Norges Bank's role in the event of liquidity crises in the financial sector

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Central banks have traditionally had a role as lender of last resort (LLR). This means that the central bank can supply extraordinary liquidity to an individual bank or the banking system when demand for liquidity cannot be met from other sources. This role has changed over time for Norges Bank. In the course of the past 30 years, the stance on extending loans on special terms (S-loans) to banks has become more restrictive. This is partly attributable to the liberalisation of credit markets and increased opportunities for banks to raise funds in the market. Following the banking crisis, Norges Bank's attitude to providing extraordinary liquidity for the individual bank has remained unchanged. The Executive Board's most recent review of the Bank's role as LLR, in March 2004, confirms that extraordinary provision of liquidity should be reserved for situations in which financial stability may be threatened without such support. The review also clarified the Bank's reaction to different types of liquidity problems and its criteria for granting S-loans.

1. Introduction

Through its conduct of monetary policy, Norges Bank normally ensures that the liquidity in the banking system is such that the shortest money market rates remain close to the key rate. In crisis situations, the supply of liquidity through the Bank's ordinary lending facilities may rapidly prove to be inadequate. The central bank must then consider extraordinary measures. A distinction can be made between a liquidity shortage for the individual bank, and for the banking system as a whole.

In the event of a shortage of liquidity in the market, for example as a result of a general loss of confidence in a country's economy and banks, or a credit crunch in international capital markets, both short-term and long-term rates may rise and asset prices may drop sharply. Such crises may therefore have macroeconomic consequences, and the central bank may have a special responsibility for helping to avert a crisis by providing an extraordinary supply of liquidity.

An individual bank may have liquidity problems even under normal market conditions, for example as a result of a loss of confidence on the part of lenders. Central banks do not normally have a responsibility to resolve liquidity problems in such cases, unless there is a possibility of severe knock-on effects for other banks (through the interbank and payment systems) and the economy in general. When crises in one or more banks are attributable to weak risk management and a decline in financial strength, other measures will also be necessary.

In Norway, part of the Ministry of Finance's general responsibility for economic policy entails ensuring that the country has a smoothly functioning financial industry. The Ministry's responsibility also includes legislation pertaining to the area of finance. In crisis situations, the Ministry may consider whether crisis-hit banks should be placed under public administration, be supplied with capital/subordinated loan capital from the state, or whether other crisis measures should be implemented. Kredittilsynet (the Financial Supervisory Authority) is responsible for overseeing the individual institution and has been granted broad powers to intervene in the event of crises or potential crises by issuing requirements and instructions to the individual institution.

Some general remarks about the role of LLR are presented in Section 2. Section 3 contains a more detailed account of how this role has developed over the last 30 years in Norway. Section 4 describes the situation today, while Section 5 presents a summary.

2 The role of LLR and Norges Bank's instruments

2.1 Theoretical considerations

In the 1800s, Thornton (1802) and Bagehot (1873) outlined the elements of the central bank's LLR policy. The key elements were that in the event of liquidity crises, the central bank should be prepared to supply liquidity on a large scale, against provision of satisfactory collateral and at a high interest rate. Satisfactory collateral was considered necessary so that central banks did not have to conduct a credit assessment in each individual case. In practice, the posting of collateral took the form of banks discounting bills of exchange in the central bank. The central bank was able to increase the supply of liquidity by accepting several types of bills (for example bills with a longer residual maturity than was normally accepted). The cost to the central bank was that a broader set of bills normally meant poorer securities quality and a higher credit risk. A high interest rate was viewed as necessary to reduce moral hazard in

[1] I should like to thank Morten Jonassen, Audun Grønn, Arild J. Lund, Kristin Gulbrandsen, Thorvald G. Moe, Bjørn Bakke and Henrik Borchgrevink for useful input.

banks and to encourage market-driven solutions. It might also be necessary to maintain a high interest rate in order to avoid flight of capital and outflow of gold, which, under the gold standard (and fixed rate regimes generally) could lead to a decline in the money supply and provision of credit, deflation and economic downturns. Although these recommendations were made under a different regime in terms of exchange rate system, regulation and oversight, they still apply.[2]

Liquidity problems may arise for many reasons, in the form of a liquidity shortage for an individual bank or the banking system as a whole. Bagehot and Thornton appear to have been of the opinion that the central bank should primarily supply liquidity to the market by general means, and let the interbank market handle the distribution of the liquidity.[3] This is because banks that are sound and have good risk management systems will normally enjoy confidence in the markets, and will therefore also have adequate access to liquidity.[4] If the central bank grants extraordinary loans to the individual bank too frequently, lenders to banks may have less incentive to monitor the banks' financial situation and may provide credit too cheaply. This may induce banks to take too much risk. Reliance on extraordinary support from the central bank may also make banks less motivated to find market solutions in the event of liquidity problems. The result may be a less stable banking system.

