreciated considerably more than the technical assumption in *Inflation Report* 4/2000. Nonetheless, our projections for consumer price inflation were very accurate. In the most recent reports, we have systematically tried to illustrate the effect of alternative scenarios on the krone exchange rate. In *Inflation Report* 2/2002, we also provided a new assessment of how we believe the krone exchange rate affects inflation two to three years ahead. Our analyses indicate that changes in the exchange rate have less impact on prices for domestically produced goods and services than we previously assumed.

Table 3 Average error, average absolute error (AAE) and relativ	/e
root mean square error. (RRMSE) Statistics Norway (SN), th	ne
Ministry of Finance (FD) and Norges Bank (NB). 1995 to 2001	

	SN	FD	NB
Growth in mainland GDP			
Average error	-1.08	-0.80	-0.79
AAE	1.08	1.03	0.81
RRMSE	0.55	0.41	0.35
Employment growth			
Average error	-0.65	-0.66	-0.61
AAE	0.65	0.71	0.68
RRMSE	0.79	0.67	0.80
Unemployment			
Average error	0.12	0.21	0.07
AAE	0.36	0.26	0.28
RRMSE	0.13	0.09	0.08
Growth in mainland demand	I		
Average error	-1.35	-1.34	-1.41
AAE	1.38	1.39	1.41
RRMSE	0.62	0.39	0.54
Annual wage growth			
Average error	-0.96	-1.44	-0.44
AAE	1.06	1.44	0.68
RRMSE	0.24	0.33	0.16
Consumer price inflation			
Average error	-0.01	0.03	0.13
AAE	0.44	0.46	0.36
RRMSE	0.22	0.28	0.27

Sources: Statistics Norway, Ministry of Finance and Norges Bank

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¹⁰ AAE (average absolute error) is defined as, $(1 / N) \sum_{n=1}^{N} |y_n - \hat{y_n}|$ where y_n represents the actual growth rate and y_n is the projected growth rate.

11 RRMSE (relative root mean square error) is defined as

 $\sqrt{1 / N \sum_{n=1}^{N} \left(\left(y_n - \hat{y}_n \right) / y_n \right)^2}$ where \mathcal{Y}_n represents the actual growth rate and $\hat{\gamma}_n$ is the projected growth rate.

Destruction of banknotes outside the central bank

by Leif Veggum, assistant director, and Peder Natvig, adviser, both in the Chief Cashier's Department

Developments in Norges Bank's cash handling services for banks in the 1980s and 1990s led to a need for a clearer distinction between central bank responsibilities and commercial services for banks. As a result, Norsk Kontantservice AS (NOKAS) was established in 2001. This raised the important question of whether the destruction of banknotes could be delegated to an external company, which Norges Bank decided to do. To our knowledge, no other central bank has outsourced this task to the same degree. This article presents the considerations taken into account, the system established to make adequate provision for security, and experience so far.

Background

Integrated automated processing and destruction

Norges Bank has had automated counting and authentication of banknotes for many years, with the automatic sorting out and removal of notes of such poor quality that they have to be destroyed. Since about 1980, the actual destruction of damaged notes has also been an integral part of the automated processing. In the 1980s, banks extensively developed their network of ATMs partly to reduce cash handling costs. Notes of a high quality were required for ATMs, which led to banks' increasingly demanding high quality notes from Norges Bank. The sorting of notes according to quality and, in time, other services for banks¹), took place in connection with Norges Bank's automated processing of notes, and generated economies of scale and scope, as several services were performed in one and the same operation.

Changes in the organisation of the supply of notes and coins

The scale of Norges Bank's services for banks expanded, and a growing proportion of Norges Bank's processing activities consisted of commercial services for banks. The distinction between central bank services and services for others gradually became less clear, and as a result there was also a lack of clarity regarding the pricing of services. This raised a number of questions. It was difficult to assess whether the resources spent on the various services could be justified. On the one hand, there was the question of whether central bank's responsibilities were being discharged in the most appropriate and most cost-effective way possible. On the other hand, there was the question of whether other services for banks were in sufficient demand and being performed by those operators able to provide them with a minimum of resources. Moreover, services for banks were in principle provided in competition with other operators, implying a risk that Norges Bank might find itself in a questionable position with respect to the legislation on competition.

The conclusion was that pricing based on actual costs would have to be introduced for the various services,

and that services for banks would hereafter have to be based on commercial principles. This was contingent on the establishment of more distinct boundaries between pure central bank tasks and services for others.

Norges Bank is required pursuant to the Norges Bank Act to issue banknotes and coins and to promote an efficient payment system. The responsibility of a banknote issuer implies the following obligations:

- Obligation to supply notes and coins. This implies issuing banknotes and coins to the required extent and ensuring that the notes and coins that are issued are readily available to the public.
- Obligation to replace notes and coins. This relates to the quality of notes and coins in circulation, and implies an obligation to accept worn and damaged notes and coins for destruction and to replace them with notes and coins of an acceptable quality.
- Obligation to redeem notes and coins, which applies for 10 years after notes and coins have been withdrawn from circulation.

The note and coin processing services required by Norges Bank, in its capacity as central bank, are associated with the obligation to replace notes and coins. The services consist of processing the notes that are to be destroyed, i.e. verifying that the notes are genuine and of a quality that requires that they be destroyed, and the destruction itself. The sorting out and removal of notes that are to be destroyed and the processing of notes that are to be returned to circulation are not defined as central bank tasks. These are therefore commercial services for commercial and savings banks.

During the past two years, major changes have consequently been made in the organisation of the supply of notes and coins in Norway. First and foremost, the processing of notes and coins, which previously took place in Norges Bank, has been transferred to NOKAS, from which Norges Bank purchases central bank services, including the destruction of notes, and the other banks purchase other services on a commercial basis. Eklund and Veggum (2002) discuss the changes and the reasons for them.

¹⁾ Counting and checking of night safe contents, handling of unsorted coins, packing of ATM cassettes, receipt and supply of notes in foreign currency, receipt and distribution of notes and coins directly from and to bank branches.

Cost-effective destruction of banknotes

The number of notes destroyed may vary substantially from year to year, and may increase sharply when there are changes in banknote series. In 2001, some 85 million notes were destroyed, of which about 75 million in connection with the automated processing of notes delivered by banks. The others consisted of notes from old series and notes that were rejected during the automated processing. These notes are destroyed in Norges Bank after close inspection. It is estimated that during a year without replacement or upgrading of banknote series some 60 million notes will be destroyed, of which about 58 million in connection with automated processing. By way of comparison, there are a total of about 100 million notes in circulation in Norway.

The overall efficiency of processing activities depends largely on the exploitation of economies of scope and scale. There are considerable advantages to combining destruction of notes with other processing activities. Therefore, when NOKAS was established future note destruction was a key issue. There were two alternatives:

- Norges Bank carries out the destruction itself, after NOKAS has sorted the notes as a service for banks.
- NOKAS carries out the destruction as a service for Norges Bank.

The two options are shown in Chart 1. Central bank tasks are shown by means of a grey background.

Calculations indicated that with prices based on the costs of the various services, it would be more profitable from a financial point of view to allow NOKAS to carry out the destruction, i.e. Alternative 2. This reflects the fact that economies of scale and scope are achieved when central bank services and services for others are carried out as an integrated process. In Alternative 1,

Alt. 1: Destruction in Norges Bank NOKAS NORGES BANK Authentication and quality sorting Fit Packing Unfit for circulation Authenticity and Destruction quality control Rejected Alt. 2: Destruction in NOKAS NORGES BANK NOKAS Authenticity and quality sorting Packing Fit Supervision of NOKAS Unfit for Destruction circulation Authenticity and Rejected Destruction quality control

some of the notes are processed more than once, because if destruction takes place in Norges Bank, the notes have to be checked again for authenticity and correct quality.

Before Alternative 2 could be chosen, it was necessary to determine the risk inherent in delegating destruction to an external company, and the measures necessary for dealing with this risk.

So far, central banks have been highly restrictive about delegating destruction to others. Only a couple of countries have done so previously, and then with a considerable degree of direct participation by the central bank. Other central banks that have outsourced cash handling have chosen so far to carry out destruction themselves – in other words they have opted for Alternative 1.

Prerequisites for delegating destruction to an external company

Destruction of notes places very special demands on security and control, partly because it is not physically possible to check at a later time how many notes have been destroyed. Before allowing others to destroy banknotes, Norges Bank must be assured of the following:

- only genuine banknotes are destroyed
- none of the notes destroyed fulfil the requirements for further use
- notes reported to have been destroyed have really been destroyed.

It will be very difficult to show at a later time that reported destruction tallies with actual destruction. We therefore have to rely on automated functions and on the reports received by Norges Bank reflecting what has actually taken place.

After conducting a study and evaluating the risk associated with external destruction of banknotes, Norges Bank drew up a list of prerequisites and requirements that would have to be fulfilled. One key prerequisite is that authentication and destruction may only be carried out with equipment that has been approved by Norges Bank. This means that only notes that have satisfactorily undergone an automated authentication process but found to be of too poor a quality to be put back into circulation are destroyed. These notes are sent directly into the destruction unit after inspection, and it is not possible for operators to interfere in the process as long as the machines are in operation.

Another important prerequisite is that Norges Bank sets and checks the settings of the destruction machinery, and that it is not possible for anyone other than Norges Bank to change the programming of the destruction equipment. It was therefore necessary to strengthen the protection of the software, and the machines have been set up in such a way that any attempt at manipulation will be registered and discovered. Further prerequisites are that Norges Bank can monitor the machines and the destruction, and that in the event of interrupted operations it is possible to trace exactly what has happened. A new monitoring system therefore had to be developed for the machines. This is described in more detail below.

Notes that are rejected during the automated processing, i.e. notes that the machines do not recognise as genuine, or notes that for various reasons the machines are unable to process, must be returned to Norges Bank for authentication and destruction.

If these requirements are satisfactorily met, outsourcing will not entail increased risk, and it will not be possible to destroy counterfeit notes.

The monitoring system

The general principle of the monitoring system is that the destruction machine reports the quantity destroyed directly to Norges Bank without machine operators having the opportunity to change the data. Norges Bank checks these data against other ongoing reporting from NOKAS. All destruction machines are monitored continuously, so that we can ascertain what happens in connection with machine stops and other abnormal operating situations. In this way we can verify at a later time what has happened and how many notes have really been destroyed.

Any discrepancies between automatically and manually reported figures, or irregularities in connection with destruction, are followed up by a separate control group in Norges Bank.

Experience so far

The installation of the system started in February 2002 and was completed at the end of June 2002. Experience after a little more than four months of operations indicates that the system appears to be functioning according to expectations. Technically, the reporting of data and alerts in connection with interruptions is functioning well, and so far there have been no major problems associated with follow-up. Our conclusion so far is therefore that security has been satisfactorily provided in connection with the destruction of banknotes. This solution will be maintained as long as economies of scope and scale are exploited in such a way that it is financially more favourable for Norges Bank to purchase the service than to carry out the destruction itself.

References:

Eklund, Trond and Leif Veggum (2002); "Change in the organisation of the supply of notes and coins". *Economic Bulletin* no. 2/2002, pp. 58-62.

Banks' pricing of risk associated with corporate lending

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If a bank on average prices its loans too low in relation to the risk associated with the loans, the bank's financial strength will deteriorate over time. Banks' pricing of risk is therefore important to the stability of the financial system. The pricing of loans also has an impact on the allocation of capital in the economy. In this article, we attempt to analyse the degree of risk pricing of loans to Norwegian limited companies. We look at the relationship between an estimated corporate borrowing rate and a bankruptcy risk measure, both calculated on the basis of the annual accounts of a large selection of enterprises for the period 1989-2001. The results indicate that the degree of risk pricing has increased during the period. The interest rate offered to high-risk enterprises is on average somewhat lower than we would expect if the rate does not have a retroactive effect on the risk of bankruptcy. We argue that this may be attributed partly to the effects of asymmetric information in the credit market.

1 Contents

This article opens with a general discussion of the credit market. We look at strategic pricing, the information aspect and the relationship between lender and borrower. The next three sections introduce our model, methods and data. The following two sections contain an analysis and discussion of our findings, including a brief analysis of the degree of risk pricing in various industries and regions. The article concludes with a summary. The annexes present a more detailed description of some of the results.

2 The credit market

A number of factors, such as portfolio effects, the competitive situation, the scope of asymmetric information and risk aversion, have an impact on the pricing of corporate loans. The information aspect in particular has been the subject of extensive economic literature. The following discussion is not exhaustive, but provides a brief presentation of some of the factors that we believe may have special relevance to the analysis.

Portfolio effects

In a market with free competition and symmetric information, a risk-neutral bank will set the lending rate at a level that covers expected losses associated with a loan. If the bank is not risk-neutral, it will differentiate between risk that may be eliminated in a large portfolio and nondiversifiable risk. Other things being equal, the bank will want to set the interest rate at a level that will include a risk premium that reflects the individual loan's contribution to the portfolio's overall risk.

