

## 1 SUMMARY

The Federal Reserve has raised the Fed Funds rate on two occasions, while the Bank of England has raised its repo rate once and the central bank of Denmark has lowered its repo rate since the June Economic Bulletin. Yields on 10-year government bonds in Japan and Germany have increased. The euro weakened in the first half of 1999, particularly against the US dollar, but rebounded in July. The euro then weakened slightly during August and September.

The Norwegian krone has weakened by 0.5% against the euro. The exchange rate has ranged between NOK 8.05 and 8.38 against the euro. The trade-weighted index has moved down by 1.4%.

The yield curve in the money market has flattened since the June report. While nine- and twelve-month rates remain basically unchanged, rates for maturities of up to six months have fallen. The money market indicator has moved down 0.7 percentage point to 6.4%. On 8 September, the three-month interest rate differential against the euro was 3.3 percentage points, ie 0.5 percentage point lower than in June.

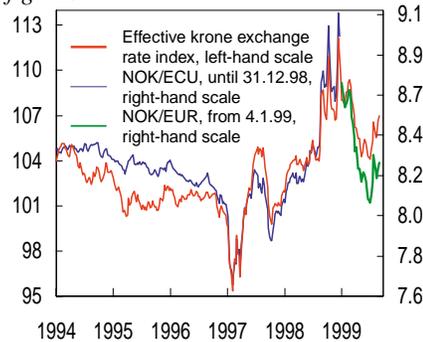
The yield curve in the bond market is still slightly upward sloping and has steepened since the last report. The yields for the various maturities have increased by between 0.5 and 0.8 percentage point.

Bank interest rates were reduced in the second quarter of 1999. The interest margin widened somewhat as lending rates declined slightly less than deposit rates. Life insurance and mortgage companies also lowered lending rates, while state lending institutions raised their lending rates.

The indicator for twelve-month growth in private and municipal sector gross domestic debt (C2) is estimated at 7.0% at end-July. Year-on-year growth has levelled off and has remained at about 7% since the end of the first quarter of 1999. Annual growth in the money supply (M2) increased from 5.1% to 7.7% from end-March to end-July.

## 2 FOREIGN EXCHANGE AND MONEY MARKETS AND NORGES BANK'S OPERATIONS

**Chart 2.1** Krone exchange rate measured by ECU/EUR and the manufacturing industry's effective krone exchange rate. A descending curve denotes a stronger krone. Weekly figures



Source: Norges Bank

**Table 2.1** Transactions relating to Norges Bank's exchange market transactions<sup>1</sup> In billions of NOK

	1998 <sup>2</sup>	1999 <sup>3</sup>
<i>A. Norges Bank's net sales of currency to banks</i>		
1. Spot	11	-2.8
2. Forward	11	-2.8
	0	0.0
<i>Used by banks to provide cover (offsets):</i>		
<i>B. Foreign<sup>4</sup></i>		
1. Spot	10	9.2
2. Forward	-15	10.7
	25	-1.5
<i>C. Norwegian sectors, non-bank<sup>4</sup></i>		
1. Spot	-13	-20.9
2. Forward	20	-8.7
3. Increase	-15	-5.1
	-18	-7.1
<i>D. Other</i>	14	8.8
<i>Memorandum item: Norges Bank's international reserves</i>		
	142	140.6 <sup>5</sup>

<sup>1</sup>For further details, see Table 48 in the statistical annex.

<sup>2</sup>Based on figures from the Bank's statistics.

<sup>3</sup>Weeks 1-34.

<sup>4</sup>Positive figures denote foreign exchange sales from banks. Negative figures denote purchases.

<sup>5</sup>End-July.

Source: Norges Bank

### 2.1 Foreign exchange market

The Norwegian krone has depreciated by 0.5% against the euro since the last report. The krone exchange rate against the euro fluctuated between NOK 8.05 (5 July) and NOK 8.38 (29 July). The trade-weighted index has weakened by just over 1.4%.

The weakening of the krone occurred at a time when there was growing interest in the euro in foreign exchange markets. The krone rebounded moderately towards the end of July and in August.

Table 2.1 shows movements in banks' total foreign currency transactions in 1998 and so far in 1999. Norges Bank has purchased foreign currency from banks equivalent to NOK 2.8bn this year up to 27 August. These purchases must be seen in connection with the accumulation of capital in the Government Petroleum Fund. Norwegian banks have made spot currency sales to the foreign sector equivalent to NOK 10.7bn and forward currency purchases from the foreign sector equivalent to NOK 1.5bn. Banks' spot currency sales can partly be seen in connection with a reduction of NOK 13.7bn in the foreign sector's holdings of VPS-registered equities (equities registered with the Norwegian Central Securities Depository). The foreign sector has increased its holdings of VPS-registered bonds by NOK 9.9bn in the same period.

Banks' spot currency purchases from Norwegian customers came to NOK 8.7bn and forward currency purchases to NOK 5.1bn. The banks also increased their net currency claims on Norwegian customers by NOK 7.1bn.

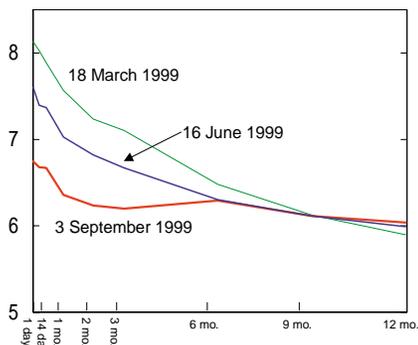
Norges Bank's international reserves amounted to the equivalent of NOK 140.6bn at end-July 1999, and the value of the Government Petroleum Fund came to NOK 178.1bn.