However, the possibility cannot be excluded that even sound banks may suffer a loss of confidence on the part of depositors and other creditors because they are less well informed about the quality of banks' assets than the banks' management. This is referred to as 'asymmetric information'. When liquidity problems compel a bank to sell its assets, creditors may incur substantial losses. In such cases it may be maintained that the central bank should grant extraordinary loans to the crisis-hit bank in order to avoid an ineffective winding up of a bank that is fundamentally sound. In practice, however, it is very demanding for the central bank or supervisory authorities to evaluate the financial strength of a bank in a short space of time, both because of asymmetric information and because the bank itself does not have full information. The central bank therefore risks incurring a loss if it provides a loan and the market's assessment later proves to be well-founded.

A basic principle is that central banks should not extend loans to banks with solvency problems. In principle, such problems should be solved by the owners supplying fresh capital, or through mergers or acquisitions by private-sector operators. In countries with guarantee funds with a mandate to supply risk capital, as in Norway and the US, the guarantee funds come in as the second line of defence. If a bank is not supplied with sufficient capital to enable it to continue operating in a prudent manner, it will have to be wound up. In Norway, financially weak banks may be placed under public administration. In the event of a systemic crisis, however, public administration may not be very appropriate, because it may have negative consequences for overall provision of credit and the payment system. In such cases the government may intervene as the ultimate authority and supply capital to crisis-hit banks, or take other steps to avert a crisis.[5]

If problems in a bank are discovered early and handled rapidly and efficiently, the need for the central bank to supply extraordinary liquidity or for government authorities to provide solvency support will be less or non-existent. Calculations show, for example, that a swifter, more efficient handling of the crisis in US savings and loan institutions in the 1980s could have resulted in a considerable reduction in costs to the government (Goodfriend (2001)). Instead, the authorities allowed the banks to continue operating with limited financial strength, with the result that they increased their risk (gambled for resurrection), and their financial strength deteriorated further.

2.2 What instruments are available to Norges Bank?

Although a great deal has been written about the role of LLR, no clear, consensual definition of the role of LLR exists either in theoretical work or in practice. This article takes as its starting point Norges Bank's established lending arrangements and then describes the Bank's policy regarding the injection of extraordinary liquidity into an individual bank or the banking system as a whole.

Norges Bank's lending arrangements can be divided into two main groups:

- General:
  - Monetary policy instruments (fixed-rate loans and deposits and currency swaps)
  - Standing facilities for settlement of interbank claims (intraday loans/sight deposits) via Norges Bank's settlement system (NBO)
- Loans on special terms to a bank (S-loans)

Norges Bank has distinguished between general loan arrangements and S-loans since the Credit Act was introduced in 1965. However, the structure of the arrangements has varied over time.

The aim of Norges Bank's liquidity policy today is that the banking system as a whole shall have substan-

[2] See Freixas et al. (1999) and Dalen and Lund (2001) for a review of the literature on the role of LLR.

[3] This is a view promoted by Humphrey and Keleher (2002) among others.

[4] According to the acts relating to commercial and to savings banks, banks shall ensure that they are able at all times to meet their liabilities when they fall due. Report no. 6 from the Banking Law Commission (NOU 2001: 23, Activities of financial undertakings) proposes changing to qualitative regulation that places emphasis on good liquidity management practice.

[5] The Basel Committee on Banking Supervision writes the following (BIS (2002), p. 35): "Public funds are only for exceptional circumstances. Public funds for the resolution of weak banks may be considered in potentially systemic situations, including the risk of loss or disruption of credit and payment services to a large number of customers. An intervention of this nature should be preceded by a cost assessment of the alternatives, including the indirect cost to the economy".

tial sight deposits in the central bank at the end of the day. Should a need to borrow arise, Norges Bank will supply the liquidity that is necessary by means of a fixed-rate loan, or through currency swap agreements. Norwegian banks also have access throughout the day to liquidity (intraday loans) via standing facilities in Norges Bank's Settlement System (NBO). Liquidity is always supplied against collateral in specified interest-bearing securities.

A requirement of full provision of collateral also used to be the rule earlier, but from 1965 the requirement that collateral be deposited in Norges Bank was relaxed and after a while abolished. Instead, it was required that the borrowing bank must have specified securities in its portfolio as a basis for borrowing from Norges Bank.