It may be argued, however, that portfolio effects have a limited influence on banks' pricing of individual loans. Loan agreements are often fixed for a specified period, and may only be renegotiated in the course of this period if there is a violation of important borrowing terms. These terms may relate to the company's debt servicing capacity, its financial strength or the estimated value of loan collateral. It is unnatural to assume, however, that the loan agreement terms are linked to the bank's general transactions. Therefore, when the composition of the bank's portfolio changes, the bank will have limited possibilities of repricing the risk. Making a sound estimate of each loan's contribution to the portfolio's overall risk will also present a challenge. For example, very few companies in Norway are listed on the stock exchange. Correlations in credit risk must therefore be calculated largely on the basis of, for example, industry and location using historical data on losses. Therefore, it is reasonable to assume that banks deal with diversification primarily by limiting their exposures in some industries when entering into new loan agreements.

Strategic pricing

Interest rates may be used strategically by the bank to acquire new and retain existing customers. The bank may have a good profit margin on "secondary" products which may be sold in combination with the loan. Products such as payment services, insurance and financial advice may therefore cross-subsidise interest rates. In a market segment where competition is weak, the bank may want to underprice risk for a period if they see an opportunity to increase market power at a later time. A bank which can offer customers a wide range of services will normally have a greater opportunity to pursue such a strategy than a specialised lender.

One may assume that with effective competition, such strategic pricing is less common. Competition, however, does not necessarily have a clear-cut effect on interest rate setting. A bank with experience understands that the profitability of its lending operations is higher during periods of expansion than during periods of contraction, and that risk calculations made when the economy is doing well are not necessarily correct in the event of an economic turnaround. Therefore, a good, long-term strategy for the bank may be to factor in extra risk in periods when profitability is high. It may be tempting, however, to deviate from this strategy in the short term, especially when competing with less well-established loan providers which may operate with risk premia that are too low in an effort to win market shares during a period when the market is especially profitable.²)

The information aspect

In the loan capital market, there will be several dimensions of private information. Borrowers will know more than banks about their prospects for the future and about the risks associated with ongoing projects. Banks, on the other hand, will acquire information about borrowers which is not known by competing lenders. The first may be the source of moral hazard and adverse selection, while the latter may give banks an information profit on existing customers.

Owners of a company with limited liability will have the entire upside potential of a risky investment, while they can only lose their equity if the investment proves to be unsound. When a company has private information about the risk associated with the projects in which it chooses to invest, it is natural to assume that it selects the project that maximises the return on equity. This project will not necessarily be the one that generates the highest expected net present value of total assets. If the upside potential is sufficiently large or the equity ratio is sufficiently small, the company may well choose a project that gives a negative expected net present value. The risk that a company may use its information advantage to defy the bank's intentions with the loan agreement is referred to as moral hazard in economic literature. The possibility of moral hazard is one of the reasons that banks require collateral and that loan agreements often contain detailed debt covenants. If the debt covenants are not complied with, the bank may demand renegotiation of the agreement before it expires.³⁾ In some cases, the bank may cancel the agreement.

If the bank believes that a borrower has increased its risk, it will require compensation in the form of a higher interest rate when the loan is renegotiated. However, a higher interest rate may increase the risk the borrower wants to take because the net present value of equity after an interest rate increase may be too low if the company restricts itself to projects with moderate risk. If a bank tries to factor in every risk by charging a sufficiently high interest rate when it establishes new credit relationships, the bank will face the problem of adverse selection.⁴⁾

Relations between lenders and borrowers

Under asymmetric information, there may be considerable differences in the pricing of new and existing loan agreements. Banks will typically want to monitor the companies in their loan portfolio. It is reasonable to believe that monitoring costs diminish as the bank becomes familiar with the company so that the bank can gradually offer a lower interest rate than a competitor. The bank's information advantage with regard to the existing credit relationship may also be a disadvantage for the company. If the bank chooses to cancel the loan agreement, alternative credit suppliers may interpret this as a signal that the bank has negative information about the company. The risk of this type of stigma increases the company's opportunity cost. The bank, on the other hand, will be able to charge a higher interest rate than would otherwise have been possible.⁵⁾ It may be argued that some costs will accrue again if the bank chooses to replace the company with a new loan customer. Because the company's prospects are uncertain, these costs may prompt the bank in some cases to retain a debtor even though the bank believes that for the moment the debtor represents a high risk in relation to the interest rate the bank can charge. By cancelling the loan agreement or petitioning for company bankruptcy, the bank relinquishes the possibility of future income if the company's prospects improve and the risk involved declines. This possibility may be considered an option for the bank and the price of this may be seen as part of the opportunity cost of cancelling the credit relationship.⁶⁾

There is little doubt that the information aspect has a strong influence on the credit market.

The significance of asymmetric information for the functionality of the credit market as a whole will, however, depend on the institutional framework, relevant laws and regulations, expertise in the sector and available instruments, as well as special cultural factors and historical experience.

3 A simple model for pricing loans

We will now look at a simple two-period model for pricing loans. Let ρ be the loan's rate of return. With probability (1-*p*), the company will not go bankrupt and the bank will be repaid (1+*r*) for every krone borrowed at the end of the period. With probability *p*, the company will go bankrupt and the bank will only receive a portion α of the agreed amount. In both cases, administrative costs γ accrue for each krone borrowed. The relationship is

²⁾ Øverli (2002) provides a general discussion of banks' adjustments to business cycles as well as possible implications for financial stability. *Financial Stability* 1/2001, p. 29, provides information about the effects of competition on the spread between bank lending rates and three-month money market rates for the same period.

³⁾ See, for example, Berlin and Mester (1992).

⁴⁾ See Stiglitz and Weiss (1981).

⁵⁾ See, for example, Sharp (1990).

⁶⁾ See, for example, Dixit and Pindyck (1993).

summarised in equation (1). Further, we assume that the bank will require a premium for the credit risk involved when it provides the loan to the company instead of investing in a risk-free alternative with return $1+r_f$. Motivated by the price equation from the capital asset pricing model⁷), we describe this risk premium as the product of the loan's beta value β and a parameter π , which is meant to represent the bank's degree of risk aversion⁸) (see equation (2)).

(1)
$$E(1+\rho) = p\alpha(1+r) + (1-p)(1+r) - \gamma$$

(2)
$$E(\rho) - r_f = \beta \pi$$

In equation (1) and (2) we can eliminate $E(\rho)$ and solve the equation to find the interest rate. Repayment of the loan is uncertain, whereas costs and the risk premium accrue with certainty. The interest rate is therefore set to cover the sum of the risk premium, opportunity cost and administrative costs, adjusted for the probability of bankruptcy and the loss given default rate as shown in equation (3).

(3)
$$(1+r) = \frac{\beta \pi + (1+r_f) + \gamma}{(1-p(1-\alpha))}$$

This two-period model does not take into account the significance of the loan's maturity for interest rate setting. Strictly speaking, we can therefore only use this model sequentially if we decide that during each period, the company can immediately repay the entire debt and that the bank knows this. The uncertainty may then be connected with whether the company will go bankrupt each subsequent period.

The model does not take into account any effects of asymmetric information. As discussed in section 2, asymmetric information may set a limit on how high the bank wants to set interest rates.⁹⁾ For high-risk companies, interest rates determined by equation (3) will probably be higher than actual interest rates for companies of this kind. The magnitude of this effect will depend, however, on whether the bank cancels the loan agreement when the risk of bankruptcy becomes too high. As discussed in section 2, the bank may be reticent to do this if it has non-reversible costs in connection with the establishment of new credit relationships.

4 Data

We do not have access to enterprises' actual borrowing rates. Therefore, we have calculated an estimated borrowing rate using information from the enterprises' annual accounts. In the calculation, we have used the enterprise's interest expenses as a percentage of average long-term debt and bank overdrafts through the year. Since we use an unweighted average of debt at the beginning and end of the year, the calculated average debt will be lower (higher) than the actual average if the enterprise has repaid a large portion of the debt (raised considerable new debt) towards year-end. Interest expenses in the profit and loss account show, however, actual interest expenses in the course of the year. In such a case, the borrowing rate will therefore be higher (lower) than the actual borrowing rate.

Chart 1 shows the distribution of the estimated borrowing rate after excluding the top and bottom 5 per cent. The distribution peaks at around 8 per cent, shows relatively few observations above 30 per cent and a slight jump at zero. As a result of problems connected with the use of unweighted average debt, we have found it appropriate to reduce the data set somewhat more. We have chosen to exclude observations of borrowing rates below 2.5 per cent and above 25 per cent. The sample then consists of 118 464 enterprises and a total of 532 066 observations over the period 1989-2001.



We use predictions from Norges Bank's credit risk model¹⁰) as estimates for the probability of bankruptcy for each company. We have used the yield on Norwegian government bonds with a maturity of 10 years as the risk-free interest rate.

⁷) See, for example, Copeland and Weston (1988) for an introduction to the capital asset pricing model. For a discussion of the capital asset pricing model in relation to banking, see Pyle (1971) and Hart, et al. (1974).

⁸⁾ The parameter β is interpreted as the individual loan's correlation with the bank's total portfolio of loans. If the bank is risk-averse, then π is positive, whereas the value of π is zero if the bank is risk-neutral.

⁹⁾ In isolation, higher interest rates will increase the probability of bankruptcy, even when we disregard the effects of asymmetric information, by weakening the company's financial strength. Therefore, in the empirical analysis, we cannot interpret the deviation from the interest rate set in equation (3) as effects of asymmetric information alone.

¹⁰ This model uses an estimated relationship between bankruptcy and company characteristics such as equity ratio, liquidity, earnings, number of years since establishment, etc. See Bernhardsen (2001) or Eklund, Larsen and Bernhardsen (2001) for a more comprehensive description of the model.

5 An empirical specification of the model

Many questions will arise when we apply this model to the data. How reliable are the estimates we use for borrowing rates and bankruptcy probability, and what relationship do we find between them? Is there an interest rate inertia, and what is the possible reason for this? If the estimates for borrowing rates and bankruptcy probability are adequate and the actual rate is set according to the model, what does this imply for the loss given default rate banks must have applied, and what do our findings show about how this has varied over the period?

To answer these questions, we have chosen to estimate the following relation using the non-linear least-squares method¹¹:

(4)
$$(1+r_{it}) = q_1(1+r_{it-1}) + q_2 \frac{\delta_t + (1+r_{f_t})}{(1-p_{it}(1-\alpha_t))} + e_{it}$$

In equation (4), *i* refers to company and *t* denotes year. The parameter q_1 indicates the share of enterprises for which the borrowing rate is maintained at the same level as in the previous period, for example as a result of a fixed-rate agreement. The parameter q_2 indicates the share of rate agreements set in accordance with equation (3). A priori, we would expect that $q_2 = 1 - q_1$, but we impose no restrictions on q_1 and q_2 when estimating the model beyond assuming that they remain constant throughout the period. The parameters δ_t are the sum of administrative costs γ and the risk premium $\beta\pi$. We have assumed that this parameter will vary over time, although not from one company to another at the same point in time. This corresponds to a situation where banks do not wish or are not able to factor in individual portfolio effects in the interest rate, as discussed in the introduction. The parameter β can then be interpreted as a variable indicating how the profitability of corporate loans is correlated with other risks in the bank's total portfolio, for example loans to the household sector, interbank loans, domestic and foreign share capital etc. The loss given default rate $(1-\alpha_t)$ is also only assumed to vary over time.

We have now allowed for the possibility that the rate an enterprise pays may be constant between two periods, and that the difference we observe is only a coincidental result of the method used to calculate the rate. It may be argued that this will not be relevant given the motivation for the two-period model in section 3. One solution may be to assume that the bank, even though it is able to verify at no cost that the enterprise is solvent in the current period, is not able to calculate at no cost the probability that the enterprise will go bankrupt in the next period, and may therefore choose to keep the interest rate constant.¹²

6 Estimation results¹³⁾

We estimate the parameters q_1 and q_2 at 0.568 and 0.429 respectively. The fact that both parameters are between 0 and 1, and that their sum is 1, firmly supports the interpretation that they are shares. The estimated sum of administrative costs and risk premium varies over the period from a minimum value of 0.01 to a maximum of 0.065. We find it reasonable that this parameter may vary between 1 and 6.5 per cent. Chart 2 shows the estimates for the loss given default rate $(1-\alpha_t)$ over the period.

The loss given default rate is lower than expected and follows a surprising path through the period¹⁴).Just before and during the banking crisis the estimate varies around 10-15 per cent, while 20-25 per cent is more representative for the last half of the 1990s. In our view, an







¹¹⁾ For an introduction to the non-linear least-squares method (NLS), see for example Greene (1997).

 12 An estimate of the probability that a company will be declared bankrupt in year t+1 may be calculated at no cost from the annual accounts for year t. However, the accounts for year t are not generally available until year t+1 and cannot be used to determine the interest rate the company must pay in the course of year t. The assumption is nonetheless stylistic and is applied in order to simplify the problem. We do not have any information on loan maturities.

13) See Annex A for regression results.

