

The financial crisis – the path ahead

Speech by Governor Svein Gjedrem at the annual meeting of the Norwegian Savings Banks Association on 22 October, 2009.

The text below may differ slightly from the actual presentation. This lecture does not contain assessments of the economic situation or current interest rate setting.

The past two years have been turbulent for banks, their customers and the authorities. The turbulence began to affect Norway in earnest last autumn. Norway has experienced banking crises before, and there is much to be learned from the management of these past crises.

One who experienced his fair share of crises was Nicolai Rygg, another central bank governor from this part of Norway and the son of a local shoemaker. The name stems from the Rygg farm in Randaberg. In 1923, Handelsbanken, the fifth largest bank in Norway, was on the brink of collapse [\(1\)](#). At that time, government interventions were to a greater extent kept out of the public eye and the bank received government support in secret. However, the Government had approved the allocation without informing the Storting. As a result, Prime Minister Abraham Berge and six government ministers were impeached. In his testimony, Rygg stated:

“Through both of these years, 1921 and 1922, ceaseless efforts had been made week after week to resolve a wretched situation. There was a constant stream of worries, one thing after another, one disheartening report after another, and minor setbacks were followed by major setbacks. It was reminiscent of an operating theatre. The task was onerous not only because of its proportions, but also because of the oppressive weight of the anxiety that accompanied it.” [\(2\)](#)

“The greatest risk lay in the fact that this anxiety had now become pervasive. The very foundations of confidence, the nation’s confidence in its own credit institutions had been shaken ... The most important objective was therefore to prevent an avalanche, seek to contain the damage, hang on and hold back. That was the dominant thought, to prevent total collapse, for the danger of this was indeed present... and the general atmosphere of nervousness manifested itself in the most peculiar ways. In the blind panic that ensued, unreasonable attacks were made on institutions that were more than deserving of their depositors’ confidence.” [\(3\)](#)

There may have been a similar feeling in many countries last autumn that the “oppressive weight of anxiety had become pervasive”.

The recent financial crisis started with problems in the US subprime market. It was difficult to foresee that problems in a small segment of one market could have such dramatic consequences for financial markets the world over. But the financial system had changed.

Chart: Quote by Ricardo J. Caballero and Pablo Kurat

Today we can see that the crisis was amplified by the surprise at how closely financial markets are interconnected. (4) Losses on high-risk US subprime mortgages triggered general distrust in the financial system. Financial institutions began to doubt their counterparties. They did not know whether counterparties held sufficient capital to cover any losses. Even worse, they were uncertain whether counterparties' counterparties would be strong enough to withstand losses. So they stopped lending to each other. In the interwar period, as described by Rygg, depositors were responsible for the flight of funding. This time, that role was taken by banks' lenders. Confidence had evaporated.

Chart: Norwegian banks gross stock of non-performing loans

Many banks worldwide had to take losses. The liquidity crisis turned into a solvency crisis. Banks in Norway have also noted that borrowers have experienced problems servicing their loans. However the increase in non-performing loans has been modest compared with the banking crisis at the beginning of the 1990s.

Chart: Unemployment

Output in Norway fell through two successive quarters and although unemployment picked up last autumn, it is still lower than in previous downturns. Norwegian banks felt the impact of the turnaround in the economy, but government measures have prevented the liquidity crisis from becoming a crisis in the real economy. Norwegian banks primarily experienced a liquidity crisis and not a solvency crisis. The Icelandic bank Glitnir's Norwegian subsidiary received a short-term loan from the Norwegian Banks' Guarantee Fund. But there has never been any risk that distressed banks would overstretch our fund-based guarantee scheme.

Lessons from the crisis – the work ahead

The global financial crisis has revealed weaknesses in the financial system.

Chart: Proposals to strengthen banks' capital base and liquidity

The Basel Committee on Banking Supervision and the EU are working on proposals for revising the regulatory framework and introducing new regulations. Banks will be required to build up larger capital and liquidity buffers and to strengthen the quality of bank capital. The proposals also aim to reduce the procyclicality of bank behaviour. Banks should build up buffers in good times that can be drawn on in periods of stress. The authorities will focus in particular on methods of regulating systemically important banks.

