Norwegian covered bonds – a rapidly growing market

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The Norwegian version of covered bonds, "obligasjoner med fortrinnrett" (OMFs), were introduced in Norway in June 2007. OMFs have already become an important source of funding for Norwegian financial services groups and banking alliances. The volume outstanding in NOK and foreign currency was equivalent to around NOK 500 billion at end-2010 Q2. So far, most OMFs have either been used in the government swap arrangement and exchanged for Treasury bills, or issued abroad and purchased by foreign investors. The combination of low risk and higher returns than on government bonds will probably lead to greater interest among Norwegian investors too in the coming years. This article presents the key features of OMFs and the market for them in Norway and abroad. It also highlights a number of risk factors and discusses whether OMFs could affect the stability of the financial system.

1. Introduction

OMFs (obligasjoner med fortrinnsrett) are the Norwegian version of a type of bond known internationally as covered bonds.[2] A covered bond is a bond which gives investors recourse to a specified pool of the issuer's assets. Bonds giving investors a direct claim on the assets put up as collateral were first issued in Germany back in 1769, and a number of other European countries introduced similar bonds over the next century.[3] However, bonds with characteristics similar to those of today's covered bonds were not issued until 1899, when a new mortgage bank law was passed in Germany. A number of other European countries have also long had legislation essentially corresponding to modern covered bond laws, but legislation of this kind has not been introduced in most countries until recent years.

Bonds backed by assets have proved robust in times of economic crisis. In Germany, there has not been a single default since 1769. Nor have there been any defaults in Denmark, France or Spain, where covered bonds also have a long history, since laws were introduced on the issuance of mortgage-backed bonds.[4] Nor were there any defaults on these instruments during the financial turmoil that erupted in summer 2007.

For a long time, the markets for covered bonds were mainly national with limited volumes outstanding and limited turnover. An important watershed came with the introduction of German Jumbo Pfandbriefe in 1996. A Jumbo Pfandbrief has a fixed coupon, a volume outstanding of at least EUR 1 billion, and multiple market-makers. These requirements meant that Jumbo Pfandbriefe were much more liquid than other bonds from private issuers, and this brought increased interest from foreign investors as well. The volume of covered bonds outstanding globally grew from EUR 100 billion in 1996 to EUR 600 billion in 2000 and is currently estimated to be more than EUR 2,400 billion.

Norwegian banks have been able to issue covered bonds through separate mortgage companies since the rules on OMFs entered into force in June 2007. Banks' lending has grown more quickly than deposits in recent years, and this lending has been funded by issuing unsecured bonds or taking out loans from other financial institutions.

[1] The views expressed in this article are those of the authors and not necessarily of Norges Bank. We would like to thank Arve Austestad (SpareBank 1 Boligkreditt), Andreas Heiberg (Nordea Bank Norway), Øyvind Birkeland (DnB NOR Boligkreditt) and Sigbjørn Atle Berg, Kåre Hagelund, Sindre Weme, Gunnvald Grønvik and Knut Sandal (Norges Bank) for their valuable comments.

[2] This article uses the term "OMFs" to refer to covered bonds issued under Norwegian rules, and "covered bonds" for covered bonds in general.

[3] Historical information based primarily on Mastroeni (2001).

[4] In some of these countries, there were no defaults before the legislation was introduced either.

Because OMFs give the investor a preferential claim on a pool of cover assets, they can usually be issued on better terms than unsecured bonds or loans. OMFs may also be a more stable source of funding than the other options available to a private bank. OMFs could therefore be an important alternative to unsecured bonds and loans from financial institutions as a source of funding in the coming years.

OMFs will probably also be an important investment opportunity for banks and pension and insurance companies. This is partly because investment in OMFs can help them to comply with new regulatory requirements for liquidity and capital adequacy. In addition, banks can use these bonds as security for loans from central banks or in repurchase agreements. Banks' risk in terms of both debt and receivables may therefore be affected by how robust OMFs prove to be in periods of turmoil in financial markets and/or weak macroeconomic performance. The robustness of OMFs is therefore important for financial stability.