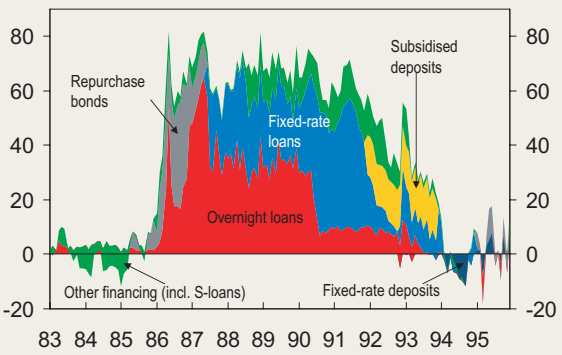
In connection with the foreign exchange crisis in spring 1986, all requirements relating to the furnishing of collateral for banks' automatic borrowing facility in Norges Bank (overnight loans) were abolished. Norges Bank then supplied a substantial amount of liquidity without collateral in order to avoid a sharp increase in money market rates (see Chart 1).[6] In addition liquidity was supplied through repurchase agreements and currency swaps, i.e. banks made government bonds, bonds issued by state lending institutions and foreign exchange available to the central bank in exchange for liquidity for an agreed period. The volume of repurchase agreements with bonds was reduced in 1987, however, because reductions in the primary reserve requirement meant that more bonds had to be used to meet the liquidity requirements in the banking acts (Norges Bank (1987), p. 15). On 1 June 1987, Norges Bank introduced F-loans (fixed-rate loans that cannot be terminated). Fixed-rate loans were introduced partly to buffer banks' borrowing costs, and hence their lending rates, against short-term fluctuations in money market rates as a result of turbulence in foreign exchange markets. Like overnight loans, fixed-rate loans were issued without collateral. The supply of fixed-rate loans increased sharply in 1987.

As a result of the exchange rate crisis, Norges Bank was left with large, unsecured overnight loans and fixed-rate loans to banks when their solvency problems began in 1987. The requirement of collateral was difficult to re-introduce in the next few years, partly because the loans were large and partly because securities holdings that could be used by banks as collateral were limited. The banks' high loans in Norges Bank were first reduced in 1993. Once the loans were smaller, it was easier for Norges Bank to re-introduce a requirement of collateral. The requirement of partial collateral for overnight loans was introduced in 1993. The requirement was gradually stepped up, and since 1995 has been 100 per cent. When intraday loans were introduced in connection with the transition to a continuous settlement system in November 1987, the requirement of full collateral was adhered to less strictly for the first year after the introduction. Collateral for fixed-rate loans was introduced in 1999.

The requirement that full collateral be posted is necessary to prevent Norges Bank incurring risk. At the same time, experience from 1986 shows that the question of approving a different type of security (for example equities) or waiving the requirement of collateral in the general loan schemes may easily arise in crisis situations. Section 3 of the current regulation concerning banks' right to loans and deposits in Norges Bank states: "Norges Bank may issue more detailed conditions for accepting or rejecting collateral, and in special cases may approve other collateral or depart from the requirement for collateral."

In the event of liquidity problems in an individual bank, Norges Bank can provide loans on special terms. Section 19, third paragraph of the Norges Bank Act states that: "When warranted by special circumstances, the Bank may grant credit on special terms." Pursuant to Section 22, first paragraph, the Bank may also extend loans and other types of credit to enterprises in the financial sector other than banks "in special cases".

Chart 1 Banks' funding from Norges Bank. Monthly average. In billions of NOK



Source: Norges Bank

3 Norges Bank's evolving role as lender of last resort

3.1 General statements

Norges Bank's role in the financial sector has changed over the past 30 years. Prior to deregulation in the late 1970s, Norges Bank had many responsibilities relating to credit policy in addition to monetary policy. Interbank, money and capital markets were not very well developed, and banks experienced liquidity problems more often than they do today. This happened particularly in periods with a tight credit policy and in

[6] Skånland (1991) writes the following about this: "Up to 1986, it was nevertheless a condition that a paying bank had securities in its portfolio that could form collateral for a loan. Following the exchange rate turbulence the same spring, this precondition had become unrealistic, and had to be abandoned if it was to be possible to maintain the interest rate level that had been established." Skånland (1991, 2004) describes why the interest rate was not raised when the outflow of foreign exchange began in late 1985.

banks that did not adhere loyally to the credit policy guidelines. A number of instruments were used by Norges Bank to meet banks' liquidity needs (for example term deposits and S-loans). The statement of Central Bank Governor Getz Wold in 1975 indicates that Norges Bank assumed broad responsibility for banks' liquidity:

"*Under no circumstances will Norges Bank allow a Norwegian commercial bank to suspend its payments. It will also supply the parent bank in question with sufficient liquidity to prevent a foreign subsidiary that is wholly or partly owned by a Norwegian commercial bank from having to suspend its payments. Norges Bank's willingness to lend sufficient liquidity to enable a bank to continue its payments does not imply that the bank in question can expect to continue its activities with no change. Emphasis will be placed on the reasons why such an extraordinary supply of liquidity has been necessary. Norges Bank may attach specific conditions to its liquidity support, for example with respect to the bank's management.*" (excerpt from a letter to the Bank Democratisation Committee published in NOU 1976: 52, p. 330).

This statement must also be viewed in the light of major problems the previous year in a number of banks in West Germany and the US, among others, and a British subsidiary in Switzerland, and the need to shore up confidence in the international financial system.