Bank capital

Banks play a key role in ensuring that depositors' savings are managed securely, in extending credit and providing payment services. Banks are commercial enterprises, but they are also similar to public utilities. (5) Banks differ from other firms in that they fund their activities through deposits from customers who do not know the extent of risk taken by banks. Since a collapse in the banking system would have very severe consequences, the authorities have a

strong interest in ensuring that banks operate in a responsible manner. Banks are therefore subject to stricter regulation than other companies and are supervised by the authorities.

In principle, banks diversify risk by extending many small loans to firms, local government and households. In isolation, this implies that banks can operate with far lower equity capital than other companies. When times are good, banks will have the incentive to deplete their capital base and take higher risk in order to “put equity capital to work”.

Chart: Norwegian banks' Tier 1 capital ratio

Banks are therefore required to hold capital in proportion to their risk-taking, the so-called minimum Tier 1 capital requirement. Tier 1 capital is composed of equity capital and other capital that can be used to absorb losses on a going-concern basis. Risk-weighted assets, i.e. the calculation basis for the Tier 1 capital requirement must reflect the risk exposure of the bank. A bank's exposures are therefore assigned different risk weights. Experience shows that banks' losses on residential mortgage loans, which are highly collateralised, are lower than on corporate loans. Risk weights are therefore lower for residential mortgage loans than for corporate loans.

The financial crisis has revealed shortcomings in the definition of the minimum Tier 1 capital requirement and changes will be made in both the numerator and the denominator.

The quality of Tier 1 capital will be subject to stricter requirements. Risk weights for some exposures will be higher, with improved risk coverage for trading book and off-balance sheet exposures. The minimum Tier 1 capital ratio may also be changed.

There is no simple answer to the question of the appropriate capital level for a bank. In order to quantify risk, banks have developed risk models. Risk can be calculated using advanced methods, but the figures on which the calculation is based too often reflect the current economic situation. The possibility that the situation can change abruptly is not sufficiently taken into account. It became evident during the financial crisis that risk measured beforehand in a model can differ substantially from the actual outcome observed.

Due to risk model uncertainty, many investors prefer to take account of a bank's ratio of equity capital to total assets. The Basel Committee has proposed the introduction of such a simple, non-risk based measure, i.e. a maximum leverage ratio requirement (minimum equity ratio requirement). A minimum equity ratio requirement also limits the number of times banks can leverage their equity. With a minimum equity ratio of 5 per cent, for example, equity can be leveraged 20 times.

Today, capital requirements for residential mortgage loans in particular are very low. The risk models employed by Nordic banks seem to apply risk weights for residential mortgage loans that are as low as between 7 and 15 per cent. Banks seeking to “put equity capital to work” are under very strong pressure to increase leverage. A risk weight of for example 10 per cent for residential mortgage loans with a minimum Tier 1 capital requirement of 4 per cent would mean that NOK 1 in equity capital could be behind as much as NOK 250 in residential mortgage loans. Introducing a leverage ratio requirement could have the effect of curbing banks' debt financing and risk-taking.

Banks in Canada are subject to both a strict national capital adequacy requirement and a maximum leverage ratio. Banks are required to maintain a minimum Tier 1 capital ratio of 7 per cent. The leverage ratio is defined individually for each bank. In principle, the leverage ratio should not be greater than 20. (6) Canadian banks have weathered the financial crisis well, also because they were less reliant on market funding than banks in various other countries. (7)

Chart: Bank equity capital

At the end of the 1800s, the equity ratio for banks in Norway was about 12 per cent. Over the years, this ratio has gradually decreased, falling to its lowest level during the banking crisis at the end of the 1980s. Government bank rescue measures and recapitalisation brought the ratio up to 8 per cent. Equity capital has not fully kept pace with growth in lending since then and the equity ratio has declined to 6 per cent. Today, the ratio is even lower than it was following the banking crises in the 1800s and the beginning of the 1900s.

Chart: Norwegian banks' equity capital as a percentage of total assets and Tier 1 ratio

For a number of Norwegian banks, the ratio of equity capital to total assets is lower than 5 per cent.

Strengthen the quality of capital

Under the current rules, up to 50 per cent of a bank's Tier 1 capital can consist of hybrid instruments, which are a combination of debt and equity. The remainder must comprise common equity only. Perpetual capital securities and other hybrid instruments cannot be used as easily as equity capital to absorb losses on a going concern or at liquidation. The possibility of limiting Tier 1 capital to common equity is now being considered.