### 2.2 The money market and Norges Bank's operations

#### Interest rates

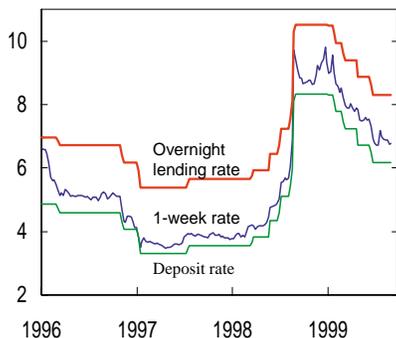
The money market yield curve has flattened out since the last report. The yields for maturities up to six months have fallen, while nine- to twelve-month rates remain largely unchanged. One-month money market rates have dropped by 0.7 percentage point. The fall for the shortest maturities began after Norges Bank reduced its key rates by 0.5 percentage point on

**Chart 2.2** Yield curves for Norway.  
Effective money market rates



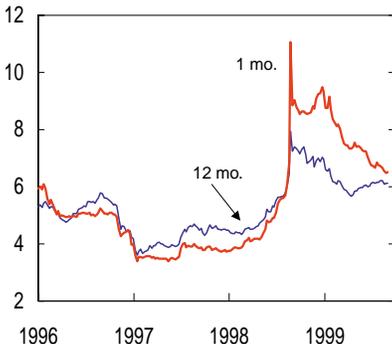
Source: Norges Bank

**Chart 2.3** Short-term money-market rates. Effective rates. Weekly figures



Source: Norges Bank

**Chart 2.4** One- and twelve-month money market rates. Effective rates. Weekly figures



Source: Norges Bank

16 June. The deposit and lending rates are now 6.0% and 8.0% respectively.

The money market indicator (an average of yields for maturities of one week to three months) has fallen by 0.7 percentage point to 6.4%.

On 8 September, the interest rate differential against the euro (effective three-month) was 3.3 percentage points, ie 0.5 percentage point less than at the time of the June report.

### Money market liquidity

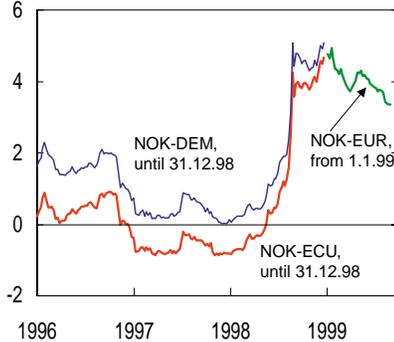
Norges Bank influences money market rates by using its key rates to set a corridor for interest rates, ie banks' interest rates on sight deposits in Norges Bank (deposit rate) and the interest rate on overnight loans to banks (overnight lending rate). Norges Bank can influence interest rates in the money market within this interval through the supply and withdrawal of krone liquidity.

In June, the daily liquidity surplus in the money market was on average NOK 6.8bn. In June, there was a need for liquidity, which was supplied to banks in the second half of the month through the issue of two fixed-rate loans (F-loans) at rates of 7.15% and 6.65% respectively and two repurchase agreements at a rate of 6.05%. There was surplus liquidity in the banking system towards the end of the month, which was withdrawn through a fixed-rate deposit (F-deposit) at a rate of 6.22%.

In July, the liquidity surplus in the money market was on average NOK 6.1bn. There was a large surplus of liquidity in the first half of July before Norges Bank intervened in order to influence liquidity. Liquidity was withdrawn through four F-deposits at rates between 6.16% and 6.22%. In mid-July there was a need for liquidity which was supplied through 3 repurchase agreements, adding just under NOK 6bn daily from 20 July to 31 July. The rate for these repurchase agreements was 6.05%. However, the amounts were not sufficiently large and there was a need to supply more liquidity through unsecured F-loans. In the last half of July, a total of six F-loans were issued at a rate of 6.65%. The interest rates on repurchase agreements are set by auction, whereas the rate on F-loans is set by Norges Bank at 60 basis points over the interest rate on the last repurchase agreement.

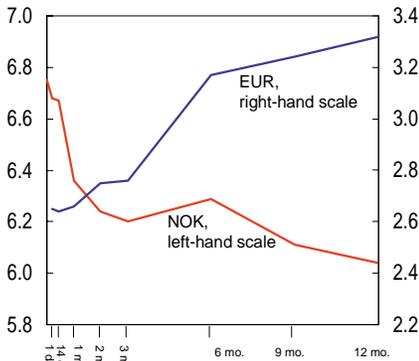
In August, the liquidity surplus in the money market was on average NOK 7.2bn. At the beginning of the month there was excess liquidity which was mopped up through an F-deposit at a rate of 6.23%. Liquidity was tight towards the middle and the end of the month before Norges Bank supplied liquidity through three repurchase agreements at a rate of 6.05%.

**Chart 2.5** Interest rate differentials for 3-month effective money market rates. Weekly figures



Source: Norges Bank

**Chart 2.6** Money market yield curves for NOK and EUR. Effectives rates on 7 September 1999



Source: Norges Bank

**Table 2.2** Central bank financing

	1999				
	April	May	June	July	Aug.
Daily average (NOKbn)	3.6	11.3	7.2	2.2	4.6
Of which:					
Overnight loans	0.1	0.0	0.1	0.0	0.0
Fixed-rate deposits/loans	1.0	2.2	1.1	-0.3	-0.6
Other financing	2.5	9.0	6.1	2.5	5.2
Overnight borrowing facility, NOKbn	10.6	10.2	10.6	10.6	10.6
Banks' sight deposits with Norges Bank	8.5	8.6	6.8	6.3	7.0
Fixed-rate deposit rate(average), per cent	7.32	6.70	6.22	6.19	6.23
Fixed-rate lending rate(average), per cent	7.32	7.15	7.00	6.65	...

Source: Norges Bank

### The certificate market

Treasury bills are issued to finance central government activity, but issues are also adjusted to changes in liquidity in the money market. In recent years, a Treasury bill has normally been issued each month, following a pattern whereby a new twelve-month bill is issued every quarter. The four existing loans are increased in the intervening months so that there are four outstanding issues covering various maturities of up to one year.