¹⁴⁾ The relationship between bankruptcy probability and the interest rate is significant in all years apart from 1989, see the confidence intervals in Charts 2 and 3. We have also used figures for 1988 in the calculation for 1989 and therefore have few observations.

average loss given default rate of about 50 per cent might be expected around the time of the banking crisis, possibly decreasing to about 30 towards the end of the period. One reason for this contradiction may be that the degree of differentiation when setting interest rates has increased in the period, and that the degree of differentiation was low in the first half of the 1990s¹⁵). The model being estimated assumes full risk pricing throughout the period, so that the implied rate of loss given default will be low if the pricing is incomplete.

In an attempt to examine to what extent this result is robust to "measurement errors" in the estimated borrowing rate or the estimate for bankruptcy risk, we have estimated the same model for enterprises that are all represented by at least 10 consecutive observations.¹⁶) We thereby exclude all observations from enterprises that were previously excluded for one or more years because the estimated borrowing rate was outside the specified interval of 2.5 to 25 per cent¹⁷). For this sample, we estimate the parameters q_1 and q_2 at 0.605 and 0.392 respectively. The parameters δ_t are also virtually unaffected by the reduction in the data set. Chart 3 shows that the estimates for the loss given default rate are now generally higher. With the exception of 1989, it is now fairly stable at about 25 per cent in the period around the banking crisis, while it varies around 40 per cent in the last half of the period. We see no reason to assume that banks have estimated a higher loss given default rate for the enterprises in this sample and ascribe the difference in level to varying degrees of uncertainty in the estimated borrowing rate and bankruptcy probability. The loss given default rate is now more in line with what we expect, but because the level continues to rise, we see no reason to change our interpretation that the degree of risk pricing has increased in the period.

7 Are banks' pricing risk adequately?

In the two previous sections, we analysed how banks actually set corporate borrowing rates. We found a significant relationship between bankruptcy risk and borrowing rates and attempted to analyse the degree of risk pricing in light of this. In this section, we attempt to analyse whether banks' pricing of risk has been adequate both with regard to the degree of differentiation and the level of the interest rate. In Chart 4, the enterprises in the sample are divided into three risk groups based on the level of bankruptcy probability. The boundaries between "low", "medium" and "high" risk have been determined on a discretionary basis. Chart 5 shows the percentage of debt that can be assigned to the various risk classes.







The data confirm that banks differentiate between the degree of risk in their pricing of loans¹⁸⁾. However, we want to investigate the quantitative relationship. A difference in the borrowing rate of less than two percentage points between high- and low-risk enterprises may seem small. Furthermore, it may be questioned whether a total margin for the overall lending portfolio of about 4 to 5 percentage points above the risk-free interest rate is sufficient to cover expected loan losses, administrative costs and risk premium¹⁹).

Again, our basis is the model set out in equation (3). However, instead of using the estimated model, estimates for the various parameters have been inserted. We define a "benchmark rate" as:

19) The margin must also cover costs related to capital adequacy

¹⁵⁾ One reason for the higher degree of risk pricing may be that competition has intensified in the period, see Financial Stability 1/2001, p. 29.

¹⁶⁾ The data set now contains 134 712 observations for approximately 10 000 enterprises

¹⁷⁾ If "measurement errors" in the estimated borrowing rate are correlated over time, we would expect less 'noise' in this data set. Bankruptcy probability and the borrowing rate are both calculated using the same annual accounts, and we would therefore also expect less 'noise' in bankruptcy probabilities.

¹⁸)We have also examined a division into 8 and 12 risk groups and found that there is a relationship between the estimated borrowing rate and the risk group for all the years in the period 1989-2001.

(5)
$$r_{ii} = \frac{\beta \pi + (1 + rf_i) + \gamma_i}{(1 - p_{ii}(1 - \alpha_i))} - 1$$

To find an estimate for the cost component γ , we have used figures from banking statistics. We have assumed that the share of banks' administrative costs related to corporate lending is the same as the interest income share of banks' overall income from corporate lending each year. This amount is divided by the total amount of corporate loans in order to arrive at a premium in per cent. The estimate falls somewhat in the period, from about 3.2 per cent in 1989 to 2.1 per cent in 2001 (Chart 6).

Chart 6 also shows the model estimates for the sum of administrative costs and risk premium δ_t , (section 6). The spread between the curves provides an estimate for the risk premium $\beta \pi$, that, perhaps surprisingly, varies



2) Calculated on the basis of banking statistics



Chart 8 Average estimated borrowing rate and benchmark rate. Per cent per year

considerably in the period. On the basis of the chart, it may be tempting to conclude that banks have regarded corporate lending as particularly correlated with other risks in the period around the banking crisis and after 1998. There is a spread of 1.1 per cent on average in the period. We find an alternative estimate for the risk premium from banking statistics by using the average of banks' overall profits related to corporate loans divided by gross corporate loans for the period 1993-2001. We also find this to be about 1 per cent. In our calculation of the benchmark rate, we therefore use a constant risk premium of 1 per cent. We also use a constant loss given default rate of 40 per cent, the yield on 10-year Norwegian government bonds as the risk-free interest rate, and the estimates we have for bankruptcy probabilities. Chart 7 shows the average estimated borrowing rate and the benchmark rate for 12 risk groups. We see that the benchmark rate



Chart 9 Average estimated borrowing rate (dashed lines) and benchmark rate (solid lines). Per cent per year



is higher than the estimated rate for the enterprises with the highest risk exposure. This is perhaps not surprising considering that, in our calculation of the benchmark rate, we have not taken into account that banks may wish to set an upper limit for the interest rate. The benchmark rate can only be interpreted as a correct price for risk in a situation unaffected by asymmetrical information or other factors that cause the rate to have a retroactive effect on bankruptcy probability.

According to the analysis, the benchmark rate was on average about the same as the estimated borrowing rate up to 1994 (Chart 8). The estimated borrowing rate was then somewhat lower than the benchmark rate up to 1997. During this period, the credit market expanded rapidly and competition intensified, while risk in the enterprise sector was generally perceived as low and falling. This may have contributed to a lesser degree of risk pricing. Between 1999 and 2001, however, the estimated borrowing rate was higher than the benchmark rate. One reason for this may have been fears of higher loan losses as a result of increasing unrest in financial markets in 1998 and 1999, in addition to the negative developments in the latter half of 2001²⁰. Moreover, greater focus in general on risk pricing and the introduction of more advanced risk management systems may have contributed to an increase in risk pricing. Our impression is that the large banks in particular have systematically worked on this for several years, partly to enable them to use internal credit risk models for determining capital adequacy, as is possible under the proposal for the new capital adequacy rules (Basel II).

The benchmark rate for high-risk enterprises was markedly higher than the estimated borrowing rate in much of the period up to 1999 (Chart 9). Since 1999, the benchmark rate for high-risk enterprises has stood at about the same level as the estimated borrowing rate, while the borrowing rate for enterprises with low and medium risk has been higher than the benchmark rate.

Brief comments on various industries and regions

We find that there is a clear relationship between the estimated borrowing rate and risk group in all the industries we have analysed except the fishing industry (Annex B). In the fishing industry, there was little correlation between these two indicators. In 1999, for example, the estimated borrowing rate for low-risk enterprises was higher than the rate for high-risk enterprises in this industry. The degree of risk pricing, measured by the difference in the estimated borrowing rate between the highest and lowest risk group, is greatest in the construction and hotel/restaurant industries. There are, however, small differences between the various industries we have analysed. The property industry has by far the lowest estimated borrowing rate, averaging 10 per cent in the period, while the rate was highest in retail trade, averaging 13.5 per cent.

According to the analysis, there are relatively small regional differences in the degree of risk pricing. There is a relationship between the estimated borrowing rate and risk group in all regions and in all years (Annex C). The difference in the estimated borrowing rate between high- and low-risk groups in the period is greatest in Northern Norway and smallest in Oslo/Akershus. One reason why the difference is smallest in Oslo/Akershus may be that there is stiffer competition between banks for loan customers in this region. The average estimated borrowing rate is about the same in all regions.

8 Summary and conclusion

In this article, we have assessed the relationship between the estimated borrowing rate and a bankruptcy risk measure using a simply motivated regression model. The regression analysis shows a significant relationship between bankruptcy risk and the estimated borrowing rate, where we interpret the regression coefficient as an estimate of the loss given default rate banks must have used if the rate was set in accordance with the model. While we, a priori, would assume that the loss given default rate has fallen in the period, we find that the implied loss given default rate increases. We interpret this contradiction to mean that the degree of risk pricing has increased in the course of the period. We have also calculated a benchmark rate on the basis of estimated risk and relevant cost components in an attempt to give some indication of whether risk differentiation has been adequate. We find that there are, on average, small differences between the benchmark rate and the estimated borrowing rate but that the former was marginally higher in the period 1995-1997 and marginally lower in 1999-2001. The figures may indicate that loans to high-risk enterprises were priced too low in the period up to 1998. From 1999 onwards, however, the benchmark rate has been about the same as the estimated borrowing rate for high-risk enterprises. We find small differences in the degree of risk pricing between the various industries and regions.

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²⁰⁾ In order to comment on changes in the degree of risk pricing by banks, it would also have been of interest to analyse changes in the number of rejected loan applications. We do not have any information about this.

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Annex A Regression results:

(27,5818) Prob > F Root MSE Res. dev. als)	(9) = 138 = 0.00 = .035 = -1460	9017 000 54994 5011					F(27,134062 Prob > F Root MSE Res. dev. (nls)	0) = 0.0 = 0.0 = .03 = .560	33779 0000 01997 0694.5				
R	Coef.	Std. Err.	t	P > t	[95% Conf.	[Interval]		Coef. Std	Err. t	P > t	[95% C	Conf. Intervo	 l]
+ q1	.5675235	.0012959	437.90	0.000	.5649835	.5700634	+ q1	6048628	.0021057	287.25	0.000	.6007356	.6089899
$\overline{q2}$.4293936	.0014279	300.72	0.000	.426595	.4321922	q2	3924014	.002334	168.13	0.000	.3878269	.396976
d89	.03						d89	.03.					
d90	.0377677	.0017475	21.61	0.000	.0343427	.0411928	d90	.0344721	.0030941	11.14	0.000	.0284078	.0405365
d91	.0483756	.0017427	27.76	0.000	.04496	.0517911	d91 .	0471869	.0030849	15.30	0.000	.0411406	.0532332
d92	.0530519	.0017138	30.96	0.000	.0496929	.0564109	d92 .	0524137	.0030488	17.19	0.000	.0464381	.0583892
d93	.0348689	.0016611	20.99	0.000	.0316132	.0381245	d93 .	0282857	.0029413	9.62	0.000	.0225207	.0340507
d94	.0101504	.0016104	6.30	0.000	.0069941	.0133067	d94	0026869	.0028484	-0.94	0.346	0082698	.0028959
d95	.026263	.0016244	16.17	0.000	.0230791	.0294469	d95 .	0183903	.0028861	6.37	0.000	.0127336	.0240471
d96	.021012	.0016142	13.02	0.000	.0178483	.0241757	d96 .	0128889	.0028626	4.50	0.000	.0072783	.0184994
d97	.0174669	.0015882	11.00	0.000	.0143541	.0205797	d97 .	0074406	.0028312	2.63	0.009	.0018915	.0129897
d98	.0596362	.0016311	36.56	0.000	.0564393	.0628331	d98 .	0568858	.0029395	19.35	0.000	.0511244	.0626472
d99	.064943	.0016321	39.79	0.000	.061744	.0681419	d99 .	0622513	.002948	21.12	0.000	.0564733	.0680294
d00	.0434577	.0016038	27.10	0.000	.0403142	.0466011	d00 .	0395939	.0029036	13.64	0.000	.0339029	.0452849
d01	.0540313	.0016258	33.23	0.000	.0508447	.0572179	d01 .	0544442	.0029624	18.38	0.000	.0486379	.0602505
(1-a)89	.0762203	.0327269	2.33	0.020	.0120766	.140364	(1-a)89 .	1058379	.0785803	1.35	0.178	0481781	.2598539
(1-a)90	.1692386	.0117114	14.45	0.000	.1462846	.1921926	(1-a)90 .	2557277	.0249103	10.27	0.000	.206904	.3045514
(1-a)91	.1538507	.0120374	12.78	0.000	.1302577	.1774437	(1-a)91 .	2626347	.0236628	11.10	0.000	.216256	.3090135
(1-a)92	.1198669	.0101518	11.81	0.000	.0999698	.1397641	(1-a)92.	2479645	.0202783	12.23	0.000	.2082193	.2877096
(1-a)93	.1556884	.0108725	14.32	0.000	.1343785	.1769982	(1-a)93.	2242997	.0229499	9.77	0.000	.1793183	.2692811
(1-a)94	.2320214	.0118519	19.58	0.000	.2087921	.2552508	(1-a)94.	3294118	.0301303	10.93	0.000	.270357	.3884667
(1-a)95	.2370839	.011433	20.74	0.000	.2146756	.2594922	(1-a)95 .	3107942	.0291615	10.66	0.000	.2536382	.3679501
(1-a)96	.2772347	.0126754	21.87	0.000	.2523912	.3020782	(1-a)96 .	3857019	.030508	12.64	0.000	.3259067	.4454971
(1-a)97	.2235629	.0110626	20.21	0.000	.2018806	.2452452	(1-a)97 .	340759	.0342636	9.95	0.000	.2736029	.4079151
(1-a)98	.1737577	.0097461	17.83	0.000	.1546556	.1928598	(1-a)98 .	3320303	.0326596	10.17	0.000	.2680182	.3960425
(1-a)99	.2226676	.0103407	21.53	0.000	.2024001	.242935	(1-a)99 .	5293786	.0342624	15.45	0.000	.4622249	.5965322
(1-a)00	.1935901	.0099488	19.46	0.000	.1740907	.2130895	(1-a)00 .	3239914	.035376	9.16	0.000	.2546552	.3933277
(1-a)01	.210104	.0109636	19.16	0.000	.1886157	.2315923	(1-a)01 .	3770482	.0365072	10.33	0.000	.3054947	.4486017
E's, P vali	ues, CI's, a	nd correlati	ions are	asympt	otic approxi	mations)	(SE's, P value	es, CI's, a	nd correlat	tions are	asympt	otic approxi	mations)

The goodness of fit R² is calculated at 44.7 and 48.2 per cent respectively for the two models.