Hybrid instruments make up a large share of Tier 1 capital in many European banks and many banks must strengthen the quality of capital. There is therefore a risk that political processes will prevent any significant increase in the minimum Tier 1 capital requirement.

Chart: Norwegian banks' Tier 1 capital

The Norwegian authorities have been restrictive in their approval of hybrid instruments. The Financial Supervisory Authority of Norway – with strong support from the Ministry of Finance during the last 20 years – has ensured that banks have been required to fully consolidate all assets when calculating capital requirements. Since established practice in Norway is already strict, the new rules may not in themselves affect banks to any great extent.

Capital and macroprudential supervision

Chart: The macro- and microprudential perspectives

A lesson learned from the financial crisis is that regulation of financial institutions should seek to limit risk not only in each bank, but also in the financial system as a whole. Banks' growth strategies seldom take into account that one bank's behaviour can affect other banks and the financial system. The interlinkages between financial institutions amplify risk in the financial system. In our assessments, it is important to be aware of any build-up of systemic risk.

Residential mortgages provide a good illustration of the difference between the individual risk for a bank and systemic risk. Even during the 1990s banking crisis, Norwegian banks' losses on residential mortgages were low. Today's low risk weights for residential mortgages provide strong incentives for banks to extend these mortgage loans. However, housing market fluctuations, which go hand in hand with shifts in saving behaviour, are nonetheless a source of business cycle fluctuations and substantial losses when banks have to write off loans to firms selling goods and services to households.

Chart: House prices in selected countries

The Norwegian housing market is vulnerable. Both a high level of tax incentives for home ownership and a large volume of adjustable-rate mortgages contribute to wide fluctuations in activity and prices. [\(8\)](#) The rise in house prices in the past two decades has also been very strong compared with countries where housing bubbles have burst.

To finance strong growth in residential mortgages, banks have to rely to a great extent on borrowing, thereby increasing their vulnerability to a liquidity squeeze. Thus, low risk weights for residential mortgages also lead to higher liquidity risk in the banking system as a whole.

It is important to be aware of the similarities between developments in the Norwegian housing market and bank lending and developments in the countries most severely affected by the crisis. In Norway, the lead-up was similar with rising house prices, accelerating credit and consumption growth and lower saving. Interest rate setting managed to stabilise developments somewhat. Economic policy was perhaps more successful in Norway and the government had larger buffers. But the soft landing in the Norwegian economy so far is also attributable to a good measure of luck, not least as oil prices rapidly rebounded after falling from USD150 per barrel to 35.

Stricter requirements for systemically important banks

The bankruptcy of the US investment bank Lehman Brothers rapidly led to a general crisis of confidence in the financial system. Central banks and government authorities implemented extensive measures to mitigate the impact of the crisis.

Chart: Quote from the G7 meeting in Washington, October 10, 2008

At a meeting in Washington on 10 October 2008, the G7 countries stated that they would protect their systemically important institutions. [\(9\)](#) This was a decisive measure.

But the social and economic costs have been considerable, particularly reflected in the dramatic fall in output and employment in most advanced economies. Moreover, government support for banks has been costly in many countries.

The crisis has shown that regulation of systemically important banks should be considerably more stringent. This can be achieved by introducing overall higher capital requirements or seeking to restrict growth in these institutions by imposing stricter requirements than for other banks. In Switzerland, it has been decided that the capital adequacy requirement for the country's two large banks in good times will be twice the international minimum requirement. To prevent a procyclical impact, this target will apply as of 2013. [\(10\)](#)

Chart: Banks' assets in billion of NOK and Tier 1 capital ratio

In Norway and other countries, all banks are subject to the same capital adequacy requirements, but the large banks have generally chosen to leverage their capital further than other banks. This is not advisable.

The UK government intends to propose a plan that would require large banks to elaborate a plan for orderly unwinding, often referred to as "living wills", stating which parts of a bank's operations will be sold if a distressed bank is compelled to raise fresh capital. [\(11\)](#) The authorities will then be able to split up or wind down banks quickly, whatever their size or complexity.

But an additional economic cost is incurred when governments rescue banks. This may have adverse effects on bank behaviour. In the field, this is referred to as moral hazard.