On 7 June, NOK 2bn of Treasury bill SS58, with maturity on 15 March 2000, was auctioned at a weighted average interest rate of 5.85%. A new Treasury bill, SS59, was issued on 15 June with a volume of NOK 5bn (NOK 4.5bn to the market) and a weighted average interest rate of 5.88%, maturing on 17 November 1999. The auction was not announced in the auction calendar for the first half of 1999. The purpose of the issue was to adjust liquidity in the money market in the period up to the bill's maturity in November. A new Treasury bill, SS60, was issued on 5 July with a volume of NOK 4bn and a weighted average interest rate of 5.85%, maturing on 21 June 2000. On 9 August, Treasury bill SS60, with maturity on 21 June 2000, was increased by NOK 3bn with a weighted average interest rate of 6.07%.

Commercial and savings banks, as well as insurance companies, are the major investors in Treasury bills. They accounted for nearly 63% of total nominal holdings of NOK 29bn at the end of the second quarter of 1999. Other major investors include non-financial enterprises at 16%, the foreign sector at just under 9% and Norges Bank and state lending institutions at 10%.

Turnover in certificates on the Oslo Stock Exchange came to nearly NOK 114bn to end-August. Treasury bills accounted for approximately NOK 97bn of turnover, ie 85%.

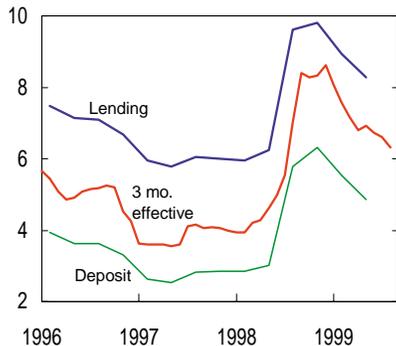
### 2.3 Interest rate trends in financial institutions

Banks' lending and deposit rates were reduced from the end of the first quarter to the end of the second quarter of 1999, with lending rates declining slightly less than deposit rates, thereby moderately widening the interest margin. State lending institutions raised their lending rates, while mortgage companies and life insurance companies lowered their rates.

Banks' lending rates (excluding non-accrual loans) moved down by 0.65 percentage point from the end of the first quarter of 1999 to 8.28% at the end of the second quarter of 1999. Deposit rates were reduced by 0.69 percentage point in the second quarter of 1999 to 4.85%. As a result, the spread between lending and deposit rates widened by 0.04 percentage point to 3.43 percentage points at the end of the second quarter this year.

Life insurance companies lowered their lending rates by 0.45 percentage point to 7.04% at the end of the second

**Chart 2.7** Banks' deposit and lending rates (quarterly figures) and 3-month money market rates (monthly figures)



Source: Norges Bank

**Table 2.3** Gross issues of certificates by issuer sector.<sup>1</sup> In billions of NOK

	1997	1998	Jan - July	
			1998	1999
Treasury bills	92.5	48.0	33.0	29.5
Bank certificates (CD)	102.5	108.3	56.5	71.8
Notes issued by				
Mortgage companies	20.1	18.8	9.0	15.3
Private companies	84.5	82.4	51.3	39.3
Finance companies	4.6	6.8	3.8	3.1
Foreign notes in NOK	0	0.1	0	0.3
<b>Total</b>	<b>304.2</b>	<b>264.4</b>	<b>153.6</b>	<b>159.3</b>

<sup>1</sup>Table 18 in the statistical annex shows the distribution of NOK-denominated VPS-registered certificates by issuer sector.

Source: Norges Bank

quarter. Lending rates in mortgage companies were reduced by 0.16 percentage point to 7.03%. State lending institutions raised lending rates by 0.42 percentage point to 6.18% at the end of the second quarter of 1999.

## 2.4 Profit trends in financial institutions

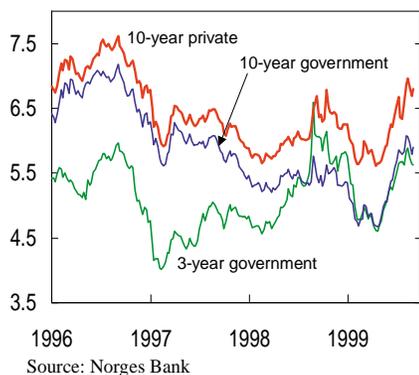
Commercial banks' ordinary operating profit before tax and after losses for the second quarter of 1999 amounted to just under NOK 2.1bn, equivalent to 1.32% of average total assets (ATA). This represents a slight decrease compared with the first quarter, measured both in kroner and as a share of ATA. This is primarily the result of slightly higher losses. The profit for the first half of 1999 (accumulated figures) shows an improvement compared with the same period of 1998, measured both in kroner and as a share of ATA.

The 30 largest savings banks' total ordinary operating profit before tax and after losses for the second quarter of 1999 amounted to just under NOK 1.5bn (1.35% of ATA). This is a marked decline in profits compared with a profit of NOK 2.1bn (2.01% of ATA) in the first quarter of the year. As in the case of commercial banks, the profit for these savings banks in the first half of 1999 is an improvement on the first half of 1998, measured both in kroner and as a share of ATA.

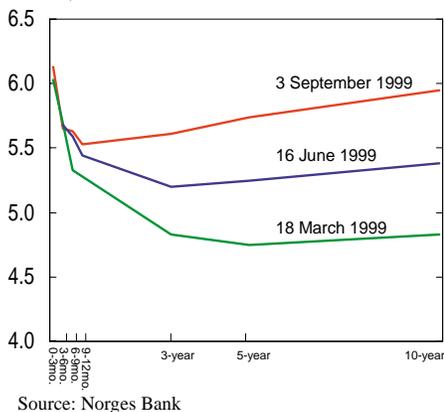
Mortgage companies' ordinary operating profit before tax and after losses for the second quarter of 1999 amounted to just under NOK 0.4bn (0.97% of ATA), ie an improvement on the first quarter of 1999. Profits for the first six months of the year also rose markedly on the same period of 1998. Finance companies' profit for the second quarter of 1999 amounted to nearly NOK 0.4bn, ie 2.67% of ATA. This exceeded profits for the first quarter, but the result for the first half of 1999 was slightly lower than for the same period of 1998, measured as a share of ATA.