As long as banks were subject to tight regulation, they had limited opportunities to incur high risk. There was consequently a low risk that frequent supply of extraordinary liquidity to the individual bank would reward and contribute to high risk-taking. With the liberalisation of the credit markets, Norges Bank's role changed. The need to find market solutions for liquidity problems increased, and Norges Bank gradually placed more emphasis on contributing to the stability of the financial system as a whole than to the liquidity of the individual bank. In the mid-1980s, Central Bank Governor Skånland made the following statement about Norges Bank's role if a bank's financial situation should be threatened:

"If such a case should nevertheless arise, Norges Bank will, in the interests of confidence in the Norwegian banking system, contribute to finding a solution which will protect the interests of the creditors in an appropriate way." (Economic Bulletin 3/1985, p. 217)

In connection with turbulence in the foreign exchange market and fear of liquidity pressure in Norwegian banks, Norges Bank stated in a press release on 30 October 1987 that the central bank would take the necessary steps to boost market confidence in the Norwegian banking system:

"*In response to questions recently raised, Norges Bank wishes to reiterate its readiness to prevent nervousness in the market prompted by fears that Norwegian credit institutions may become exposed to liquidity pressure. Norges Bank has complete confidence in the soundness of the banking system and, if need be, will adopt the measures necessary to strengthen market confidence in the banking system.*"

In his annual address in 1988, Governor Skånland repeated his statements about Norges Bank's role in liquidity crises:

"*The Banking, Insurance and Securities Commission*[7] *ensures that financial institutions meet the statutory capital requirements, and guarantee funds provide depositors with added safety. However, should financial institutions find themselves in a position which could affect general confidence in the credit market, Norges Bank – cognizant of its responsibility as the central bank – is prepared to take such measures as are necessary to bolster market confidence in our financial system.*"

In order to bolster confidence in the financial system, Norges Bank granted S-loans to a number of banks during the banking crisis. The interest rate on loans was usually on market terms, defined as the current overnight lending rate. When Sparebanken Nord-Norge had solvency problems in 1988-89, Norges Bank additionally provided income support in two ways: a loan on special terms at a subsidised interest rate, which entailed a discount value of NOK 200 million, and write-down of a loan of NOK 500 million. The income support was provided as part of the recapitalisation of the bank in collaboration with the Savings Banks' Guarantee Fund. In Report no. 24 (1989-90) to the Storting, p. 18, the Ministry of Finance wrote that *"…Norges Bank's contribution to the refinancing of crisis-hit banks raises a number of questions and problems. … The write-down of the central bank's loans may therefore, under the circumstances, represent an active use of government funds that should be deliberated by the Storting in advance."* One lesson that this provided was that: *"In the event of any future crisis situations in Norwegian banks, the Ministry of Finance assumes that the ordinary system of the law will be adhered to. The Ministry refers to the schemes that have been established through the guarantee funds."* The Standing Committee on Finance endorsed this view in its follow-up in Recommendation no. 90 (1989-90) to the Storting. Thus the solvency problems in Sparebanken Nord-Norge led to a clarification of the distribution of responsibilities between the central bank, the guarantee funds and the government authorities in the financial safety net in the period that followed.

[7] Previous English name for the Financial Supervisory Authority - Kredittilsynet

When the acute crisis in Christiania Bank became public knowledge, acting Minister of Finance Tove Strand Gerhardsen published a statement on 14 October 1991 that the Government would take steps to bolster confidence in the Norwegian banking system. The same day, Norges Bank issued the following press release:

"*Norges Bank refers to the statement made by acting Minister of Finance Tove Strand Gerhardsen to the effect that the Government will implement the measures necessary to bolster confidence in the Norwegian banking system. Norges Bank additionally points to the fact that one potential measure the Government is considering is transferring capital to the Government Bank Insurance Fund. This will provide a foundation that enables the Fund to strengthen the capital in Christiania Bank so that the bank can fulfil the statutory capital adequacy requirements.*
Norges Bank will accordingly continue to ensure that sufficient liquidity is supplied to Christiania Bank and the banking system generally."

Mortgage companies also experienced liquidity problems in 1991. In April 1991, Norges Bank granted an S-loan to Realkreditt, which had begun to have serious liquidity problems[8], partly as a result of dwindling profitability. Later that year other mortgage companies developed liquidity problems. On 26 November, Norges Bank therefore issued a general statement on liquidity to mortgage companies:

"*The problems a number of mortgage companies have faced recently in the bond market cannot be attributed to their financial position. Their capital adequacy is satisfactory, and in several cases is higher than stipulated in the requirements. It is therefore assumed that the situation that has arisen is of a temporary nature, and that it will be rectified as general confidence in the financial market is gradually re-established.*

To assist mortgage companies in continuing with their operations on the basis of the ordinary conditions for their funding, Norges Bank may grant liquidity loans to companies in situations where such funding is drying up for reasons that cannot be attributed to the individual company. The conditions for such loans will be agreed on a case-by-case basis."