Annex B

AVERAGE ESTIMATED BORROWING RATE IN DIFFERENT RISK GROUPS. SELECTED INDUSTRIES. PER CENT

														Average
FISHING AND FISH FARMING	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	1989-2001
Low risk	15.5	15.6	15.0	15.2	14.7	11.9	11.0	9.7	8.5	9.5	10.4	9.7	9.9	12.0
Medium risk	15.9	14.8	15.2	15.7	13.9	12.0	10.9	10.3	8.0	9.5	9.9	9.7	10.4	12.0
High risk	16.9	16.3	16.3	15.8	14.5	12.7	12.2	11.2	9.3	9.8	10.2	10.2	10.2	12.7
Average overall	16.5	15.9	16.0	15.7	14.4	12.3	11.5	10.5	8.6	9.6	10.2	9.9	10.2	12.4
-Standard deviation	3.7	3.8	4.1	3.9	4.0	3.9	4.0	3.8	3.7	3.7	3.5	3.2	3.1	3.7
Bankruptcy probability (%)	7.60	6.69	7.86	6.31	5.16	3.30	3.62	3.57	3.18	2.80	2.76	3.15	3.19	4.55
MANUFACTURING AND MINING	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	1989-2001
Low risk	16.1	15.6	15.4	15.3	13.8	11.8	11.2	10.3	9.2	9.7	10.6	10.3	10.8	12.3
Medium risk	16.8	16.1	16.1	15.9	14.5	12.3	11.7	10.9	9.6	10.4	11.1	10.9	11.4	12.9
High risk	17.5	16.8	16.8	16.6	15.0	12.9	12.6	11.8	10.6	11.1	11.7	11.4	12.1	13.6
Average overall	16.9	16.2	16.2	15.9	14.4	12.3	11.7	10.9	9.7	10.3	11.0	10.8	11.3	12.9
-Standard deviation	4.2	4.0	4.1	4.2	4.1	3.8	4.0	3.9	3.9	4.0	3.7	3.7	3.7	4.0
Bankruptcy probability (%)	3.74	3.53	4.00	3.44	3.04	2.74	2.59	2.86	2.72	2.68	2.45	2.63	2.28	2.98
CONSTRUCTION	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	1989-2001
Low risk	16.5	16.2	16.0	15.5	14.2	12.2	11.4	10.8	9.6	10.1	10.9	10.5	11.3	12.7
Medium risk	17.7	16.8	16.8	16.5	14.7	12.7	12.2	11.5	10.4	10.8	11.5	11.3	11.8	13.4
High risk	18.4	17.9	17.7	17.1	15.5	13.5	13.5	12.3	11.5	11.9	12.3	12.2	12.8	14.4
Average overall	17.7	17.1	17.1	16.5	14.9	12.8	12.2	11.4	10.3	10.7	11.3	11.1	11.8	13.4
-Standard deviation	4.2	4.3	4.4	4.4	4.3	4.2	4.4	4.2	4.2	4.1	3.9	3.8	3.8	4.2
Bankruptcy probability (%)	4.61	4.76	5.48	4.13	3.87	3.07	2.50	2.52	2.26	2.34	2.19	2.33	2.20	3.25
RETAIL TRADE	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	1989-2001
Low risk	16.7	15.7	15.7	15.7	13.9	12.2	11.7	10.9	9.9	10.2	10.8	10.6	11.4	12.7
Medium risk	17.5	16.9	16.9	16.7	14.7	13.0	12.4	11.6	10.6	11.1	11.7	11.4	11.9	13.6
High risk	18.3	17.8	17.5	17.2	15.3	13.6	13.1	12.4	11.3	11.5	12.3	12.1	12.5	14.2
Average overall	17.7	17.0	16.9	16.6	14.7	12.9	12.4	11.6	10.6	10.8	11.5	11.3	11.9	13.5
-Standard deviation	4.3	4.3	4.4	4.4	4.4	4.2	4.4	4.4	4.3	4.2	4.1	4.0	4.0	4.3
Bankruptcy probability (%)	4.76	4.29	4.95	4.16	3.59	2.99	2.71	3.10	3.20	3.27	2.82	3.03	2.67	3.50
HOTELS AND RESTAURANTS	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	1989-2001
Low risk	14.2	14.0	14.3	14.3	12.4	10.7	9.8	8.8	7.9	8.6	9.5	9.1	9.7	11.0
Medium risk	15.0	14.9	14.8	15.0	13.3	11.2	10.4	9.4	8.8	9.1	10.1	9.5	10.3	11.7

Annex C

AVERAGE ESTIMATED BORROWING RATE IN DIFFERENT RISK GROUPS. REGIONS. PER CENT

														Average
NORTHERN NORWAY 1)	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	1989-2001
Low risk	15.4	15.0	15.0	14.7	13.1	11.0	10.3	9.4	8.5	9.0	9.8	9.5	10.0	11.6
Medium risk	16.6	15.9	15.8	15.8	14.0	12.1	11.4	10.7	9.5	10.2	10.7	10.5	11.0	12.6
High risk	17.8	17.3	17.2	16.9	15.1	13.4	12.8	11.9	10.7	11.1	12.0	11.6	11.9	13.8
Average overall	16.7	16.1	16.1	15.8	14.0	11.9	11.2	10.5	9.3	9.8	10.6	10.3	10.7	12.5
-Standard deviation	4.1	4.1	4.3	4.3	4.2	4.1	4.1	4.0	4.0	3.9	3.8	3.7	3.7	4.0
Bankruptcy probability (%)	4.09	3.76	4.01	3.25	2.99	2.51	2.39	2.68	2.50	2.39	2.18	2.39	2.12	2.87
1) Nord-Trøndelag, Nordland, Troms a	nd Finnma	ark												
WESTERN NORWAY 2)	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	1989-2001
Low risk	15.8	14.9	14.8	14.7	13.1	11.1	10.2	9.4	8.4	8.9	9.7	9.4	10.0	11.6
Medium risk	16.7	16.0	15.9	15.7	14.0	11.8	11.3	10.4	9.3	9.9	10.7	10.3	10.8	12.5
High risk	17.7	17.1	16.9	16.7	14.9	13.1	12.5	11.8	10.5	11.0	11.6	11.5	12.0	13.6
Average overall	16.8	16.0	15.9	15.7	13.9	11.8	11.0	10.2	9.1	9.7	10.4	10.1	10.7	12.4
-Standard deviation	4.1	4.1	4.2	4.3	4.2	4.0	4.1	4.1	4.0	3.9	3.8	3.7	3.7	4.0
Bankruptcy probability (%)	4.03	3.55	4.00	3.27	2.82	2.48	2.14	2.47	2.41	2.42	2.10	2.24	2.05	2.77
2) Sør-Trøndelag, Møre og Romsdal, S	Sogn og Fj	iordane, H	ordaland	and Roga	land									
SOUTHERN NORWAY 3)	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	1989-2001
Low risk	16.2	15.2	15.2	14.8	13.2	11.2	10.6	9.8	8.7	9.1	9.9	9.8	10.4	11.8
Medium risk	17.0	16.0	15.8	15.5	13.8	11.8	11.3	10.7	9.6	9.9	10.7	10.5	11.1	12.6
High risk	17.8	17.0	16.8	16.5	14.7	12.8	12.6	11.8	10.4	10.7	11.7	11.4	12.0	13.6
Average overall	17.0	16.1	16.0	15.6	13.8	11.8	11.2	10.5	9.3	9.7	10.5	10.3	10.9	12.5
-Standard deviation	4.2	4.2	4.2	4.3	4.3	4.1	4.2	4.2	4.1	3.9	3.8	3.8	3.8	4.1
Bankruptcy probability (%)	3.71	3.39	4.18	3.48	2.95	2.43	2.19	2.35	2.23	2.37	2.08	2.20	1.98	2.74
3) Vest-Agder, Aust-Agder, Vestfold ar	nd Østfold													
EASTERN NORWAY 4)	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	1989-2001
Low risk	15.6	15.0	14.8	14.6	13.0	11.1	10.4	9.6	8.4	9.0	9.9	9.4	10.2	11.6
Medium risk	16.6	15.9	15.8	15.7	13.8	12.0	11.3	10.4	9.2	9.8	10.6	10.3	10.9	12.5
High risk	17.3	16.7	16.7	16.4	14.7	12.8	12.4	11.6	10.6	11.0	11.7	11.5	11.8	13.5
Average overall	16.5	15.9	15.8	15.5	13.7	11.8	11.1	10.2	9.1	9.7	10.5	10.2	10.7	12.4

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

Financial institution balance sheets

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

	31.12.2000	31.12.2001	30.11.2002	31.12.2002	31.01.2003
FINANCIAL ASSETS					
Foreign assets	646 120	837 262	864 889	841 566	864 720
International reserves ^{1) 2)}	245 863	211 537	222 331	224 179	225 908
Investment of Government Petroleum Fund	386 126	613 317	633 019	608 475	629 691
Other foreign assets	14 131	12 408	9 539	8 912	9 121
Claims on Norwegian financial institutions	22 194	15 242	1 090	1 066	587
Loans to private banks	21 158	15 140	4	3	1
Other assets in the form of deposits,					
securities, loans and overdrafts	1 036	102	1 086	1 063	586
Claims on central government	13 909	11 813	11 645	13 234	14 438
Bearer bonds	10 743	9 073	8 935	10 750	10 530
Other securities	2 776	2 451	2 431	2 088	3 626
Other claims	390	289	279	396	282
Claims on other Norwegian sectors	1 306	1 327	1 301	1 868	1 782
Securities and loans	576	603	650	651	647
Other claims	730	724	651	1 217	1 135
Stock production units	26	27	24	22	22
	1.020	1 922	1 (04	1 575	1 520
Fixed assets	1 939	1 832	1 004	1 5/5	1 529
Valuation adjustments"	0	0	150 387	0	0
Expenses	0	0	14 988	0	3 763
Total assets	685 494	867 503	1 045 928	859 331	886 841
LIABILITIES AND CAPITAL					
Foreign liabilities	74 998	56 211	69 868	62 773	73 799
IMF debt in NOK	14 107	12 383	9 514	8 888	9 097
Other foreign liabilities	60 891	43 828	60 354	53 885	64 702
Notes and coins in circulation	46 952	46 633	40 783	44 955	41 157
Domestic deposits	505 837	719 980	743 987	720 367	732 749
Treasury	96 083	83 503	70 353	52 492	43 417
Government Petroleum Fund	386 126	613 317	633 019	608 475	629 691
Other public administration (excl.municipalities)	293	45	63	269	57
Private banks	21 647	21 614	39 369	57 626	58 199
Other financial institutions	1 591	1 406	1 113	1 427	1 311
Other Norwegian sectors	97	95	70	78	74
Accured interest to the Treasury	0	0	958	0	745
Other domestic debt	10 955	2 697	4 424	4 214	5 358
Calculated value of SDRs in the IMF	1 934	1 898	1 623	1 583	1 591
Capital	44 818	40 084	40 084	25 439	25 439
Valuation adjustments	0	0	0	0	2 173
Revenues ⁴⁾	0	0	144 201	0	3 830
	(97.404	9/7 502	1.045.020	050 221	007.041
Total habilities and capital	685 494	867 503	1 045 928	859 331	886 841
Off balance-sheet items:	<u> </u>		17.105	1.1.550	20.225
Foreign currency sold forward	32 595	11 541	16 135	14 550	32 327
Foreign currency purchased forward	25 699	13 311	17 194	15 806	34 118
Derivatives solu	///43	121 110	139 382	159 41 /	155 900
Allotted unpaid shares in the BIS	83 U94 211	145 597	109 900 201	106 005	155 0/9
rinotica, unpara shares ili ule Dis	514	524	324	510	510