## 3 CAPITAL MARKETS

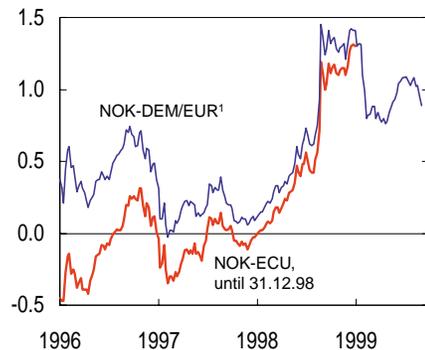
**Chart 3.1** Yields on government and private bonds. Weekly figures



**Chart 3.2** Yield curves for Norway. Effective Treasury bill and government bond yields



**Chart 3.3** Yield differentials for 10-year government bonds. Effective rates. Weekly figures



<sup>1</sup>From 4.1.1999 German government bonds denominated in EUR

### 3.1 The bond market

#### Yields

The yield curve in the bond market has shifted upwards since the last report, with yield increases between 0.5 and 0.8 percentage point for the various maturities. The yield curve is still slightly upward sloping. On 8 September, the effective yield on Norwegian ten-year government bonds was 6.0%, ie 0.6 percentage point above its mid-June level.

The yield differential between Norwegian and German ten-year government bonds has narrowed by 0.1 percentage point since mid-June and is now at 0.9 percentage point. The effective yield on German ten-year government bonds was 5.1% on 8 September.

#### Turnover

Turnover in bonds on the Oslo Stock Exchange amounted to NOK 623bn in the period to end-August. Turnover in August amounted to NOK 68bn, with an average daily turnover of NOK 3.1bn.

Government bonds accounted for the largest share of turnover at 80% of total turnover so far in 1999 and 73% of turnover in August. Turnover in bonds other than government bonds was a good NOK 127bn to end-August, with NOK 18bn of this turnover recorded in August. Mortgage companies, banks and institutions with government guarantees were the principal issuers of these bonds.

#### New issues

Gross bond issues came to NOK 77.7bn in 1998, compared with NOK 74.4bn in 1997. In the first seven months of 1999, gross issues came to NOK 49.7bn, compared with NOK 49.0bn in the same period of 1998. Private banks reduced their share of gross issues from 51% in the first seven months of 1998 to 25% in the same period of 1999. State lending institutions and state-owned enterprises accounted for 21% of gross issues in the period to end-July, increasing from just over 11% in the same period of 1998. Mortgage companies accounted for a good 18% of total issues in the seven months to end-July, compared with just under 8% in the same period last year.

Government bond S468 was increased by Dutch auction by NOK 3.0bn on 21 June with a weighted average interest rate of 5.36%. The total value outstanding for the five benchmark government bonds is NOK 113bn.

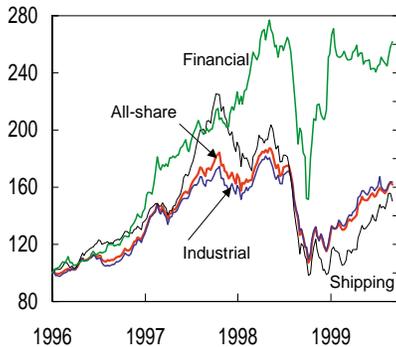
**Table 3.1** Gross issues of bearer bonds by issuer sector<sup>1</sup>. In billions of NOK

	1997	1998	Jan - July 1998	1999
Central government	14.0	14.0	10.0	9.0
State banks and state enterprises	3.9	11.7	5.4	10.5
Private banks and insurance companies	39.7	35.0	25.2	12.7
Mortgage companies and finance companies	6.1	8.3	3.8	9.0
Private sector and municipalities	9.8	8.2	4.5	7.0
Non-resident borrowers	0.9	0.5	0.1	1.4
<b>Total</b>	<b>74.4</b>	<b>77.7</b>	<b>49.0</b>	<b>49.7</b>

<sup>1</sup> Table 15 in the statistical annex shows the distribution of NOK- denominated VPS-registered bonds by holding sector.

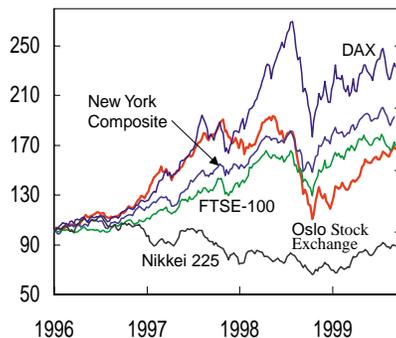
Source: Norges Bank

**Chart 3.4** Share indices on the Oslo Stock Exchange. Weekly figures. Week 1 1996 = 100



Source: The Oslo Stock Exchange

**Chart 3.5** International share indices. Weekly figures. (Week 1 1996 = 100)



Sources: Reuters and the Oslo Stock Exchange

### Distribution of bond holdings

Second quarter figures from Norges Bank show that insurance companies accounted for the largest share of NOK-denominated VPS-registered bond holdings at a good 40% of the total market value of NOK 382bn. Commercial and savings banks (including Postbanken and the banks' guarantee funds) accounted for just under 16%, while the central government and social security sector accounted for a good 9%. Foreign investors' share at the end of the second quarter of 1999 was nearly 13%.

## 3.2 The stock market

### Share prices

The all-share index of the Oslo Stock Exchange showed a decline of nearly 30% in 1998, ie the poorest share price performance in Europe.