Chart: Moody's on DnB NOR Bank's rating

I can provide an example. A creditor may, for example, assume that big banks are in practice "insured" by the authorities. This will also be reflected in rating agencies' assessments. Banks considered systemically important receive therefore a higher rating.

Chart: Risk premiums on Norwegian senior bonds

As a result, funding costs for these banks are lower, allowing them to increase leverage and expand even further.

Reducing the procyclicality of bank behaviour

Both international studies and Norges Bank studies indicate that the current capital adequacy rules, Basel II, amplify the procyclical effects arising from bank behaviour. [\(12\)](#) During an expansion, bank earnings are high. Ample supply of capital leads to high credit growth. In a downturn, loan losses increase and erode the banks' capital. Banks respond by tightening lending. Bank behaviour therefore amplifies fluctuations in economic activity.

Chart: Minimum Tier 1 capital requirements in a downturn

An analysis by Norges Bank sheds light on the procyclical effects of the Basel II capital requirements. The analysis is based on a path where the Norwegian economy is exposed to a severe disturbance. During a downturn, the debt-servicing capacity of borrowers declines and the value of bank collateral falls. The risk of bank losses increases. This leads to an upward adjustment of the risk weights used to calculate the minimum capital requirement under Basel II. The minimum capital requirement increases. The shorter the data series applied by banks in their risk models are, the more the capital requirements fluctuate with business cycles. The effects may be considerable. Higher capital requirements for banks in a downturn will amplify the downturn. In an upturn, the effect will be the opposite.

If banks apply a time series that is longer than 20 years, which includes at least one pronounced economic downturn, the effect on the minimum capital requirement during a downturn under Basel II will not be as strong as when the banks use short series. Risk weights calculated on short series that do not include downturns are thus of little value.

There are also other approaches to reducing the procyclicality of bank behaviour.

In Spain, banks have had to provision for potential losses through the cycle. They were required to provision using non-tax deductible amounts for future losses at the time the loan was extended. Such dynamic provisioning has probably functioned effectively also because this system did not require that the supervisory authorities or the banks themselves had to decide that capital should be increased.

Nordic cooperation

Chart: Domestic credit to enterprises from banks and mortgage companies in Norway

Equal competition considerations require that banking rules are practiced as evenly as possible across countries.

For Norway, there are limits to how effectively regulations specific to Norway will be because we are part of the Nordic banking market. The Nordic region, however, is a well-suited region for an active use of regulatory measures. Nordic banks engage in cross-border operations. At the same time, they have little activity outside of the Nordic region. Nor are foreign banks from other regions large in this region. The conditions are therefore in place for effective cooperation in the area of banking regulation and crisis management between the political authorities, supervisory authorities and central banks.

In the growth period from 2004 to 2008, foreign banks expanded rapidly in the Nordic market, but during and after the crisis they curbed their activity. I am afraid it can be said that they have amplified fluctuations in Norwegian markets. However, we assume the decline in their market share over the past year is attributable to their being harder hit by the international crisis than Norwegian banks.

Liquidity management

More capital is important for the solidity of the banking sector. However, we must not forget that the turbulence first translated into a liquidity crisis, as was the case for the UK bank Northern Rock in autumn 2007 when depositors rushed to withdraw their savings.

Chart: Funding sources for Norwegian banks

For Norwegian banks, the crisis has essentially been a liquidity crisis. Norwegian banks were affected because they became dependent on market funding. The financial crisis has revealed that substantial short-term money market funding is risky. When it comes from foreign markets, the risk of funding shortfalls increases. In the mid-1980s, Norwegian banks also borrowed heavily in foreign markets. In spring 1986 – following a sharp fall in oil prices – confidence in the Norwegian economy plummeted, and liquidity flowed out of the country as was the case in autumn last year.

The funding source that is considered to be the most stable, deposits, has become less important over time. It is our assessment that the funding of Norwegian banks is a structural problem. When the financial crisis is behind us, we expect banks to give increased weight to deposits and long-term loans as funding sources.

The maturity of banks' market funding should be longer than it was before the financial turbulence. During the financial crisis, investors were reluctant to provide long-term funding and required high risk premiums. Prospects for banks in general have now improved and risk premiums have declined. The strengthening of banks' equity capital is helping to reduce the risk facing bondholders. Bond premiums are nevertheless likely to remain clearly higher than prior to the financial crisis. Investors cannot be certain that government will cover bond investors' losses when banks' capital evaporates during the next banking crisis, c.f. the planned UK proposal to impose a "living will" on the large institutions.