¹⁾ International reserves include bonds subject to repurchase agreements

²⁾ Securities and gold are valued at fair value

³⁾ Valuation adjustments consist mainly of unrealised loss on securities

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

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

	31.12.2000	31.12.2001	30.11.2002	31.12.2002	31.01.2003
Gold	2 275	2 346	2 209	2 806	3 017
Special drawing rigths in the IMF	2 713	3 192	2 245	2 190	2 201
Reserve position in the IMF	5 166	6 533	6 659	6 886	6 758
Loans to the IMF	1 269	1 165	890	834	830
Bank deposits abroad	73 397	55 447	83 267	87 914	84 732
Foreign Treasury bills	-	-	395	567	535
Foreign certificates	-	-	-	-	-
Foreign bearer bonds ²⁾	157 893	117 275	109 021	104 573	109 934
Foreign shares	-	22 952	15 460	16 357	15 819
Accrued interest	3 190	2 628	2 184	2 053	2 082
Short-term assets	-40	-	-	-	-
Total	245 863	211 538	222 331	224 179	225 908

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

²⁾ Includes bonds subject to repurchase agreements

Source: Norges Bank

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

	31.12.2001	31.03.2002	30.06.2002	30.09.2002	31.12.2002
Cash holdings and bank deposits	2 889	2 456	2 254	2 439	2 803
Total loans	178 665	182 931	183 194	186 121	188 275
Of which:					
To the general public ¹⁾	176 538	180 654	180 934	183 852	185 932
Claims on the central government and					
social security administration	-	-	-	-	-
Other assets	8 365	10 132	9 000	7 914	6 217
Total assets	189 919	195 519	194 448	196 474	197 295
Bearer bond issues	45	44	39	38	34
Of which:					
In Norwegian kroner	45	44	39	38	34
In foreign currency	-	-	-	-	-
Other loans	177 806	182 622	182 964	185 776	187 482
Of which:					
From the central government and					
social security administration	177 806	182 622	182 964	185 776	187 482
Other liabilities, etc.	5 213	5 968	4 549	6 165	5 317
Share capital, reserves	6 855	6 885	6 896	4 495	4 462
Total liabilities and capital	189 919	195 519	194 448	196 474	197 295

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

Sources: Statistics Norway and Norges Bank

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

	31.12.2001	31.03.2002	30.06.2002	30.09.2002	31.12.2002
Cash	5 290	4 599	4 644	4 393	5 063
Deposits with Norges Bank	23 953	50 756	39 084	54 048	57 760
Deposits with commercial and savings banks	16 633	16 750	19 366	14 807	16 176
Deposits with foreign banks	42 096	48 820	43 561	21 194	29 596
Treasury bills	4 679	3 834	3 440	5 898	4 289
Other short-term paper	16 643	13 099	14 206	15 104	15 770
Government bonds etc. ¹⁾	4 698	5 740	5 174	8 644	3 222
Other bearer bonds	84 032	84 733	86 001	89 697	93 383
Loans to foreign countries	51 635	51 208	49 960	49 303	46 264
Loans to the general public	1 030 620	1 046 090	1 073 189	1 089 520	1 097 142
Of which:					
In foreign currency	87 459	88 531	84 160	85 118	81 765
Loans to mortgage and finance companies, insurance etc. ²⁾	79 554	84 110	87 059	94 208	96 485
Loans to central government and social security admin.	241	134	369	434	671
Other assets ³⁾	95 338	98 603	100 495	94 411	103 377
Total assets	1 455 412	1 508 476	1 526 548	1 541 661	1 569 198
Deposits from the general public	703 487	714 090	734 771	723 986	757 475
Of which:					
In foreign currency	25 887	22 759	21 553	21 387	20 129
Deposits from commercial and savings banks	22 565	25 938	22 498	18 503	19 449
Deposits from mortg. and fin. companies, and insurance etc. ²⁾	39 010	40 509	52 998	39 453	46 049
Deposits from central government, social security					
admin. and state lending institutions	8 511	8 204	8 696	7 729	8 611
Funds from CDs	78 651	67 251	72 744	75 165	78 559
Loans and deposits from Norges Bank	15 618	487	705	596	1 035
Loans and deposits from abroad	15 780	17 029	16 291	15 302	14 221
Other liabilities	463 254	531 053	511 700	553 760	538 406
Share capital/primary capital	25 322	25 328	25 839	28 106	28 157
Allocations, reserves etc.	72 341	75 719	75 688	73 242	72 410
Net income	10 873	2 868	4 618	5 819	4 826
Total liabilities and capital	1 455 412	1 508 476	1 526 548	1 541 661	1 569 198
Specifications:					
Foreign assets	137 217	146 581	151 662	118 426	125 338
Foreign debt	358 295	394 688	360 357	377 881	370 602

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

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

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

Sources: Statistics Norway and Norges Bank

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

	31.12.2001	31.03.2002	30.06.2002	30.09.2002	31.12.2002
Loans to:					
Local government (incl. municipal enterprises)	11 945	10 632	10 224	10 267	10 145
Non-financial enterprises ²⁾	358 856	365 993	369 751	366 660	359 725
Households ³⁾	659 819	669 465	693 213	712 593	727 272
Total loans to the general public	1 030 620	1 046 090	1 073 189	1 089 520	1 097 142
Deposits from:					
Local government (incl.municipal enterprises)	45 941	47 519	46 315	42 381	43 945
Non-financial enterprises ²⁾	219 475	207 452	207 857	212 912	225 424
Households ³⁾	438 071	459 119	480 599	468 693	488 105
Total deposits from the private sector and municipalities	703 487	714 090	734 771	723 986	757 475

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

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

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

Sources: Statistics Norway and Norges Bank

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

	31.12.2001	31.03.2002	30.06.2002	30.09.2002	31.12.2002
Cash and bank deposits	4 686	5 011	4 405	5 735	3 535
Notes and certificates	809	1 683	1 359	289	3 652
Government bonds ¹⁾	1 238	908	915	1 097	656
Other bearer bonds	41 337	51 023	58 931	54 788	49 829
Loans to:					
Financial enterprises	24 981	23 874	24 473	24 842	28 014
The general public ²⁾	167 547	163 948	165 692	168 551	181 998
Other sectors	11 656	11 106	11 796	10 229	9 907
Others assets ³⁾	-1 961	-1 980	-1 041	2 361	1 204
Total assets	250 293	255 573	266 530	267 892	278 795
Notes and certificates	23 489	31 607	34 145	33 295	30 111
Bearer bonds issues in NOK ⁴⁾	61 067	59 446	60 651	62 151	62 710
Bearer bond issues in foreign currency ⁴⁾	84 857	81 688	85 404	83 090	89 079
Other funding	65 527	67 331	70 832	73 542	80 022
Equity capital	11 436	11 705	11 881	12 134	11 963
Other liabilities	3 917	3 796	3 617	3 680	4 910
Total liabilities and capital	250 293	255 573	266 530	267 892	278 795

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

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

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

⁴⁾ Purchase of own bearer bonds deducted.

Sources: Statistics Norway and Norges Bank

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

	31.12.2001	31.03.2002	30.06.2002	30.09.2002	31.12.2002
Cash and bank deposits	2 227	2 011	1 847	1 481	1 822
Notes and certificates	109	105	104	114	97
Bearer bonds	20	20	0	0	0
Loans ¹⁾ (gross) to:	83 792	85 636	86 746	87 086	86 416
The general public $^{2)}$ (net)	79 618	81 537	83 101	83 675	83 222
Other sectors (net)	3 960	3 885	3 455	3 205	3 051
Other assets ³⁾	2 727	2 318	2 213	2 480	2 297
Total assets	88 875	90 090	90 910	91 161	90 632
Notes and certificates	575	550	675	600	600
Bearer bonds	115	115	115	65	65
Loans from non-banks	10 530	10 010	10 108	10 287	10 685
Loans from banks	61 246	65 321	63 721	63 537	62 945
Other liabilities	9 197	6 649	8 300	8 541	7 969
Capital, reserves	7 212	7 445	7 991	8 131	8 368
Total liabilities and capital	88 875	90 090	90 910	91 161	90 632

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)

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

30.09.2001	31.12.2001	31.03.2002	30.06.2002	30.09.2002
11 167	13 467	16 315	28 127	14 956
27 871	29 699	31 834	33 710	33 146
933	1 189	3 002	2 327	7 735
100 305	101 819	106 898	110 790	112 449
83 383	83 147	79 495	82 924	105 789
45 431	48 478	44 841	35 957	32 295
48 557	56 271	62 451	47 614	33 189
24 360	24 482	23 013	23 173	23 200
1 012	935	739	697	681
53 959	53 214	54 071	53 956	56 971
396 978	412 701	422 659	419 275	420 411
	30.09.2001 11 167 27 871 933 100 305 83 383 45 431 48 557 24 360 1 012 53 959 396 978	30.09.2001 31.12.2001 11 167 13 467 27 871 29 699 933 1 189 100 305 101 819 83 383 83 147 45 431 48 478 48 557 56 271 24 360 24 482 1 012 935 53 959 53 214 396 978 412 701	30.09.200131.12.200131.03.200211 16713 46716 31527 87129 69931 8349331 1893 002100 305101 819106 89883 38383 14779 49545 43148 47844 84148 55756 27162 45124 36024 48223 0131 01293573953 95953 21454 071396 978412 701422 659	30.09.200131.12.200131.03.200230.06.200211 16713 46716 31528 12727 87129 69931 83433 7109331 1893 0022 327100 305101 819106 898110 79083 38383 14779 49582 92445 43148 47844 84135 95748 55756 27162 45147 61424 36024 48223 01323 1731 01293573969753 95953 21454 07153 956396 978412 701422 659419 275

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

Source: Statistics Norway

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

	30.09.2001	31.12.2001	31.03.2002	30.06.2002	30.09.2002
Cash and bank deposits	5 767	6 454	7 454	7 539	7 285
Norwegian notes and certificates	4 492	3 631	5 057	5 647	6 055
Foreign notes and certificates	92	249	372	405	862
Norwegian bearer bonds	12 854	13 111	13 470	16 308	15 730
Foreign bearer bonds	12 851	13 005	13 228	13 706	14 582
Norwegian shares, units, primary capital certificates, interests	10 269	10 807	9 933	8 152	7 307
Foreign shares, units, primary capital certificates, interests	10 428	11 677	11 148	7 632	7 720
Loans to the general public $^{1)}$	1 242	934	854	826	899
Loans to other sectors	90	148	144	141	114
Other specified sectors	35 997	40 452	45 485	42 209	41 499
Total assets	94 082	100 468	107 145	102 565	102 053

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

Source: Statistics Norway

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

	30.09.2001	31.12.2001	31.03.2002	30.06.2002	30.09.2002
Bank deposits	4 412	3 734	4 171	4 769	3 566
Treasury bills, etc. ¹⁾	1 661	717	957	1 184	1 525
Other Norwegian short-term paper	19 768	20 104	19 014	19 440	21 541
Foreign short-term paper	194	242	0	0	0
Government bonds, etc. ²⁾	3 077	4 163	4 322	3 949	4 144
Other Norwegian bonds	24 920	25 093	24 679	25 014	24 730
Foreign bonds	1 807	2 193	0	0	0
Norwegian equities	28 087	31 106	32 948	26 795	19 327
Foreign equities	38 200	43 401	47 943	38 969	31 188
Other assets	2 159	2 320	2 313	2 130	1 698
Total assets	124 284	133 073	136 346	122,250	107 721

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

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

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

	30.09.2001	31.12.2001	31.03.2002	30.06.2002	30.09.2002
Central government and social security administration	342	275	354	379	414
Commercial and savings banks	3650	3918	3358	3442	2672
Other financial corporations	15529	19184	15770	12762	10623
Local government admin. and municipal enterprises	6953	7893	7860	8106	7953
Other enterprises	22431	25240	23859	21840	20742
Households	71368	72605	80392	71165	61212
Rest of the world	2723	2741	3536	3340	2889
Total assets under management	122 996	131 856	135 129	121 034	106 505

Sources: Norges Bank and the Norwegian Central Securities Depository

Securities statistics

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

Holding sector	30/09/2001	31/12/2001	31/03/2002	30/06/2002	30/09/2002
Central government and social security admin.	223,630	249,604	271,787	238,711	198,032
Norges Bank	0	0	0	0	0
State lending institutions	10	4	4	4	3
Savings banks	3,152	3,232	3,393	3,065	2,930
Commercial banks	8,979	9,283	13,983	10,852	6,976
Insurance companies	32,562	36,556	37,338	26,253	21,378
Mortgage companies	162	174	201	81	67
Finance companies	4	4	5	4	3
Mutual funds	30,713	34,477	36,460	29,221	20,820
Other financial enterprises	30,210	32,059	31,512	30,829	38,781
Local government admin. and municipal enterprises	2,452	2,755	5,528	5,252	3,746
State enterprises	7,371	9,412	10,226	8,608	7,705
Other private enterprises	172,690	143,658	163,783	141,432	128,089
Wage-earning households	52,235	50,497	54,208	45,330	39,778
Other households	3,412	2,678	2,765	2,354	1,862
Rest of the world	248,369	242,456	278,695	247,474	198,284
Unspecified sector	1,762	1,925	1,865	949	1,011
Total	817,716	818,774	911,755	790,420	669,464