In the first half of 1999, however, the Oslo Stock Exchange was among the top performers in Europe. The all-share index of the Oslo Stock Exchange advanced by over 30% from the beginning of 1999 to the second week of September. Since the beginning of 1995, the all-share index of the Oslo Stock Exchange has advanced by approximately 87%. Of the sub-indices (Chart 3.4), the financial index has shown the weakest gains in 1999 at 13.5%. The shipping and SME indices have climbed the most, advancing by 50% and 39% respectively, while industrials and the IT index have both advanced by about 30% since the beginning of the year.

The Japanese stock market is the only international market to have performed on a par with the Norwegian market this year. Since the beginning of the year the Nikkei 225 index has increased by over 28%. The New York composite (NYSE) has shown the weakest increase, advancing by just under 4% so far this year. The DAX and FTSE 100 indices have both advanced by approximately 6%.

### Turnover and market value

This year, turnover in shares and primary capital certificates on the Oslo Stock Exchange amounted to approximately NOK 228bn (Table 3.2). This is a 38% rise in turnover on 1998. Companies on the main list have shown the strongest gains, and industrials have surged by over 85%. Turnover in SME shares has risen by about 30% on the same period of 1998. Turnover in retail and property shares have shown the most substantial increase of the companies on the SME list, compared with the corresponding period of last year. At end-July, 229 companies, including 23 foreign companies, were listed on the Oslo Stock Exchange.

**Table 3.2** *Turnover and market value on Oslo Stock Exchange. In billions of NOK*

Turnover	1996	1997	1998	Jan.- July 1999
Total	231.7	341.1	322.7	228.6
Financial	28.1	43.3	51.4	32.9
Industrial	132.7	200.0	123.7	108.5
IT <sup>1</sup>	-	-	33.0	23.8
Shipping/offshore	46.3	53.7	67.6	38.7
SMEs	16.2	34.4	24.4	11.8
Primary capital	8.2	9.4	7.1	3.5
Other	0.2	0.3	15.5	9.4
Market value	389.4	490.3	415.0	514.1

<sup>1</sup>The IT index was established in 1998.

Source: Norges Bank

**Table 3.3** *Issues on the Oslo Stock Exchange. In millions of NOK*

Turnover	1996	1997	1998	Jan.- July 1999
Total	9 020	21 501	10 466	7 330
Of which				
foreign	1 867	5 392	0	15
Financial	147	327	420	110
Industrial	3 516	5 094	1 385	2 860
IT <sup>1</sup>	-	-	1 058	157
Shipping/ offshore	1 970	3 893	1 747	2 106
SMEs	1 393	6 490	3 089	1 504
Primary capital	127	304	2 410	351
Other	0	1	357	205

<sup>1</sup>Not available prior to 1998

Source: Norges Bank

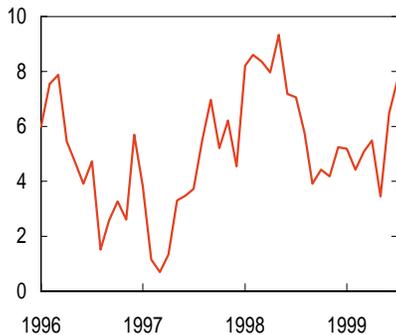
### *New issues*

Shares and primary capital certificates issued up to 2 September 1999, including issues in connection with new stock exchange listings, amounted to approximately NOK 7.3bn. This represents an increase of about 4% on the same period in 1998. Public offerings and private placements accounted for 48% and 45%, respectively, of total issues this year. The remaining capital was placed with employees. Among the companies quoted on the main list of the Oslo Stock Exchange, shipping/offshore and industrials have accounted for the largest issues (Table 3.3). SMEs account for issues of approximately NOK 1.5bn so far this year.

### *Distribution of shareholdings*

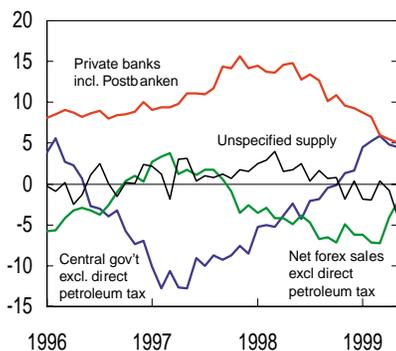
Foreign investors had the largest holdings in Norwegian listed companies, accounting for slightly more than 29% of total market value at end-July 1999. The largest Norwegian shareholders are private enterprises, with holdings of nearly 23% of market value. The public sector accounted for approximately 14% of total shareholdings at end-July 1999, making it the second largest domestic holder of shares in Norwegian companies listed on the Oslo Stock Exchange. Banks and finance companies have increased their holdings compared with the mid-1990s, but still account for a relatively small share at 2.4% of market value. Securities funds accounted for 8.4% of shareholdings at end-July.

**Chart 4.1** Growth in money supply (M2). Percentage growth in last 12 months



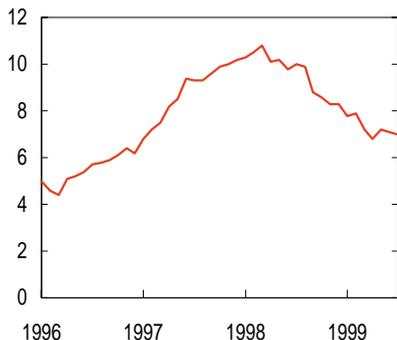
Source: Norges Bank

**Chart 4.2** Contributions of money supply components to 12-month growth in money supply (M2). Percentage points



Source: Norges Bank

**Chart 4.3** Norges Bank's credit indicator (C2). Growth in domestic credit supply to municipal sector, non-financial enterprises and households. Percentage growth in last 12 months



Source: Norges Bank

## 4 PRIVATE AND MUNICIPAL<sup>1</sup> FINANCIAL ASSETS AND LIABILITIES

### 4.1 Money supply growth

At end-July, twelve-month growth in the money supply (M2) was 7.7% (NOK 54.4bn), compared with 6.5% (NOK 45.8bn) at end-June. Year-on-year growth in the money supply was 5.2% to the end of 1998, after reaching a peak of 9.3% in the twelve months to end-May 1998. Year-on-year growth fluctuated between 3.5% and 5.5% in the first five months of the year, but accelerated in the following two months.