The statement from Norges Bank may have helped to calm the markets, and there was no need to grant loans on special terms as follow-up to the statement.

In autumn 1992 liquidity problems arose for both mortgage companies and finance companies. The statement of the previous year from Norges Bank was therefore repeated in a press release of 4 September 1992, and extended to include private finance companies.

"*Financial markets have been marked by some turbulence and uncertainty the last few days. Norges Bank views this development as transient, but does not rule out the possibility of increased liquidity strains even for companies with a sound capital base.*

The present situation bears some resemblance to the problems that arose in the bond market in late autumn 1991, which led to Norges Bank's declaration of liquidity support in favour of mortgage companies on 26 November 1991."

As follow-up, S-loans were granted to one more mortgage company and five finance companies.

In connection with follow-up of the Smith Commission's review of the handling of the banking crisis, Norges Bank issued a statement concerning its general attitude in a submission of 17 December 1999 to the Ministry of Finance:

"*Norges Bank is responsible for promoting robust and efficient financial markets and payment systems, i.e. contributing to financial stability. Should a situation arise in which the financial system itself is at risk, Norges Bank, in consultation with other authorities, will consider the need for, and if necessary initiate, measures that may help to bolster confidence in the financial system.*"

This was very largely a follow-up to former central bank governor Skånland's statements in 1988 to the effect that Norges Bank would consider measures to "strengthen confidence in our financial system". In the light of experience from the banking crisis, Skånland's statement was supplemented to the effect that measures in the event of a loss of confidence would be considered "in consultation with other authorities".

3.2 Previous guidelines for the provision of loans on special terms[9]

The structure of the S-loan scheme has varied considerably over time. Until the mid-1980s, S-loans were granted in the case of large, unpredictable loss of deposits, for the execution of bank mergers, to help banks that had been adversely affected by certain credit policy measures, to assist banks that had suffered major losses and to help banks remedy an imbalance between deposits and lending. S-loans were issued at an interest rate lower than market rates, and therefore constituted an appropriate instrument in banking structure policy. There was varying practice with respect to requiring collateral for S-loans.[10]

[8] Towards the end of the year, Realkreditt was taken over by DnB.

[9] Developments in Norges Bank's policy on loans on special terms up to and including 1988 were discussed in a report of 22 November 1988 to the Ministry of Finance (published as Appendix 2 to Report no. 16 (1988-89) to the Storting relating to Kredittilsynet's, Norges Bank's and the Ministry of Finance's treatment of Sparebanken Nord and Tromsø Sparebank).

[10] In 1975, for example, the Supervisory Council of Norges Bank allowed S-loans to be granted as debt instrument loans without posting of collateral. Prior to this, the rule was that S-loans granted as more long-term liquidity support should be provided against collateral in the form of bearer bonds, and in special cases against other collateral.

Table 1. Developments in S-loans 1976-1986. Number and in millions of NOK at year-end

	1976	1979	1982	1984	1986
Number	52	11	16	3	1
Granted loans (millions of NOK)	798	650	323	235	165

In 1984, Norges Bank's Executive Board decided that the use of S-loans should be made more restrictive and that the scheme should be used more in Norges Bank's capacity as LLR, as it was defined at that time.[11] This meant that S-loans should be employed in cases where liquidity problems stemmed from the individual bank's operations, and as support to banks that had suffered severe losses. S-loans could also be used for carrying out certain bank mergers. After this, the volume of S-loans fell (see Table 1).

The foreign exchange crisis in spring 1986 led to a rise in interest rates on Norges Bank's ordinary lending facilities, and this led to many banks applying for S-loans for various "special reasons". In an Executive Board memo dated 20 May 1986 it was proposed that the applications should be rejected on the grounds that *"the general tightening of short-term borrowing rates in early May was necessary to curb the outflow of capital."* All applications were therefore rejected.

At the Executive Board meeting of 18 February 1987, the principles underlying interest rate conditions for S-loans were examined. The S-loan rate had previously been slightly higher than Norges Bank's discount rate The discount rate was discontinued with effect from 1 January 1987. At the Executive Board meeting, the S-loan rate was set as 11 per cent, which was an increase of 1 percentage point. The increase was related to developments in the general level of interest rates. The S-loan rate was still lower than the interest rate on banks' ordinary borrowing facilities in Norges Bank, and implied continued subsidising of banks that received S-loans.