Sources: Norwegian Central Securities Depository and Norges Bank

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

	30.09.2001	31.12.2001	31.03.2002	30.06.2002	30.09.2002
Savings banks	8 991	9 126	9 126	9 126	11 280
Commercial banks	15 702	15 712	15 712	15 724	15 725
Insurance companies	1 123	1 124	1 124	1 124	2 758
Mortgage companies	2 194	2 194	2 194	2 194	2 194
Finance companies	64	5	5	5	5
Other financial enterprises	12 156	11 389	11 411	11 097	19 806
Local government administration and municipal enterprises	2	2	2	2	2
State enterprises	18 421	18 425	18 425	18 508	18 463
Other private enterprises	47 019	46 027	45 105	45 265	45 019
Rest of the world	7 023	7 194	6 884	5 571	5 677
Unspecified sector	0	0	0	0	0
Total	112 695	111 198	109 987	108 618	120 929

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

2002 Q3	Purchasing/s										y/ selling sector							
	Cent.gov't									Local				Wage-		Rest		
	and		State			Insur.	Mort.	Fin.		Other	gov't &		Other	earning	Other	of		
	social	Norges	lending	Sav.	Comm.	com-	com-	com-	Secur.	financ.	munic.	State	private	house-	house-	the	Unsp.	
Issuing sector	security	Bank	inst.	banks	banks	panies	panies	panies	funds	enterpr.	enterpr.	enterpr.	enterpr.	holds	holds	world	sector	Total ²⁾
Comm. banks	1	0	0	-142	63	-36	1	0	-52	-84	59	19	-17	62	3	141	1	19
Insurance companies	0	0	0	0	4	9	0	0	9	-15	0	0	15	16	0	-1	4	43
Mortgage companies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finance companies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other financial enterpr.	294	0	0	276	503	2 915	-7	1	895	162	64	-160	6 061	2 188	182	7 626	99	21 098
Local gov't. admin. and																		
municipal enterpr.	0	0	0	0	0	0	0	0	0	0	1	0	0	-1	0	0	0	0
State enterprises	263	0	0	-7	435	-817	-2	0	-705	-2	-1	-52	-40	113	17	869	13	85
Other private enterpr.	1 247	0	-6	1 364	6 649	-6 155	19	0	-487	-3 136	2 662	15	6 464	-1 222	-10	4 797	153	12 354
Rest of the world	159	0	0	15	6 882	-1 390	-3	0	-454	-1 312	-8	-22	-1 791	-36	15	-2 133	12	-65
Unspecified sector	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1 964	0	-6	1 506	14 537	-5 475	9	1	-794	-4 387	2 778	-201	10 692	1 121	207	11 299	281	33 534

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

	30.09.2001	31.12.2001	31.03.2002	30.06.2002	30.09.2002
Central government and social security administration	28 004	27 682	26 484	26 865	26 175
Norges Bank	6 986	6 531	5 610	7 030	6710
State lending institutions	232	219	209	193	183
Savings banks	25 114	26 733	28 357	30 617	35 112
Commercial banks	39 768	35 598	38 549	39 727	42 225
Insurance companies	154 734	160 077	163 016	168 546	170 384
Mortgage companies	13 415	12 880	13 159	13 671	15 575
Finance companies	33	23	27	30	27
Mutual funds	28 517	29 428	29 602	29 653	29 554
Other financial enterprises	1 685	3 353	3 534	4 198	3 706
Local government administration and municipal enterprises	10 642	10 694	14 215	15 819	18 640
State enterprises	3 457	3 166	4 105	2 317	2 600
Other private enterprises	21 966	24 049	23 329	23 191	22 624
Wage-earning households	13 286	14 972	15 841	16 390	16 470
Other households	4 651	4 882	4 814	5 082	5 154
Rest of the world	60 872	61 131	57 974	59 773	66 338
Unspecified sector	825	948	973	689	708
Total	414 185	422 367	429 799	443 790	462 187

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

	30.09.2001	31.12.2001	31.03.2002	30.06.2002	30.09.2002
Central government and social security administration	127 776	129 762	132 785	139 771	141 793
State lending institutions	284	263	252	231	220
Savings banks	58 484	60 263	64 969	71 795	75 289
Commercial banks	61 675	58 601	63 694	64 116	67 557
Insurance companies	994	994	990	915	915
Mortgage companies	66 510	66 988	66 187	67 012	69 988
Finance companies	50	50	550	550	500
Other financial enterprises	2 300	2 300	2 300	2 300	2 300
Local government administration and municipal enterprises	47 198	46 466	44 411	43 590	44 402
State enterprises	12 685	14 854	14 398	14 688	15 621
Other private enterprises	32 908	35 488	36 716	38 186	37 020
Households	27	23	23	23	23
Rest of the world	8 086	9 698	10 191	10 001	11 721
Unspecified sector	0	0	0	0	0
Total	418 977	425 750	437 466	453 178	467 349

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⁾ Market value. In millions of NOK

2002 Q3 Issuing sector	Purchasing/ selling sector																	
	Cent.gov't and social security	Norges Bank	State lending inst.	Sav. banks	Comm. banks	Insur. com- panies	Mort. com- panies	Fin. com- panies	Secur. funds	Other financ. enterpr.	Local gov't & munic. enterpr.	State enterpr.	Other private enterpr.	Wage- earning house- holds	Other house- holds	Rest of the world	Unsp. sector	Total ²⁾
Central government and social security																		
admin.	-2,020	95	0	3,033	2,050	3,057	-148	-6	181	-66	326	320	430	161	-34	4,660	13	12,054
State lending inst.	0	0	-36	-4	-2	-1	0	0	0	0	0	0	0	0	0	0	0	-43
Savings banks Commercial	141	0	0	3,410	2,234	3,231	1,047	0	1,669	82	1,720	83	404	322	170	1,229	3	15,747
banks	454	0	0	704	1,680	4,180	-293	10	-409	111	302	-42	-207	1,702	-170	868	62	8,953
Insur. companies	0	0	0	0	5	-65	0	0	-33	0	0	0	-10	0	-14	45	-1	-72
Mortgage companies	41	0	0	-15	1,206	1,047	2,308	-2	34	-16	978	-139	-1,094	-88	-59	-1,205	2	2,999
Finance companies Other financial	0	0	0	320	0	85	0	0	-25	0	26	0	31	10	3	0	0	450
enterprises Local gov't. admin. and municipal	0	0	0	-10	104	-69	0	0	-16	0	-14	0	5	0	10	-10	0	0
enterprises	-204	0	0	269	-898	-910	91	2	-146	-24	1,725	-91	-245	-5	34	-675	-1	-1,077
State enterprises Other	392	0	0	295	246	134	2	0	-99	-38	480	-579	-38	14	71	-114	0	766
private enterprises	158	0	0	1,802	-268	-458	-19	0	30,955	391	2,401	-81	-32,994	-101	290	-431	-12	1,635
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	-89	-140	1,030	15	0	99	-5	18	0	-2	19	-4	1,079	2	2,023
Unspecified sector	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	-1.037	95	-36	9,715	6.218	11.261	3.005	4	32.210	437	7,962	-528	-33.720	2.035	299	5,446	68	43,434

 $^{1)}$ 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.

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

	30/09/2001	31/12/2001	31/03/2002	30/06/2002	30/09/2002
Central government and social security administration	7,889	5,680	6,444	5,845	6,635
Norges Bank	2,478	2,451	3,053	2,219	2,590
State lending institutions	0	0	0	0	0
Savings banks	6,847	4,088	3,529	3,435	3,846
Commercial banks	21,024	17,629	13,633	13,546	16,610
Insurance companies	36,746	38,829	42,046	44,160	45,333
Mortgage companies	1,128	454	173	2,569	1,682
Finance companies	73	61	58	48	61
Mutual funds	22,169	20,690	21,180	22,577	25,183
Other financial enterprises	1,214	2,025	2,656	1,900	2,196
Local government administration					
and municipal enterprises	4,360	3,244	4,022	8,918	7,352
State enterprises	6,381	4,006	10,944	4,784	6,078
Other private enterprises	10,734	7,225	6,762	6,442	6,877
Wage-earning households	363	180	121	191	232
Other households	521	1,354	1,245	1,331	1,137
Rest of the world	10,947	9,995	13,394	11,846	12,457
Unspecified sector	429	488	48	8	7
Total	133,303	118,398	129,308	129,819	138,277

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	31.12.2001	31.03.2002	30.06.2002	30.09.2002	31.12.2002
Central government and social security administration	36 000	36 500	33 000	41 500	51 500
Counties	2 172	1 163	1 076	1 026	474
Municipalities	3 208	3 280	3 722	3 140	4 285
State lending institutions	0	0	0	0	0
Commercial banks	13 466	21 937	21 744	18 867	18 434
Savings banks	37 965	34 421	36 311	39 616	40 538
Mortgage companies	5 525	4 380	3 572	3 497	1 787
Finance companies	575	550	625	600	600
Other financial enterprises	0	0	0	0	0
State enterprises	2 780	4 530	8 205	10 227	4 870
Municipal enterprises	9 974	11 194	10 439	9 822	8 976
Private enterprises	7 538	11 690	13 723	12 061	9 547
Rest of the world	1 885	2 400	1 225	1 700	2 500
Total	121 088	132 045	133 642	142 056	143 511

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

Credit and liquidity trends Table 19. Credit indicator and money supply

				Percentage growth						
	Volume	e figures at end	of period				Over past 3	8 months		
		NOKbn		Ove	r past 12 mor	iths	Annualised rate ⁴⁾			
	C2 ¹⁾	C3 ²⁾	M2 ³⁾	C2 ¹⁾	C3 ²⁾	M2 ³⁾	C2	M2		
December 1993	877.7	1 074.1	476.0	-1.8	-1.7	-1.1	0.0	0.3		
December 1994	893.5	1 075.8	501.3	2.3	1.3	5.8	2.8	1.3		
December 1995	936.0	1 123.6	530.3	4.9	5.2	6.0	5.4	1.3		
December 1996	992.7	1 213.6	564.4	6.0	5.3	6.4	7.7	4.5		
December 1997	1 099.4	1 361.1	578.5	10.2	10.2	1.8	10.0	3.0		
December 1998	1 193.3	1 519.7	605.3	8.3	12.3	4.4	6.4	5.4		
December 1999	1 295.3	1 695.0	670.1	8.3	8.0	10.5	9.5	8.4		
December 2000	1 461.7	1 917.0	731.8	12.4	10.8	8.8	11.8	7.4		
October 2001	1 584.2	2 038.8	781.7	10.2	6.3	9.1	9.8	7.8		
November 2001	1 602.2	2 068.6	773.9	9.7	7.2	8.4	9.1	8.1		
December 2001	1 610.1	2 071.8	795.2	9.7	8.0	9.3	8.7	10.9		
January 2002	1 616.4	2 079.9	821.0	9.4	8.2	10.1	8.3	11.0		
February 2002	1 623.3	2 082.9	812.4	8.9	8.0	8.1	8.0	10.9		
March 2002	1 633.6	2 094.4	812.9	8.8	8.2	8.8	8.1	5.6		
April 2002	1 649.1	2 112.5	800.1	9.0	8.1	8.7	8.8	4.7		
May 2002	1 657.9	2 105.1	805.7	9.3	7.6	7.3	10.3	5.5		
June 2002	1 671.5	2 106.6	844.5	9.6	7.8	9.8	10.8	8.5		
July 2002	1 678.0	2 114.5	837.1	9.4	7.9	9.0	10.6	8.9		
August 2002	1 685.3	2 116.5	826.4	9.1	8.2	7.6	8.9	4.0		
September 2002	1 694.2	2 119.1	820.7	8.7	8.1	6.3	7.8	3.2		
October 2002	1 704.5	2 135.9	844.7	8.6	7.4	8.6	7.4	3.5		
November 2002	1 725.9	2 152.2	828.6	8.9	7.0	7.7	8.2	9.9		
December 2002	1 726.6		854.6	8.9		8.2	9.2	9.4		
January 2003	1 736.2		865.9	9.1		6.2				

 $^{1)}$ C2 = Credit indicator. Credit from domestic sources; actual figures.

 $^{2)}$ C3 = Total credit from domestic and foreign sources; actual figures.

³⁾ M2 = Money supply.