Underlying year-on-year growth in the money supply was 10.8% at end-July, compared with 5.5% at end-June. From a peak of 13.3% at end-March, the growth rate slowed in the next three months before rising again in July.

The central government's combined transactions (revenue deficit and loan transactions) increased the supply of liquidity in the first half of the year, whereas liquidity was withdrawn in the corresponding period of 1998. Banks also supplied liquidity in the period January-June, but provided far less liquidity than in the same period of 1998. So far in 1999, net sales of foreign currency from money-holding sectors have supplied liquidity, whereas positive net sales were recorded in the same period last year. The total supply of liquidity in the first six months of the year was slightly higher than in the same period of 1998.

### 4.2 Credit indicators

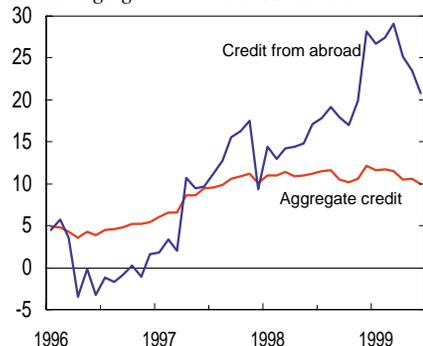
Year-on-year growth in the indicator for private and municipal sector gross domestic debt (C2), adjusted for exchange rate changes, moved down from 7.1% (NOK 82.8bn) at end-June to 7.0% (NOK 81.2bn) at end-July. Growth in credit from domestic sources in NOK (C1) also moved down 0.1 percentage point to 6.0% from June to July. At the same time, growth in foreign currency debt slowed from 25.6% to 23.7%. Seasonally adjusted annualised growth in credit from domestic sources was slightly lower in July than in the two preceding months, but was still higher than year-on-year growth in both C1 and C2. Monthly growth in foreign currency debt was negative in July as well as in most preceding months this year.

After reaching 10.8% in the period to end-March 1998, year-on-year growth declined by 4.0 percentage points in the

<sup>1</sup>The private and municipal sector consists of municipal government, non-financial enterprises and households. "Money-holding" sectors also include financial enterprises other than banks and state lending institutions.

**Chart 4.4** Norges Bank's credit indicator (C3). Growth in aggregate credit (from domestic and foreign sources) to municipal sector, non-financial enterprises and households.

Percentage growth in last 12 months



Source: Norges Bank

period to end-April this year. It has hovered at just over 7.0% in the following three months.

The underlying growth rate accelerated from 7.1% at end-June to 8.6% at end-July, ie underlying growth increased for the second consecutive month following three months of decline.

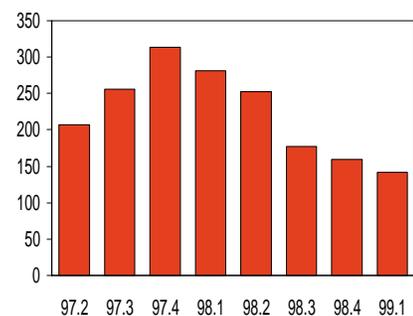
Year-on-year growth in bank lending increased again from June to July, but remained lower than growth in C2. This slower year-on-year growth in lending from mortgage companies and finance companies continued in July, accompanying the higher annual growth in private and municipal sector certificate debt. Twelve-month growth in lending from life insurance companies also moved up, but slowed slightly in state lending institutions from June to July. Lending from both of these credit institutions has increased over a fairly long period. However, year-on-year growth in lending from life insurance companies was still negative at end-July.

Lending from private banks, state lending institutions and mortgage companies accounts for a good 85% of C2. Information on this sector's distribution of credit by borrowing sector is available earlier than for other components of C2. As with developments in C2, year-on-year growth in lending from these sources has remained relatively stable in recent months. Aggregate lending from these three sources declined by 0.2 percentage point from end-April to end-July (7.1%). Lending growth for non-financial enterprises slowed from 9.5% to 8.9% from April to July.

Twelve-month growth in lending to households slowed by 0.2 percentage point to 6.2%, whereas it increased from 4.3% to 6.6% for lending to the municipal sector (a low of 3.6% was reached at end-March).

The indicator for private and municipal sector total gross debt (C3) comprises private and municipal sector domestic debt (C2) and gross foreign debt. The indicator for private and municipal sector gross foreign debt rose by 20.9% (NOK 63.0bn) over the twelve months to end-June. Year-on-year growth in the indicator for private and municipal sector gross domestic debt was 7.1% (NOK 82.8bn) at the time. This means that the indicator for total private and municipal gross debt (C3) increased by 10% (NOK 145.7bn) in the twelve months to end-June, against 11.5% (NOK 162.6bn) in the twelve months to end-March. This decline is exclusively attributable to foreign sources of credit.

**Chart 4.5** Private and municipal gross assets less liabilities excl. shares etc. Last 8 quarters. In billions of NOK



Source: Norges Bank

## 4.3 The financial position of the private and municipal sector

### General

Net claims in the private and municipal sector, with assets and liabilities measured in terms of market value, were reduced by NOK 28bn from the end of the first quarter of 1998 to the end

**Table 4.1** *Private and municipal sector assets and liabilities at market value. In billions of NOK*

	31 Mar 1997	31 Mar 1998	31 Mar 1999
<i>Total assets</i>	1916	2167	2189
Bank deposits etc	535	568	608
Bonds etc	87	97	96
Equities etc	480	638	594
Insurance claims	348	387	413
Other assets	466	477	478
<i>Total liabilities</i>	2495	2860	2910
Loans	1257	1423	1559
Bonds etc	134	145	173
Equities etc	775	974	863
Other liabilities	329	319	315
<i>Net assets</i>	-579	-693	-721
Households	264	320	317
Non-financial <sup>1</sup> enterprises	-808	-980	-1003
Municipal sector	-35	-32	-35
<i>Memorandum I</i>			
Gross assets less liabilities excl. equities etc <sup>1</sup>	196	281	142
- non-financial enterprises	-33	-7	-140
<i>Memorandum II</i>			
Money supply (M2)	639	693	728
Credit indicator (C2) <sup>2</sup>	1014	1131	1214
Credit indicator (C3) <sup>2</sup>	1236	1409	1579

<sup>1</sup> For non-financial enterprises, 'liabilities excl. equities etc' refers to total liabilities excl. equities, units in securities funds and deposits

<sup>2</sup> Percentage change in the money supply differs from twelve month growth. The reason is that exchange rate valuation changes on domestic foreign exchange loans are deducted when calculating percentage growth.

of the first quarter of 1999. In this period gross debt increased by 1.7% and gross claims by 1.0%.