The article is structured as follows: Section 2 provides an overview of the key characteristics of covered bonds and the Norwegian rules, and discusses the features of the Norwegian mortgage companies issuing OMFs. Section 3 looks at the market for OMFs, while section 4 analyses various types of risk associated with these instruments, and section 5 discusses their potential implications for financial stability. Finally, section 6 provides a brief summing-up.

2. What are covered bonds and OMFs?

Covered bonds issued in different European countries have different characteristics and so there is no universal definition.[5] However, the European Covered Bond Council has defined the following minimum standard:

- The bond is issued by – or bondholders otherwise have full recourse to – a credit institution which is subject to public supervision and regulation.
- Bondholders have a claim against a cover pool of financial assets in priority to the unsecured creditors of the credit institution.
- The credit institution has the ongoing obligation to maintain sufficient assets in the cover pool to satisfy the claims of covered bondholders at all times.
- The obligations of the credit institution in respect of the cover pool are supervised by public or other independent bodies.

Covered bonds that meet these requirements can be divided into two categories:

- Covered bonds issued under *special legislation*, which includes requirements for cover assets, liquidity management and supervision. This special legislation and supervision limit the risk to bondholders.
- Covered bonds issued under *general legislation*, where the features of the bonds are determined by separate agreements between issuer and investor (known as structured covered bonds). Bonds of this type can be issued in countries where there is no special legislation. Another motive is that separate agreements give the issuer greater flexibility, for example when deciding which assets can be included in the cover pool.

Most European countries have introduced special legislation on the issuance of covered bonds. This legislation varies slightly from country to country, but has in most cases been harmonised with the requirements of the EU's Undertakings for Collective Investment in Transferable Securities (UCITS) Directive and Capital Requirements Directive. The UCITS Directive sets out requirements for funds that are to be marketed and sold to small investors in the European Economic Area (EEA). A fund of this type may not, in the first instance, invest more than 5 per cent of its assets in financial instruments issued by any one company, but this limit rises to 25 per cent for covered bonds that meet the directive's criteria. The Capital Requirements Directive contains guidelines for the calculation of the capital that credit institutions must hold for their various categories of asset. When calculating this capital requirement, assets are assigned different weights according to the risk associated with them. Secured assets are given a low risk weight, which means that credit institutions do not need to hold as much capital for these assets as for other assets from private issuers. The Capital Requirements Directive sets out criteria that covered bonds must satisfy in order to qualify for a low risk weight (10 per cent).[6]

The Capital Requirements Directive assumes that the requirements of the UCITS Directive are met and makes

[5] Covered bonds are issued primarily in European countries, but there are instances of these bonds being issued outside of Europe, including the US.

[6] Risk weight based on the standardised approach to calculating the capital requirement. The capital requirement is 8 per cent of the risk-weighted balance sheet. The risk weight for covered bonds is 10 per cent. Bondholders subject to the capital requirement need therefore only hold capital for a minimum of 0.8 per cent of the value of their covered bonds.

a number of additional requirements. Covered bonds that comply with the Capital Requirements Directive will therefore always comply with the UCITS Directive, but not vice versa. For a covered bond to have a low risk weight under the Capital Requirements Directive, the issuer of must be subject to public supervision which safeguards the investor's interests, and the investor's loan must be secured against assets which will be used to cover his claim in the event of insolvency. This requirement must be met throughout the life of the bond. The

The Norwegian legislation

In Norway, the issuance of covered bonds is governed by the Financial Institutions Act of 1988 and the OMF Regulations of 2007. To ensure that OMFs issued under the Norwegian rules are eligible for a 10 per cent risk weight under the standardised approach, the requirements of the OMF Regulations are designed to be at least as strict as those of the Capital Requirements Directive.