A favourable source of funding for banks is covered bonds, referred to as OMF in Norway. These debt instruments are secured by sound collateral backed by residential mortgages, public loans or commercial property loans. The risk premium on these loans is therefore lower than on ordinary bank bonds. The covered bond market was also heavily impacted by the financial crisis. Activity in the secondary market has been low, and investors showed little interest in new issues. The swap arrangement introduced by the Norwegian authorities eased the situation for banks. The market has recently improved.

Chart: Outstanding covered bonds

Covered bonds have a long tradition in other countries' housing markets. As manager of the Government Pension Fund – Global, Norges Bank has taken initiative to strengthen the European covered bond market. Together with several other large investors and support from a number of central banks, the 'Covered Bond Investor Council' was established. One of the main aims of the Council is to improve liquidity in the covered bond market, through for example more transparent and standardised borrowing terms.

The Norwegian covered bond market is new and small compared with that of other countries. Covered bonds are well suited for pension portfolios and other assets with a long time horizon. Further ahead, there should therefore be good possibilities for Norwegian banks to procure long-term funding. Since residential mortgages usually feature a long maturity, bonds should also have a long maturity. Before the financial crisis, mortgage-backed covered bonds were normally issued with a maturity of five to ten years in European countries. [\(13\)](#)

But this source of funding also has its limitations. The larger the share of borrowing that has first claim on banks' assets is, the higher the risk becomes for other lenders and for depositors with savings above the guaranteed amount. The risk for the Norwegian Banks' Guarantee Fund may increase if covered bonds become too dominant.

The Basel rules require capital for banks' assets, but do not stipulate how the assets are to be financed or their liquidity. It is now being considered whether common requirements should be introduced as to the amount of liquid assets a bank must hold to survive a stress situation over a period of for example 30 days without drawing on loans in the central bank. In addition, there will be funding stability requirements. [\(14\)](#) The Basel Committee is expected to make concrete proposals in the course of the year.

One of the first countries to introduce stricter requirements is the UK, where banks will be required to apply a stress situation with a duration of three months. [\(15\)](#)

Assets that would qualify as sufficiently liquid should be easily sold in the market – also in stress situations. The financial crisis showed that many assets held by banks for liquidity purposes were not particularly liquid. In the UK, the authorities will only accept that banks' liquidity buffers include government bonds of high quality and deposits in the central bank.

Norges Bank's macroprudential supervision – use of stress tests

Through recent decades, financial stability analyses have become increasingly important in many central banks. An important element in the analysis is to assess the vulnerability of the financial system to macroeconomic disturbances. Stress tests are commonly used in this exercise. Norges Bank uses stress tests to assess the consequences for Norwegian banks of several risks having a negative impact simultaneously.

We will develop this tool further and take account of the experiences of other countries. We will seek to be transparent about the assumptions and results.

Asset prices, credit and monetary policy

There is a division of roles in economic policy. Fiscal policy, through growth in public spending, influences the real krone exchange rate and the size of the international exposed business sector in the long term. Monetary policy steers inflation in the medium and long term and can in addition contribute to smoothing fluctuations in output and employment.

Chart: Flexible inflation targeting

House prices in Norway have risen sharply and probably excessively.

We must take account of developments in equity prices and property prices when projecting inflation and output. Norges Bank's interest rate setting does not rely solely on one simple rule. Instead, we seek to take account of all factors that influence inflation and output in the medium term, and the key policy rate is set on the basis of an overall assessment. Asset prices such as house prices, the exchange rate and credit growth therefore have a bearing on Norges Bank's interest rate setting. A written formulation of Norges Bank's monetary policy reaction function would be fairly comprehensive and include all the variables that are considered.

However, a reaction function must not be confused with the monetary policy target – our target function. The fact that we give weight to variables such as the exchange rate, house prices and credit growth in interest rate setting does not imply that there are specific target for these variables. The operational target for monetary policy is annual consumer price inflation of close to 2.5 per cent over time.

Interest rate setting in a small, open economy can be particularly challenging in periods of strong credit growth and a wide interest rate differential against other countries. A tightening of monetary policy in Norway specifically aimed at curbing property prices and credit growth can result in a rising krone exchange rate, a weaker labour market and excessively low inflation.