An alternative indication of the private and municipal sector's financial position is the

difference between gross assets and liabilities, excluding equities, units in securities funds and capital contributions. By this measure the sectors' net asset position deteriorated by NOK 139bn from the first quarter of 1998 to the first quarter of 1999. The explanation for the reduction is that liabilities, excluding equities, etc, rose by NOK 161bn, while gross assets increased by NOK 22bn.

### *Developments in individual asset and liability items*

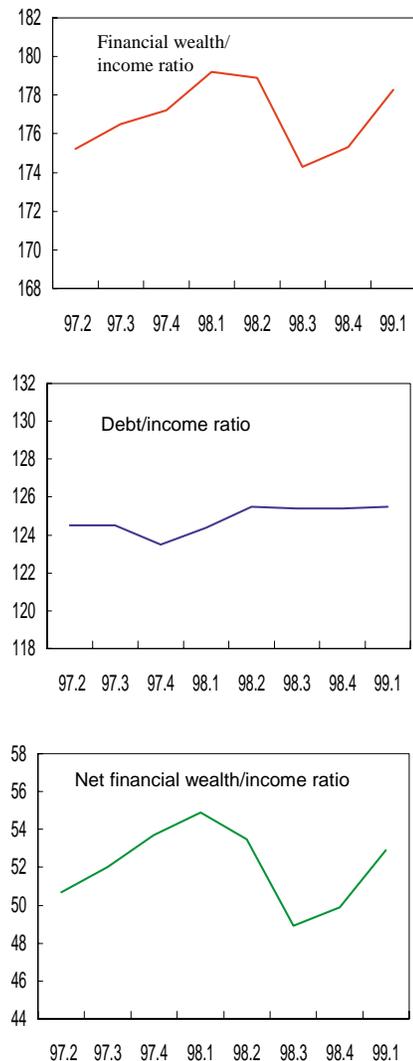
The percentage increase in private and municipal liabilities, excluding equities, etc, is estimated at 8.5% in this period. The explanation for this change is that loans and bonds, etc, increased by 9.6% and 19.6% respectively, while other liabilities were reduced by 1.4%. About two-thirds of private and municipal sector debt, excluding equities, etc, consists of loans from domestic financial institutions and loans raised in the domestic securities market (bonds, short-term paper and inter-company loans). These correspond roughly to the composition of the credit indicator C2. The remaining components of private and municipal liabilities, excluding equities, etc, are loans from other domestic sectors, loans from the foreign sector (loans, bonds, certificates) and other debt.

Year-on-year growth in the credit indicator (C2) was 7.2% at the end of the first quarter of 1999, ie 1.3 percentage points lower than the increase in liabilities, excluding equities, etc. The difference in growth rates for C2 and liabilities, excluding equities, etc, is attributable to an increase in foreign borrowing. Year-on-year growth in domestic credit (C2) to the private and municipal sector appears to have stabilised at the beginning of the third quarter of 1999. However, growth in private and municipal sector debt to the foreign sector (C3) has moved on a downward trend in the second quarter of 1999 (see section 4.2).

Private and municipal sector bond assets fell by 1.0% from the first quarter of 1998 to the first quarter of 1999. Insurance claims increased by 6.6% while other assets remained approximately unchanged. Bank deposits, notes and coin (bank deposits, etc) together make up the largest asset item for the private and municipal sector. Bank deposits, etc, increased by 7.1% in the four-quarter period.

Domestic banks account for most private and municipal sector bank deposits. Domestic bank deposits, notes and coin account for about four-fifths of the money supply (M2). The other components are CDs and unutilised credit. Money supply statistics also cover money-holding sectors other than banks and state lending institutions. At the end of the first

**Chart 4.6 Households. Financial wealth/income, debt/income and net financial wealth/income ratios. % of disposable income. Seasonally adjusted figures. Last eight quarters**



Source: Norges Bank

quarter of 1999, year-on-year growth in the money supply was 5.1%. This was 2.0 percentage points lower than the increase in bank deposits, etc. Twelve-month growth in the money supply exhibited a rising trend at the beginning of the third quarter of 1999 (see section 4.1).

### *The financial position of various sectors*

Household net financial wealth as a percentage of disposable income decreased in both the second and third quarter of 1998, after the net financial wealth/income ratio peaked in the first quarter. The net financial wealth/income ratio increased in the final two quarters of the period and was 52.9% at the end of the first quarter of 1999. This increase can be attributed to a rising wealth/income ratio and to a debt/income ratio which has remained at about the same level.

Non-financial enterprises' net asset position (measured at market value) weakened by NOK 23bn in the four-quarter period. Gross assets declined by 1.5%, while gross liabilities increased by 0.3%. Gross liabilities of enterprises include equities and units in security funds and are therefore affected by changes in the market value of these securities. The moderate increase in gross debt from the first quarter of 1998 to the first quarter of 1999 is largely due to a substantial fall in the market value of equities, etc.