4) Seasonally adjusted figures

Source: Norges Bank

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

	31.12.2	000	31.12.2001		31.12.2002		31.01.20	003
	Amount	%	Amount	%	Amount	%	Amount	%
Private banks	938 076	13.8	1 030 694	9.6	1 097 160	8.2	1 102 730	8.4
State lending institutions	167 921	3.9	176 494	5.1	185 932	5.3	187 422	4.6
Norges Bank	575	1.6	603	4.9	651	8.0	651	7.8
Mortgage companies	144 846	20.4	167 698	15.6	181 999	10.9	182 826	13.1
Finance companies	66 809	12.1	79 474	14.6	83 222	9.9	83 232	10.1
Life insurance companies	23 047	-8.0	24 482	0.2	23 124	-5.5	23 120	-3.6
Pension funds	4 796	-3.9	3 742	7.1	3 742	0.0	3 742	0.0
Non-life insurance companies	1 649	24.8	934	-43.4	918	-1.7	920	1.1
Bond debt ²⁾	82 838	9.7	89 671	8.2	107 399	19.8	109 282	22.6
Notes and short-term paper	25 059	29.6	25 672	2.4	28 152	9.7	27 639	-5.7
Other sources	6 038	27.4	10 624	76.0	14 295	34.6	14 672	33.8
Total domestic credit $(C2)^{3}$	1 461 654	12.4	1 610 088	9.7	1 726 594	8.9	1 736 236	9.1

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

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

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

Actual figures	Notes	Transaction					Change
at end of	and	account		Other			last 12
period	coins	deposits	M1 ¹⁾	deposits ²⁾	CDs	M2 ³⁾	months
December 1993	38 003	149 615	185 359	288 396	2 260	476 015	-3 205
December 1994	40 454	172 154	210 108	286 081	5 116	501 305	25 290
December 1995	42 069	178 653	217 727	296 799	15 731	530 257	28 952
December 1996	43 324	208 072	247 937	294 741	21 686	564 364	34 107
December 1997	46 014	227 382	269 597	278 741	30 200	578 538	14 174
December 1998	46 070	237 046	279 188	292 820	33 321	605 329	26 791
December 1999	48 020	300 131	343 496	295 822	30 803	670 121	64 792
December 2000	46 952	328 816	371 340	326 351	34 152	731 843	61 722
October 2001	40 969	331 294	368 173	376 933	36 572	781 678	60 4 30
November 2001	42 084	327 191	365 086	374 039	34 819	773 944	55 292
December 2001	46 633	344 109	386 147	370 172	38 899	795 218	63 375
January 2002	42 613	350 854	389 293	393 988	37 746	821 027	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	384 961	43 124	812 874	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	381 452	46 540	844 486	68 794
July 2002	40 945	365 142	401 902	389 106	46 078	837 086	63 619
August 2002	40 649	349 274	385 825	394 607	45 931	826 363	54 280
September 2002	40 188	350 270	386 502	388 380	45 822	820 704	44 864
October 2002	40 024	358 125	394 210	404 467	45 998	844 675	62 994
November 2002	40 783	349 028	385 824	398 525	44 291	828 640	54 693
December 2002	44 831	360 553	400 711	409 355	44 576	854 642	59 424
January 2003	41 155	360 546	397 824	426 302	41 813	865 939	44 989

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 and CDs (in NOK and foreign currency) excluding restricted bank deposits (BSU, IPA, withholding tax accounts, etc).

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

		Financ	ial inve	estments		Holdings				
	Year			Q	3		Year) sept.
	1999	2000	2001	2001	2002	1999	2000	2001	2001	2002
Bank deposits, etc. ¹⁾	33.4	33.0	38.9	-7.7	-13.0	407.5	440.6	479.5	466.1	504.1
Bonds, etc. ²⁾	2.2	7.8	6.7	1.4	0.1	10.9	18.2	21.5	19.0	23.1
Shares, etc. ³⁾	2.6	4.5	6.8	1.2	1.9	166.6	174.7	173.0	166.7	164.0
Units in securities funds	7.0	11.7	2.3	0.4	-1.2	77.9	85.7	78.1	77.6	66.6
Insurance claims	20.6	23.0	32.9	5.7	14.8	428.0	455.1	471.7	464.3	489.9
Loans and other assets ⁴⁾	5.4	7.0	7.3	3.4	3.0	100.9	107.9	115.2	115.1	120.8
Total assets	71.2	87.1	94.9	4.3	5.5	1191.9	1282.1	1339.1	1308.7	1368.6
Loans from commercial and savings banks	49.9	66.5	67.9	17.0	19.6	525.3	591.9	659.8	639.8	712.6
Loans from state lending inst. and Norges Bank Loans from private mortgage and finance	6.0	7.7	8.5	1.4	2.6	134.3	141.4	149.1	148.0	155.5
companies	0.4	6.2	14.2	4.2	2.7	47.1	53.5	67.7	64.1	76.1
Loans from insurance companies	-3.9	-2.5	-0.5	-0.2	0.2	19.2	16.7	16.2	16.1	16.4
Other liabilities ⁵⁾	4.6	-1.4	8.3	-5.2	-8.0	81.1	79.3	87.0	78.8	78.7
Total liabilities	57.2	76.5	98.3	17.2	17.1	807.1	882.9	979.9	946.9	1039.3
Net	14.0	10.5	-3.3	-12.8	-11.6	384.8	399.2	359.2	361.8	329.3

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 - 28.2		
Supply+/withdrawal-	2001	2002	2002	2003	
Central gov't. and other public accounts					
(excl. paper issued by state lending inst. and gov't.)	-115 094	5 950	38 965	22 291	
Paper issued by state lending inst. and govt.	8 514	-13 598	-10 913	-26 709	
Purchase of foreign exchange for Gov't Petroleum Fund	120 300	56 545	7 200	6 000	
Other foreign exchange transactions	91	421	0	0	
Holdings of banknotes and coins ¹ (estimate)	424	1 741	5 136	4 697	
Overnight loans	-126	0	22	0	
Fixed-rate loans	-6 011	-15 140	-15 140	0	
Other central bank financing	-8 135	-18 700	-33 241	-26 303	
Total reserves	-37	17 219	-7 971	-20 024	
Of which:					
Sight deposits with Norges Bank	-37	17 219	-7 971	-20 024	
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.

Interest rate statistics

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

							Interest rate on	Interest rate on
							banks' overnight	banks' sight
	1-m	onth	3-m	onth	12-n	nonth	loans in	deposits with
	NIDR	NIBOR	NIDR	NIBOR	NIDR	NIBOR	Norges Bank	Norges Bank
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
September 2002	7.3	7.1	7.3	7.1	7.2	7.0	9.0	7.0
October 2002	7.3	7.1	7.3	7.1	7.0	6.8	9.0	7.0
November 2002	7.3	7.1	7.3	7.1	6.9	6.7	9.0	7.0
December 2002	7.1	6.9	6.8	6.6	6.4	6.1	8.7	6.7
January 2003	6.4	6.2	6.2	6.0	5.9	5.6	8.3	6.3
February 2003	6.1	5.9	5.9	5.7	5.5	5.3	8.0	6.0

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

							Interest rate differential
	DKK	GBP	JPY	SEK	USD	EUR	NOK/EUR
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
September 2002	3.4	3.9	0.0	4.3	1.8	3.3	3.8
October 2002	3.4	3.9	0.0	4.3	1.7	3.2	3.8
November 2002	3.2	3.9	0.0	4.1	1.4	3.1	3.9
December 2002	3.0	4.0	0.0	3.8	1.4	2.9	3.5
January 2003	2.9	3.9	0.0	3.8	1.3	2.8	3.1
February 2003	2.8	3.7	0.0	3.7	1.3	2.7	2.9

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

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-ye	ar	10-year	
	Gov't	Private	Gov't	Private	Gov't	Private
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
September 2002	6.2	6.7	6.1	6.6	6.1	6.6
October 2002	6.1	6.7	6.1	6.6	6.2	6.7
November 2002	6.0	6.6	6.0	6.5	6.1	6.6
December 2002	5.6	6.3	5.7	6.3	5.9	6.4
January 2003	5.3	5.9	5.4	6.0	5.7	6.1
February 2003	4.9	5.4	5.0	5.5	5.3	5.6

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

Source: Norges Bank

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

									Interest rate differential
	DEM	DKK	FIM	FFR	GBP	JPY	SEK	USD	NOK/DEM ²⁾
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
September 2002	4.5	4.8	4.7	4.5	4.5	1.2		3.9	1.6
October 2002	4.6	4.9	4.7	4.6	4.6	1.1		3.9	1.6
November 2002	4.6	4.9	4.7	4.6	4.6	1.0		4.1	1.6
December 2002	4.4	4.7	4.5	4.4	4.5	1.0		4.1	1.5
January 2003	4.2	4.5	4.3	4.2	4.4	0.8		4.1	1.4
February 2003	4.0	4.3	4.1	4.0	4.2	0.8		3.9	1.3

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

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

Sources: OECD and Norges Bank

	Loans, excl. non-accrual loans										
-		Logal	Non- financial	Non- financial	_	Credit lines	Repayment	loans			
	Total loans	govern- ment	enter- prises	enter- prises	House- holds	Overdrafts and building loans	Housing loans	Other loans			
2001 Q4											
Commercial banks	8.46	7.85	7.90	8.59	8.40	10.31	8.27	8.20			
Savings banks	8.91	7.23	9.13	9.13	8.85	11.18	8.56	9.06			
All banks	8.69	7.54	8.23	8.80	8.66	10.69	8.43	8.58			
2002 Q1											
Commercial banks	8.11	7.50	7.99	8.28	8.01	9.83	7.88	7.89			
Savings banks	8.51	7.13	7.76	8.89	8.41	10.88	8.12	8.75			
All banks	8.31	7.30	7.93	8.52	8.24	10.28	8.01	8.27			
2002 Q2											
Commercial banks	8.15	7.90	7.97	8.40	7.99	9.73	7.86	8.06			
Savings banks	8.51	7.34	7.72	8.97	8.38	10.80	8.11	8.80			
All banks	8.33	7.63	7.91	8.62	8.21	10.18	8.01	8.39			
2002 Q3											
Commercial banks	8.59	7.79	8.03	8.82	8.47	10.53	8.32	8.38			
Savings banks	8.98	7.60	8.12	9.33	8.89	11.34	8.60	9.22			
All banks	8.79	7.70	8.05	9.02	8.71	10.87	8.48	8.75			
2002 Q4											
Commercial banks	8.49	7.60	7.73	8.57	8.47	10.39	8.34	8.19			
Savings banks	8.91	7.49	7.85	9.16	8.85	11.16	8.58	9.11			
All banks	8.71	7.55	7.76	8.80	8.69	10.73	8.48	8.59			

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

Source: Norges Bank

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

			Non-				
		Local	financial	Non-financial		Deposits on	
	Total	govern-	public	private	House-	transaction	Other
	deposits	ment	enterprises	enterprises	holds	accounts	deposits
2001 Q4							
Commercial banks	5.76	6.36	6.37	5.80	5.66	5.10	6.45
Savings banks	5.72	6.47	6.65	5.74	5.62	4.51	6.42
All banks	5.74	6.43	6.46	5.78	5.64	4.85	6.43
2002 Q1							
Commercial banks	5.38	6.06	5.96	5.52	5.22	4.72	6.07
Savings banks	5.41	6.47	6.41	5.62	5.22	4.26	6.09
All banks	5.40	6.33	6.12	5.55	5.22	4.53	6.08
2002 Q2							
Commercial banks	5.27	6.07	6.25	5.43	5.05	4.62	6.05
Savings banks	5.32	6.70	6.78	5.70	5.06	4.09	6.09
All banks	5.29	6.45	6.42	5.53	5.06	4.40	6.08
2002 Q3							
Commercial banks	5.67	6.00	6.51	5.78	5.53	5.00	6.41
Savings banks	5.83	6.91	6.78	6.06	5.66	4.57	6.54
All banks	5.75	6.56	6.60	5.88	5.60	4.83	6.49
2002 Q4							
Commercial banks	5.60	5.79	5.99	5.53	5.61	4.91	6.37
Savings banks	5.85	6.60	6.53	5.89	5.75	4.56	6.53
All banks	5.73	6.30	6.22	5.66	5.69	4.77	6.46

	Housing loans	Other loans	Total loans
2001 04	7.8	69	7.4
2002 Q1	7.7	6.8	7.3
Q2	7.9	7.1	7.5
Q3	8.0	7.1	7.5
Q4	7.8	7.0	7.3

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

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

		Loans to	
	Housing	private	Total
	loans	enterprises	loans
2001 Q4	7.4	7.5	7.3
2002 Q1	7.4	7.5	7.1
Q2	7.5	7.6	7.2
Q3	7.8	7.8	7.4
Q4	7.8	7.7	7.3

Source: Norges Bank

Profit/loss and capital adequacy data

Table 32. Profit/loss and capital adequacy: commercial banks¹⁾.

Percentage of average total assets

	2000	2001	2002
Interest income	7.4	7.6	7.3
Interest expenses	5.5	5.8	5.5
Net interest income	1.8	1.8	1.9
Total other operating income	1.3	1.1	0.8
Other operating expenses	1.9	1.9	1.8
Operating profit before losses	1.2	1.0	0.9
Recorded losses on loans and guarantees	0.1	0.3	0.5
Ordinary operating profit before taxes	1.1	0.7	0.4
Capital adequacy ratio ²⁾	11.0	11.7	11.3
Of which: Core capital	7.8	8.7	8.6

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

 $^{2)}\ As$ a percentage of the basis of measurement for capital adequacy.