Should we seek to avert bubbles in the housing market even when medium-term inflation prospects are moderate? On this point, it is our judgement that a distinction must be made between giving greater weight to credit growth and house price inflation in the reaction function and defining house price inflation as an independent monetary policy objective. So-called "leaning against the wind" would not require adjustments to Norges Bank's approach, bearing in mind that our reaction function already gives weight to asset price movements and credit growth. [\(16\)](#) Should central banks also set explicit targets for asset prices? In our judgment the answer is no, but we should probably apply a fairly long horizon for achieving the target so that we seek to take account of any imbalances that might disturb activity and inflation further ahead.

Household behaviour in the housing market is a considerable economy policy challenge. This is primarily because demand for housing and housing loans is heavily subsidised by the tax system and loan supply is marked by the near-absence of an equity capital requirement for providing housing loans.

Exit strategies

In line with other countries, the Norwegian authorities implemented extensive measures to improve banks' access to liquidity and longer term funding after the Lehman Brothers failure. This contributed to improved funding conditions for Norwegian banks. As the situation in financial markets returns to normal, the measures will be wound down.

Recently, we have seen an improvement in money and credit markets. We have therefore started reducing the use of unconventional measures.

In recent months, liquidity has not been supplied through currency swap lines or liquidity in foreign currency. Loans at long maturities have not been provided since February – several of the loans have now matured.

As markets are now returning to normal, liquidity supply will be adjusted so that money market rates reflect the key policy rate. We want the banks to redistribute liquidity in the interbank market.

Chart: Bank liquidity

The underlying structural liquidity in the banking system, i.e. liquidity excluding Norges Bank's liquidity provision, has been negative in recent years.

Structural liquidity is influenced by ingoing and outgoing payments via the government's account in Norges Bank and is projected to increase ahead, primarily because the government can partly finance increased lending to state banks, payments from the Government Bond Fund and the State Finance Fund and share subscriptions by drawing on their large deposits in Norges Bank. The banking system's demand for central bank loans will then decrease considerably.

Chart: Risk premiums on Norwegian covered bonds

The swap arrangement involving covered bonds in exchange for government securities has made a considerable contribution to securing banks' long-term funding. This spring we saw that the covered bond market started to reopen. The minimum price in the swap arrangement is thus adjusted to the interest rate forming in the market. The arrangement will be phased out in the course of autumn.

Norges Bank temporarily eased its collateral requirements to facilitate banks' access to borrowing in the central bank. Banks' borrowing needs are falling, and a good supply of high-quality collateral, particularly Treasury notes, has increased markedly.

Chart: Changes in collateral for loans in Norges Bank

We are of the view that the conditions are now appropriate for reversing these temporary changes. We will also tighten the collateral requirements. Today the planned changes have been circulated for comment. The acceptance of new securities eligible as collateral under the temporary rules is now discontinued. Securities that were already accepted as collateral under the temporary rules can normally be used as collateral until they mature or up to no later than 15 February 2012 when the last long-term fixed-rate loan in Norges Bank has matured.

We have also announced a change in the so-called bank quota. Under today's rules, 35 per cent of a bank's borrowing facility in Norges Bank can be based on collateral in bonds issued by other Norwegian banks. It is a disadvantage that the provider of the collateral and the

collateral are from the same sector. At the same time, it is a competitive disadvantage for Norwegian banks when their issues are covered by the quota, while this is not the case for issues by for example Swedish and Danish banks. Therefore, from 1 December 2010 we will include foreign bank issues in the bank quota without increasing the percentage rate of 35. From 15 February 2012, we will discontinue access to using bank issues as collateral for loans.

Covered bonds will still be eligible as collateral, also when the bonds do not have a credit rating and when they are issued by a bank's own mortgage company. We assume that this will also contribute to developing the Norwegian covered bond market.

Conclusion

Chart: Bankruptcy rate during and following banking crises in Norway

Allow me to conclude.

Developments in recent months indicate that the financial crisis in Norway will not develop into a real economic crisis. We have not experienced a bank solvency crisis as was the case 20 years ago. Unless the Norwegian economy is exposed to new major shocks, we expect the bankruptcy rate for Norwegian enterprises to stabilise or to be at about the same level recorded in the moderate downturn at the beginning of this decade.