The financial position of the enterprise sector can also be described in terms of the difference between gross assets and liabilities, excluding equities, etc. Calculated in this manner, net liabilities of non-financial enterprises increased by NOK 133bn from the first quarter of 1998 to NOK 140bn at the end of the first quarter of 1999. However, the basis for the calculations has some shortcomings, in that foreign commercial credit is only included to a limited degree in figures for recent quarters.

The calculations show a weakening of the net asset position of the municipal sector at the end of the first quarter of 1999 compared with four quarters earlier. There is nevertheless uncertainty attached to the calculations of preliminary municipal balance sheets, since the figures for some financial items are primarily based on projections.

# 20-KRONE COIN COMMEMORATING VOYAGES TO VINLAND - A COLLABORATION WITH CANADA



**Obverse**



**Reverse**

## Technical details:

Diameter:	27.5 mm
Thickness:	2.2 mm
Weight:	9.9 g
Alloy:	81% Cu, 10% Zn, 9% Ni

## Design:

### Obverse:

A portrait of H. M. King Harald V facing right. Below the neck of the portrait, the artist's signature: NAA. Underneath, the inscription: HARALD V / NORGES KONGE (Harald V, King of Norway).

### Reverse:

The bows of a Viking ship viewed from the front, with the outline of the hull and keel visible below the waterline. The value and date: 20 / KRONER / 1999 are placed on the left half of the coin above the hull, and the inscription MOT / UKJENT / LAND (Towards unknown lands) on the right. The mintmark of the Royal Norwegian Mint, the crossed pick and hammer, and the initials of the director of the Mint, JEJ (Jan Erik Johansen), are placed underneath the vessel on the right half of the coin.

*Edge:* Plain.

The coin was designed by the Norwegian sculptor Nils Aas.

The coin will be put into circulation on 9 October 1999. No ordinary 20-krone coins will be minted with the date 1999.

In 1960, Helge Ingstad's systematic search of extensive stretches of the coast of North America culminated in the discovery of seven overgrown house foundations at L'Anse aux Meadows, at the northernmost point of Newfoundland, Canada. Under the direction of his wife, the archaeologist Anne Stine Ingstad, an Old Norse habitation site was brought to light at the location.

This is believed to be the site of the first Viking landing in North America - called Vinland in the sagas. In his book "The Viking Discovery of America", Ingstad writes that the first voyages probably took place around the year 1000, or slightly earlier.

In 1998, Canadian prime minister Jean Chrétien wrote to Kjell Magne Bondevik, the prime minister of Norway, proposing that Canada and Norway each issue a coin in 1999 to commemorate the fact that it was about a thousand years since this landing took place.

As a result of this collaboration, the Royal Canadian Mint is minting a coin with a nominal value of CAD 5 to commemorate the event, and the Royal Norwegian Mint a 20-krone coin. 36 000 coins are being struck especially for collectors, and will be sold in pairs in two different presentation cases, one Canadian and one Norwegian. 16 000 of the sets are destined for the Canadian market and 10 000 for the Norwegian market.

The production of the coins is also a joint effort, since the blanks for the Canadian coins are being produced at Kongsberg, Norway, and are identical to the blanks from which the Norwegian coins are being struck. The Royal Canadian Mint is thus left only with the task of actually striking their own coins.

The 20-krone coin is being issued for circulation. It is legal tender and is being issued at face value.



**Obverse**



**Reverse**

Can the price of currency options provide an indication of market perceptions of the uncertainty attached to the krone exchange rate?

by Øyvind Eitrheim, head of research, Research Department, and Espen Frøyland and Øistein Røisland, advisers in the Economics Department, Norges Bank<sup>1</sup>

<sup>1</sup> With thanks to Jan Engebretsen, Kristin Gulbrandsen, Amund Holmsen, Harald Johansen, Jon Nicolaisen and Ole Bjørn Røste at Norges Bank for their useful comments. Peter Hördahl at Sveriges Riksbank also provided valuable assistance, among other things by making calculation programs available.

Prices in the currency options market can provide an indication of market perceptions of the uncertainty attached to future exchange rates. We have used these option prices to calculate the probability distribution for the krone exchange rate against the Deutsche mark since 1 January 1998. Until August 1998, the market expected relatively low volatility in the krone exchange rate, and the probability of an appreciation or a depreciation of the krone was considered to be virtually the same. The krone depreciated during the autumn of 1998 and uncertainty surrounding future movements of the krone exchange rate increased substantially. At the same time, the prevailing view among market participants seemed to be that a considerable depreciation of the krone was more probable than a corresponding appreciation. This volatility subsided during the spring of 1999 to about the level prior to the depreciation of the krone in the autumn of 1998. The estimated probability distribution for the krone exchange rate at end-May was approximately equal to the corresponding distribution in July of last year, i.e. the market assessment of

krone exchange rate uncertainty seems to be about the same as it was prior to the currency unrest in the autumn of 1998.

## Introduction

Financial variables are often employed as an indicator of market expectations. Provided there are no risk premia associated with currency investments, the forward exchange rate is an indicator of market expectations concerning future exchange rates.<sup>2</sup> However, forward rates provide no information about the uncertainty of exchange rate movements. One method of obtaining information concerning uncertainty in the foreign exchange market is to measure the volatility of the exchange rate over a given period. This can be done in several ways: through simple calculations of the standard deviation of changes in the exchange rate or by estimations using advanced models.<sup>3</sup> One disadvantage in using such methods to measure uncertainty in the exchange market is that the historical volatility measured by such means differs from market expectations of future volatility.

<sup>2</sup> A risk premium causes the forward rate to deviate from the expected exchange rate (see for example Lewis 1995).

<sup>3</sup> One such model is the GARCH model (Generalized Autoregressive Conditional Heteroskedasticity), developed by Bollerslev (1986). There are other more complicated exchange rate models which take the form of a combination of a dynamic stochastic process and a process allowing for possible stochastic jumps in the exchange rate ("jump-diffusion" models). (cf Malz 1996). For GARCH estimation of NOK/DEM, see Froyn and Mundaca (1999).

A more direct measure of market expectations of