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

	2000	2001	2002
	2000	2001	2002
Interest income	7.6	8.1	7.8
Interest expenses	4.9	5.6	5.3
Net interest income	2.7	2.5	2.5
Total other operating income	0.8	0.7	0.5
Other operating expenses	2.0	1.8	1.8
Operating profit before losses	1.6	1.4	1.2
Recorded losses on loans and guarantees	0.2	0.3	0.4
Ordinary operating profit before taxes	1.8	1.2	0.8
Capital adequacy ratio ¹⁾	13.7	13.8	13.5
Of which:			
Core capital	10.9	11.0	11.1

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

Source: Norges Bank

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

	2000	2001	2002
Interest income	10.6	10.3	9.6
Interest expenses	5.6	6.0	5.6
Net interest income	5.0	4.2	4.0
Total other operating income	2.3	2.8	2.5
Other operating expenses	4.7	4.4	4.1
Operating profit before losses	2.5	2.6	2.5
Recorded losses on loans and guarantees	0.5	0.5	0.6
Ordinary operating profit before taxes	2.1	2.1	1.9
Capital adequacy ratio ²⁾	12.4	11.3	10.8
Of which:			
Core capital	11.1	9.8	9.2

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

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

Source: Norges Bank

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

	2000 ³⁾	2001	2002
Interest income	6.9	6.5	5.3
Interest expenses	6.2	5.7	4.7
Net interest income	0.7	0.8	0.7
Total other operating income	0.0	-0,0	-0,0
Other operating expenses	0.2	0.2	0.2
Operating profit before losses	0.6	0.6	0.5
Recorded losses on loans and guarantees	-0,0	0.0	0.0
Ordinary operating profit before taxes	0.6	0.6	0.5
Capital adequacy ²⁾	16.6	14.7	12.6
Of which:			
Core capital	13.0	11.2	10.3

¹⁾ All Norwegian parent companies.

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

³⁾ Kommunalbanken reports as a mortgage company with effect from the first quarter of 2000.

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	1	100	100	100	100	1	100	100	1
	exchange rate ¹⁾	EUR	DEM	DKK	FIM	FRF	GBP	JPY	SEK	USD
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	94.60	7.4050		99.66			11.60	6.32	79.90	7.46
August 2002	95.09	7.4284		100.02			11.67	6.39	80.32	7.60
September 2002	94.38	7.3619		99.12			11.67	6.22	80.30	7.51
October 2002	94.06	7.3405		98.80			11.65	6.04	80.62	7.48
November 2002	93.58	7.3190		98.53			11.49	6.02	80.59	7.31
December 2002	92.91	7.2953		98.24			11.36	5.87	80.20	7.17
January 2003	92.52	7.3328		98.66			11.16	5.81	79.93	6.90
February 2003	94.75	7.5439		101.51			11.26	5.87	82.49	7.00

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

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

Source: Norges Bank

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

	DEM/USD ¹⁾	DEM/GBP ¹⁾	USD/EUR	JPY/DEM ¹⁾	JPY/USD
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			0.992		118.04
August 2002			0.978		118.95
September 2002			0.981		120.68
October 2002			0.981		123.91
November 2002			1.001		121.49
December 2002			1.018		122.01
January 2003			1.062		118.74
February 2003			1.077		119.35

¹⁾Converted via the euro on the basis of the rate at 31.12.1998. This conversion was discontinued as at 28.02.2002.

Balance of payments

Table 38. Balance of payments. In millions of NOK

		2000	2001	2002
Goods balance	2	229 595	231 532	203 460
Service balance	ce	16 917	25 475	20 260
Net interest an	nd transfers	-26 864	-23 621	-14 125
A. Current acc	count balance	219 648	233 386	209 595
	Of which:			
	Petroleum activities ¹⁾	303 153	304 574	481 850
	Shipping ¹⁾	25 609	44 885	35 844
	Other sectors	-109 114	-116 073	-308 099
B. Net capital	transfers	-1 683	-840	-462
C. Capital out	flow excl. Norges Bank	52 273	-24 174	66 436
	Distributed among:			
	Central government sector	-19 294	14 502	4 538
	Local government sector	341	237	719
	Commercial and savings banks	-43 033	-33 132	-74 737
	Insurance	19 744	9 540	42 208
	Other financial institutions	-12 261	-13 263	-38 529
	Shipping	-8 592	-768	2 684
	Petroleum activities	24 018	-42 379	-30 246
	Other private and state enterprises	22 447	5 000	30 714
	Unallocated (incl. errors and omissions)	68 903	36 089	129 085
D. Norges Bar	nk's net capital outflow (A + B - C)	165 692	256 720	142 697
E. Valuation c	hanges in Norges Bank's net foreign assets	17 030	-41 057	-131 634
Change in Nor	rges Bank's net foreign assets (D + E)	182 722	215 663	11 063

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		3	1.12.2001		3	1.12.2002	
	Assets	Debt	Net	Assets	Debt	Net	Assets	Debt	Net
Central government admin.	20.0	75.7	-55.7	28.3	61.3	-33.0	29.5	57.1	-27.6
Norges Bank incl. Petroleum Fund	767.6	199.7	567.9	959.5	176.8	782.7	1 073.7	279.6	794.1
State lending institutions	6.5	0.0	6.5	7.5	0.0	7.5	7.5	0.0	7.5
Commercial and savings banks	136.6	331.3	-194.7	137.7	360.1	-222.4	126.8	375.1	-248.3
Mortgage companies	35.5	103.0	-67.5	45.6	127.1	-81.5	49.0	145.7	-96.7
Finance companies	3.0	19.1	-16.1	3.7	30.1	-26.4	3.7	31.7	-28.0
Insurance companies	210.8	17.3	193.5	204.9	19.1	185.8	247.2	19.5	227.7
Local government	0.0	0.5	-0.5	0.0	2.2	-2.2	0.2	1.6	-1.4
Municipal enterprises	0.2	8.4	-8.2	0.3	8.9	-8.6	0.2	7.9	-7.7
State enterprises	174.5	171.1	3.4	111.8	92.4	19.4	120.7	71.9	48.8
Other Norwegian sectors	388.7	349.0	39.7	456.4	441.4	15.0	449.3	416.1	33.2
Undistributed and errors and omissions	0.0	0.0	0.0	0.0	0.0	0.0	129.1	0.0	129.1
All sectors	1 743.4	1 275.1	468.3	1 955.7	1 319.4	636.3	2 236.9	1 406.2	830.7

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

the balance of payments and sectoral statistics for insurance and mortgage companies.

Sources: Statistics Norway and Norges Bank

International capital markets

				Q3		Outstanding
	1999	2000	2001	2001	2002	30.09.02
Total Of which vis-à-vis:	276.1	1 221.5	859.4	-12.0	141.7	12 694.1
Non-banks Banks (and undistributed)	298.2 -22.0	288.8 932.7	442.1 417.3	13.5 -25.5	144.0 -2.3	4 408.1 8 286.0

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

1) International assets (external positions) comprise

- cross-border claims in all currencies

- foreign currency loans to residents

- equivalent assets, excluding lending

Source: Bank for International Settlements

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

		December		(23
	1999	2000	2001	2001	2002
US dollar (USD)	41.5	43.3	45.2	43.5	42.6
Deutsche mark (DEM)					
Swiss franc (CHF)	2.4	2.2	2.1	2.2	2.1
Japanese yen (JPY)	9.0	8.2	6.2	6.9	5.6
Pound sterling (GBP)	4.3	4.4	4.4	4.4	4.4
French franc (FRF)					
Italian lira (ITL)					
ECU/EURO ¹⁾	27.8	27.8	28.6	30.0	32.3
Undistributed ²⁾	15.0	14.2	13.5	13.0	13.0
Total in billions of USD	9 939.5	10 778.6	11 592.3	11 271.4	12 694.1

¹⁾ From January 1999.

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

Source: Bank for International Settlements

Foreign currency trading

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

		Purch	ased net fro	om:		Purchased g	ross from:	Sold gro	oss to:
	Central gov't ²⁾	Other financial inst. ³⁾	Non- financial sector	Foreign sector	Total	Non- financial sector	Foreign sector	Non- financial sector	Foreign sector
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	-18.3	93.2	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	56.4	-6.9	94.2	106.8	647.1	50.4	654.0
July 2002	-0.1	49.6	56.4	-22.5	83.4	110.6	642.8	54.2	665.3
August 2002	-0.1	49.7	53.6	-2.2	101.0	107.2	646.7	53.6	648.9
September 2002	-0.1	33.4	46.0	31.4	110.7	102.9	622.2	56.9	590.8
October 2002	0.0	20.7	46.0	28.2	94.9	99.8	606.6	53.8	578.4
November 2002	-0.1	22.3	47.9	32.0	102.1	99.6	592.5	51.7	560.5
December 2002	0.0	22.1	48.3	65.0	135.4	102.2	645.6	53.9	580.6
January 2003	0.0	23.9	22.2	55.0	101.1	110.0	632.2	87.8	577.2

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
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	31.12.2001	31.03.2002	30.06.2002	30.09.2002	31.12.2002
Foreign assets, spot	219 915	217 232	203 986	194 813	192 705
Foreign liabilities, spot	335 924	366 240	317 645	351 361	326 594
1. Spot balance, net	-116 009	-149 008	-113 659	-156 548	-133 889
2. Forward balance, net	44 192	76 692	121 215	122 975	136 072

	2002					Week i	in 2003				ĺ
	1-52	1	2	3	4	5	9	7	8	6	1-9
1. Norwegian customers	48	5.1	- 6.6	6.8-	21.1	-15.5	6.0-	-7 .3	11.4	1.5	0.0
Net spot ¹⁾	10	13.3	-7.1	-17.3	25.4	-10.8	4.2	-2.1	-3.6	3.4	5.5
Net forward ¹⁾	38	-8.3	0.5	8.4	-4.3	-5.1	-4.7	-5.1	15.0	-1.9	-5.6
-Change in purchase contracts ²⁾	-12	8.3	-1.4	-11.7	2.6	8.6	4.6	4.9	-5.2	5.2	16.0
- Change in sales contracts ³⁾	26	0.1	-0.9	-3.3	-1.7	3.8	-0.5	-0.2	9.8	3.3	10.5
2. Foreign sector	-81	6.0	<u>-2.2</u>	10.6	-17.0	19.8	-3.1	5.5	-8.7	-2.7	3.1
Net spot ¹⁾	-18	-2.4	3.7	-2.8	9.9	0.9	-2.9	-1.8	3.8	9.5	14.5
Net forward ¹⁾	-63	3.3	-6.0	13.4	-23.5	19.0	-0.2	7.3	-12.5	-12.2	-11.4
-Change in purchase contracts ²⁾	-126	-15.7	-14.3	16.5	24.1	-17.6	-10.7	-8.9	6.8	18.4	-1.4
- Change in sales contracts ³⁾	-189	-12.4	-20.2	29.9	0.6	1.4	-10.9	-1.6	-5.7	6.2	-12.8
3. Norges Bank	23	0.3	0.7	0.7	0.7	9.0	0.7	0.7	0.7	0.8	5.7
Net spot ¹)	53	0.3	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.8	5.7
Net forward ¹⁾	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-Change in purchase contracts ²⁾	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Change in sales contracts ³⁾	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. Other											
Increase in loorwegian customers net	Ξ	5	0 ¥	- 1	00	¥ T	1	00	0.0	00	5
Increase in banks' total positions	4	0.3	-0.1	-0.4	0.0	-0.2	0.4	-1.2	0.8	-2.0	-0.5
Specification of foreign sector spot:											
Net NOK claims on banks ⁴)	-13	-2.2	4.1	-1.5	9.5	-0.6	-3.4	-0.6	3.7	7.9	17.0
VPS-registered shares ⁵⁾	-2	-0.2	0.4	-0.2	0.2	0.3	-0.1	-0.2	0.4	1.7	2.5
VPS-registered bonds ⁵⁾	-5	-0.2	-1.3	-1.3	-1.9	0.7	1.0	-0.7	-0.8	0.3	-4.3
VPS-registered notes and certificates ⁵⁾	1	0.2	0.5	0.1	-1.3	0.5	-0.4	-0.4	0.5	-0.5	-0.7
Foreign sector purchases of VPS-registered securities, total	•	8.4	23.0	32.5	36.9	38.7	34.9	24.7	31.8	43.0	273.8
Foreign sector sales of VPS-registered securities, total		8.2	22.6	31.2	33.9	40.2	35.3	23.4	31.9	44.5	271.2
¹⁾ Positive figures denote that the sectors in question purchase foreign	n currency fi	rom Norweg	gian banks			.					

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

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

tosurve figures denote a reduction of NOK deposits from the foreign sector in Norwegian banks.

³⁾ Positive figures denote net sales of VPS-registered securities by the foreign sector.

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