The S-loan arrangement was reviewed again by the Executive Board on 26 August 1987. It was noted that the S-loan arrangement had been tightened up, in line with the recommendation endorsed by the Board of Directors[12] on 11 May 1984. In an assessment of whether Norges Bank should extend loans on special terms, the memo states that it appears *"reasonable to place greatest emphasis on the extent to which such loans can be regarded as natural responsibilities of the central bank, particularly the responsibility of "lender of last resort", i.e. whether these loans are essential for protecting the stability of the banking system."* It was pointed out that frequent granting of S-loans could have negative consequences because *"... the S-loan arrangement frees banks to some extent from the financial consequences of their own unsound transactions."* It was also noted that banks' possibility of acquiring necessary liquidity through Norges Bank's other lending arrangements, liquidity policy instruments and the interbank market, had improved in recent years. S-loans could therefore not be justified on the grounds of the individual bank's liquidity needs to the same extent as in the previous more strongly regulated credit system.

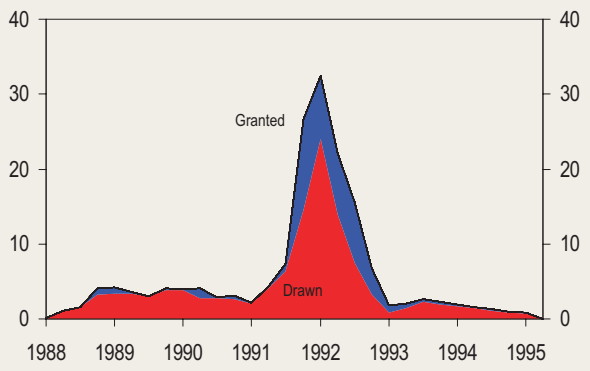
The Executive Board accordingly decided that:

"*The main criterion for extending such loans should be that it has been found probable that the bank in question (loan applicant) has or will develop liquidity or solvency problems as a result of which it will be unable without support to achieve a merger with other banks in accordance with current guidelines for banking structure policy. (...) S-loans should continue to be used in extraordinary liquidity situations where special stability interests indicate the necessity (e.g. in connection with obligations in case of conflicts in working life).*"

Although this implied a tightening, the S-loan arrangement was nevertheless assigned more responsibilities than merely contributing to the stability of the banking system. This was partly because Norges Bank still played a part in the authorities' banking structure policy.

A number of S-loans were then granted in connection with the banking crisis (see Chart 2). Following a discussion with the Ministry of Finance, it was decided in summer 1998 that S-loans should be granted on the basis of two principles: To resolve a short-term liquidity problem, or to resolve a more long-term structural problem. The first type of S-loan should be granted at market rates (defined as the overnight lending rate, possibly with a premium), while the latter should be granted on favourable interest rate terms if the government wished to contribute to a specific crisis solution by providing income support. During the banking crisis, Norges Bank granted both types of S-loan. The first type

Chart 2 S-loans granted by and drawn from Norges Bank. 1988-95. End of quarter. In billions of NOK



Source: Norges Bank

[11] The background was the need to clarify the distinction between S-loans and term deposits. From 1975, Norges Bank had had an arrangement with term deposits in Norwegian banks that was intended to dampen the impact of a generally tight credit policy on the most exposed banks and regions. The term deposit arrangement was discontinued in 1988 when it was considered that the interbank market was sufficiently developed.

[12] The governing body preceding the Executive Board.

was granted in most cases, usually to banks that had suffered a loss of confidence from markets (in many cases abroad) and in order to facilitate the desired mergers in the banking sector, to make banks more viable. In connection with the recapitalisation of Sparebanken Nord-Norge, a subsidised loan was also extended, as mentioned in 3.1. The authorities introduced a scheme of clearly subsidised deposits from Norges Bank when the banking problems developed into a systemic crisis in 1991. Since the banking crisis, Norges Bank has not granted S-loans.

3.3 New challenges for LLR policy

Under normal market conditions, solid banks normally enjoy confidence in the markets, and therefore do not have liquidity problems. However, turbulence may arise in financial markets and cause liquidity to dry up. The BIS (2001) points out that certain structural features (including increased use of collateral in various markets and the development of technically sophisticated risk systems) have improved the liquidity of securities markets in normal times, but at the same time increased the risk of a credit crunch in the event of market turbulence.

Securities are used increasingly as collateral to reduce counterparty risk in connection with derivative agreements. Moreover, the use of repurchase agreements, where securities are exchanged for liquidity for an agreed period, has increased sharply in interbank markets in many countries since the 1980s. Central banks also normally require full provision of collateral for their loans. Although increased use of collateral reduces the risk of the individual lender, this trend may also lead to securities markets becoming an important source of contagion. There may be increasing risk of interbank markets that use securities as collateral drying up in the event of a sharp fall or increased volatility in securities markets. Sophisticated risk management systems may have a similar effect, because many market participants use models with similar properties to assess market risk and make investment decisions. As a result, when securities markets fall or become more volatile, many market participants may withdraw simultaneously from particular markets in order to reduce the risk of large losses. The result may be even more pronounced falls and volatility.

Moreover, increasing use of securitisation and credit derivatives, which are techniques for transferring risk, may lead in many countries to securities markets and institutions other than banks becoming increasingly important for financial stability. This can change the central banks' role.