Nevertheless, the crisis has revealed weaknesses in the regulatory framework for banks, also in Norway.

It is our hope and belief that international cooperation will set the stage for an improved regulatory framework and systems. For us in Norway, it is important that the Nordic countries can stand together.

Thank you for your attention.

Footnotes

1. See Knutsen, Sverre and Gunhild J. Ecklund (2000): "Vern mot kriser? Norsk finanstilsyn gjennom 100 år (Defence against crisis? 100 years of Norwegian financial supervision)", p.95
2. Rygg, Nicolai (1950): Norges Bank i mellomkrigstiden (Norges Bank in the interwar years), Gyldendal Norske Forlag, p. 98
3. Sejersted, Francis (1973): Ideal, teori og virkelighet. Nicolai Rygg og pengepolitikken i 1920-årene (Ideal, theory and reality. Nicolai Rygg and monetary policy in the 1920s) Cappelen, p. 51
4. See for example Caballero, Ricardo J. and Pablo Kurlat (2009): "The 'Surprising' Origin and Nature of Financial Crises: A Macroeconomic Policy Proposal". Paper presented at the Federal Reserve Bank of Kansas' Jackson Hole Symposium
5. For a discussion of the role of banks in the economy, see King, Mervyn (2009): "Finance: A Return from Risk", Bank of England, speech to the Worshipful Company of International Bankers, Mansion House

6. In more precise terms, the sum of a bank's assets and certain off-balance sheet items must not be greater than 20 times capital. For banks that are "in good standing" and that satisfy certain requirements, this multiple can increase to 23. See Financial System Review, Bank of Canada, June 2009. In the US, the ratio of Tier 1 capital to total adjusted assets must be at least 3 per cent for banks rated "strong" and 4 per cent for all other banks. The ratio applies on a consolidated basis. See "Background Note: Banking and the Leverage Ratio", World Bank, <http://crisistalk.worldbank.org/2009/03/banking-and-the-leverage-ratio.html>
7. See Northcott, Carol Ann, Graydon Paulin and Mark White (2009) "Lessons from Canada", Quarterly Journal of Central Banking, Volume XIX, No. 4, May, and Ratnovski, Lev and Rocco Huang (2009): "Why Are Canadian Banks More Resilient?" IMF Working Paper No. 152, July
8. See Van den Noord, Paul (2005): "Tax Incentives and House Price Volatility in the Euro Area: Theory and Evidence", *Économie Internationale* 101, pp.29-45. This study shows that house price volatility is higher in countries where tax regimes favour owner-occupied housing. See also IMF (2004): World Economic Outlook, September, p.81. The article shows that house price volatility is higher in countries with predominantly adjustable-rate mortgages.
9. IMF (2008): "Communiqué of the International Monetary and Financial Committee of the Board of Governors of the International Monetary Fund", 11 October
10. In bad times, the capital adequacy requirement is reduced to 1.5 times the international minimum requirement. See Swiss Federal Banking Commission (2008): "SFBC and large banks agree to set higher capital adequacy targets and introduce a leverage ratio", press release 4 December .
11. See Myners, Paul (2009): "Developing a New Financial Architecture: Lessons Learned from the Crises", speech at the Financial Times Global Finance Forum, 18 September, HM Treasury. The same theme is also dealt with in Bair, Sheila (2009): "Remarks by FDIC Chairman Sheila Bair to the International Institute of Finance, Istanbul", FDIC, 4 October.
12. See Andersen, H. (2009), "Norwegian Banks in a Recession: Procyclical Implications of Basel II", Working paper 2009/4, Norges Bank, and Kashyap, A.K. and Stein, J.C. (2004), "Cyclical Implications of the Basel II Standards", *Economic Perspectives*, Federal Reserve Bank of Chicago, Quarter 1, p. 18-31
13. See European Central Bank, December (2008): "Covered Bonds in the EU Financial System",
14. Basel Committee on Banking Supervision (2009): "Comprehensive Response to the Global Banking Crisis", press release of 7 September
15. Financial Services Authority (2009): "Strengthening Liquidity Standards", Policy Statement 09/16, UK October
16. See for example White, W.R. (2009): "Should Monetary Policy "Lean or Clean"?", Working paper no.34, Federal Reserve Bank of Dallas