White (2004) maintains that extraordinary supply of liquidity to banks is used less frequently in both Europe and North America. This is in line with developments in Norway. Since the banking crisis, there have been few cases of serious liquidity problems in banks, and S-loans have not been granted. The liquidity problems that arose in a number of smaller banks in autumn 2002 as a result of high losses, particularly in connection with Finance Credit and fish farming loans, and the subsequent loss of lender confidence, were resolved without support from the authorities or from the guarantee funds. Instead they were solved through mergers and acquisitions or liquidation.

According to White, the background to those cases where banks were supplied with extraordinary liquidity was often operational disruptions[13], which led to problems in the payment system. At the same time, White believes that there may have been a shift over time towards more frequent injection of liquidity into the market. There are several examples of this.

The dramatic fall in share prices in 1987 and the crises in Russia and the US hedge fund LTCM in 1998 prompted an injection of liquidity and monetary policy easing in the US. A number of central banks were also poised to supply more liquidity to the banking system in connection with the millennium rollover. The terror attack in New York on 11 September 2001 caused turmoil in the dollar markets and led to fear of weaker economic developments in many countries. The Federal Reserve carried out both a general easing of monetary policy and more targeted measures to reduce problems in the payment system. A number of central banks made foreign exchange agreements with the Federal Reserve in order to be able to provide dollar financing to their own banks, and lowered their key rates. In situations like this, there may thus be a very close connection between the interests of financial stability and of monetary policy. Norwegian banks, on the other hand, did not experience major problems, and Norges Bank therefore did not establish its own foreign exchange facility. However, the Executive Board discussed this in principle in May 2002, and its stance was published in *Financial Stability* 1/02, where it states that: *"However, extraordinary liquidity supplied in foreign currency is one of the instruments available to the central bank, although it must be reserved for very special situations. In Norway, the use of this instrument would have to be based on an assessment of the stability of Norwegian financial markets and the Norwegian payment system."*

The emergence of international cross-border banks makes it more complicated today to assess the optimal means for the authorities to manage crises. In the Nordic countries, cross-border banks are well established. The authorities of the Nordic countries have prepared for such situations by drawing up agreements on exchange of information and some criteria for managing crises (Borchgrevink and Moe (2004)).

Developments in the financial sector may therefore change the risk picture facing central banks with respect to LLR policy. Like other central banks, Norges Bank

[13] In November 1985 a computer error at the Bank of New York resulted in the bank disbursing funds for purchased bonds but not accepting incoming payments for bonds that were sold. The bank incurred a large liquidity deficit that only the Federal Reserve had the resources to cover at short notice.

has a contingency plan for liquidity crises, and last reviewed its stance on providing extraordinary liquidity in March 2004.

4 The Executive Board's most recent review of the role of LLR

4.1 Promotion of financial stability receives top priority

Since the 1970s, Norges Bank has attempted to limit its responsibility to mainly supplying liquidity to the banking system as a whole, and has become more restrictive about extending S-loans. This is because the liberalisation of the financial sector increased the efficiency of the interbank, money and capital markets, and improved banks' possibility of procuring liquidity in the market. Frequent injection of extraordinary liquidity to individual banks could thus entail a greater risk of the central bank rewarding and contributing to moral hazard with respect to the individual bank, and reducing market efficiency.

The banking crisis led to a clearer definition of the distribution of responsibilities between central bank, guarantee funds and the government authorities in the financial safety net. It was specified in particular that Norges Bank itself shall not increase its risk and impose losses on the state. Norges Bank has not granted S-loans since the end of the banking crisis, and since 1999 has required that full collateral be provided for its loans.

At present, the liquidity of the interbank, money and capital markets is satisfactory. The risk of liquidity crises that affect the banking system as a whole therefore appears to be low. For the same reason, the risk of the individual bank experiencing liquidity problems also appears to be low, unless the banks themselves have poor risk management and deteriorating financial strength and lose market confidence. However disruptions of various types may occur and lead to liquidity crises.

The Executive Board's most recent review of the Bank's role as LLR in March 2004 confirms the course that has been pursued since the banking crisis to the effect that *extraordinary supply of liquidity should be reserved for situations where financial stability may be threatened without such support*. The Executive Board also clarified the Bank's reaction to different types of liquidity problems and its criteria for granting S-loans. Two types of liquidity problem were discussed: 1) Liquidity problems that arise suddenly as a result of operational failure of payment systems or failure of funding markets, and 2) liquidity problems resulting from more fundamental problems (poor risk management, deteriorating financial strength etc.) in individual banks.

4.2 Operational failure and liquidity problems

Acute liquidity problems in individual banks will probably lead to insufficient cover for payment settlements in Norges Bank's settlement system (NBO). Norges Bank may then approve other types of collateral, or waive the requirement that collateral be posted for intraday loans in order to ensure the execution of payment settlements. Such a move would be made *in the interests of maintaining the efficiency of and confidence in the payment system*. However, Norges Bank and the banking industry have placed emphasis on establishing solutions that do not entail a need to supply unsecured liquidity. One element of these solutions is that a bank that cannot meet its commitments is removed from the settlements, and that the positions of the other banks are recalculated, excluding their positions in relation to this bank.

An acute shortage of liquidity in the banking system as a whole would probably lead to many banks having insufficient cover for payment settlements in NBO, even at the end of the day, and to short money market rates rising. Norges Bank has the authority to approve another type of collateral or waive the requirement that collateral must be furnished for fixed-rate loans. Such a move would be aimed at *bolstering financial stability and/or avoiding an undesirable increase in short-term money market rates*.

In order to reduce the risk of Norges Bank rewarding opportunistic behaviour by banks or incurring losses, extraordinary intraday loans or fixed-rate loans should be reserved for situations where it is *evident that liquidity problems are of a short-term nature and are not due to more fundamental problems*.

There will be special events that trigger such situations, such as drying up of liquidity in markets that are important to Norwegian banks, or failure of the central infrastructure for payment settlements.

Disruptions in banks' own payment settlement systems may also lead to liquidity problems. Frequent supplies of extraordinary liquidity in the event of such problems may reduce banks' incentive to prevent operational failure.

4.3 Liquidity problems that are due to more fundamental problems in a bank – use of S-loans

Liquidity problems in a bank will often be a symptom of poor risk management and deteriorating profitability and financial strength, with subsequent loss of market confidence. Kredittilsynet has a central role in such situations. The Act on the Government Bank Insurance Fund has procedures designed to contribute to solving liquidity problems before they become serious and

cause problems such as insufficient cover in payment settlements. When Kredittilsynet discovers potential liquidity and solvency problems, it shall inform Norges Bank, partly because Norges Bank can provide S-loans. If Kredittilsynet has reason to assume that a bank has solvency problems, the Government Bank Insurance Fund shall also be informed.

When liquidity problems are due to more fundamental problems, measures targeting the causes of the problems will be important for effective crisis-management. Norges Bank may in the event provide S-loans. The following criteria and terms apply to S-loans:

- S-loans should be restricted to situations where financial stability may be threatened if such support is not provided.
- In most cases, a decision about an S-loan will be a matter of special importance that must first be submitted to the Ministry of Finance. Norges Bank will request that Kredittilsynet make an assessment of: the causes of the liquidity problems, the liquidity and solvency situation of the banks in crisis, and measures that may solve the liquidity problems.
- Before an S-loan is provided to banks that have, or are at risk of developing weak capital adequacy, there should be a plan to recapitalise the bank.
- S-loans should be provided against posting of full collateral or guarantees.
- The interest on the S-loan should be set higher than the market rate applying generally.
- Financial institutions other than banks may be granted S-loans in special cases.

5. Summary

Norges Bank's role in relation to the financial sector has changed over the past 30 years. Prior to the liberalisation of credit markets in the late 1970s, Norges Bank had many responsibilities relating to credit policy in addition to monetary policy. During the regulated credit regime, interbank, money and capital markets were only developed to a limited extent, and banks experienced liquidity problems more often than they do today. Norges Bank had a number of arrangements for meeting banks' liquidity needs. As long as banks were subject to tight regulation, they had limited opportunities to incur high risk. Norges Bank has subsequently attempted to confine its responsibility to mainly supplying liquidity to the banking system as a whole, and has become more restrictive about providing S-loans. Since the banking crisis, the Bank's attitude to providing extraordinary liquidity to the individual bank has remained firm, and no S-loans have been granted.

Liquidity in money and capital markets is currently satisfactory in Norway and other countries with well developed financial markets. Banks that are solid and have good risk management systems will normally enjoy market confidence, and will therefore have adequate access to liquidity. However, various kinds of failure may occur.

Like other central banks, Norges Bank has a contingency plan in case of liquidity crises. The Executive Board's most recent review of the Bank's role as LLR in March 2004 confirmed that extraordinary supply of liquidity should be reserved for situations where financial stability may be threatened without such support. The Executive Board also clarified the Bank's reaction to different types of liquidity problems and its criteria for granting S-loans. It was established that extraordinary liquidity infusions through fixed-rate loans (for financial stability and/or monetary policy reasons) or intraday loans (for payment system reasons) may be appropriate when it is evident that the liquidity problems are of a short-term nature and not due to more fundamental problems in banks. When liquidity problems are due to more fundamental problems on the other hand, such as poor risk management and deteriorating financial strength, measures targeting the causes of the problems will be important for effective crisis-management. In such cases, cooperation with other authorities will be important, and Norges Bank can provide S-loans as part of the overall management of the crisis. However, Norges Bank cannot increase its risk, and will require provision of full collateral as far as possible.

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