OMFs must be issued by a separate institution (mortgage company) and secured on loans owned directly by that company. The loans can be transferred from a bank or issued by the company directly. If the issuer defaults on its obligations to bondholders, they will be protected both through a direct claim on the mortgage company and through a preferential claim on the cover pool. The cover pool can consist of residential mortgages up to a loan-to-value ratio (LTV) of 75 per cent, commercial mortgages up to an LTV of 60 per cent, loans to public authorities in the EEA or sovereign states in the OECD that qualify for credit quality step 1, and derivatives with counterparties that qualify for credit quality step 1. Each loan can account for a maximum of 5 per cent of the cover pool, and a maximum of 15 per cent of exposure in the cover pool may be to banks. Up to 20 per cent of the cover pool can consist of substitute collateral, defined as particularly liquid and secure bonds or bank deposits.[1]

The value of the cover pool must at all times exceed the value of OMFs outstanding. The cover pool is to be marked to market, while the value of OMFs is calculated at net present value. Assets that do not satisfy these requirements may be included in the cover pool but do not count when calculating whether the company meets the matching requirement in section 2-31 of the Financial Institutions Act. An independent inspector appointed by Finanstilsynet (the Financial Supervisory Authority of Norway) must check at least quarterly that the cover pool criteria are being met. Mortgage companies are also required to manage their liquidity in such a way as to ensure timely payments to bondholders. To ensure this, the companies must carry out stress tests. The mortgage companies must also set limits for interest and exchange rate risk. Finanstilsynet oversees mortgage companies' liquidity management, including the limits for interest and exchange rate risk.

A mortgage company can be placed in public administration if it fails to make timely payments to bondholders, or if the bank that owns the mortgage company is placed in public administration. In the event of public administration, Finanstilsynet will appoint a separate administrator for the mortgage company to work together with a creditors' committee on which bondholders are represented. The administrator may decide to allow bonds to run to maturity if he believes that the mortgage company has sufficient liquidity to make timely payments. The administrator may issue new bonds backed by the cover pool in order to obtain sufficient liquidity. If the administrator finds that there is insufficient liquidity, he will sell the cover pool.[2] The proceeds of the sale will be used to cover the claims of bondholders and derivative counterparties and his own costs. In the event of public administration, bondholders are protected by law against individual bondholders bringing individual actions (at the expense of other bondholders' claims) and set-off against the mortgage company.

[1] May be increased to 30 per cent with Finanstilsynet's consent.

[2] When a loan is sold to another credit institution, the borrower (normally the homeowner) will be informed but is not required to give consent.

Capital Requirements Directive contains detailed criteria for determining which assets may be used to secure bondholders.[7]

The OMF model

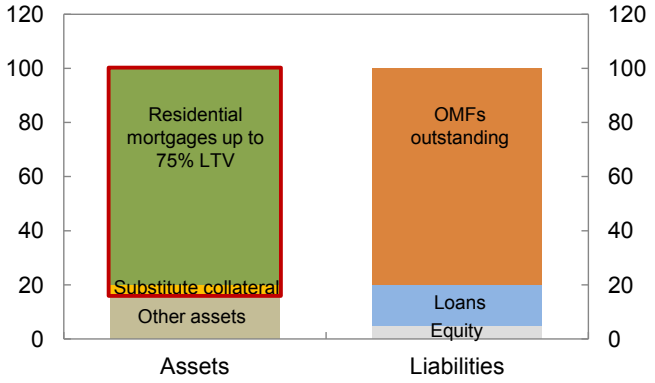
Under Norwegian law, OMFs must be issued by a separate mortgage company (see box with further details). These mortgage companies are primarily formed, owned and controlled by banks. The majority of Norwegian banks own such a company together with other banks, but a number of large and medium-sized banks have chosen to set up their own mortgage companies. A few banks do not have any links with companies issuing OMFs. OMFs are clearly distinct from traditional securitisation of loans in the form of asset-backed securities (ABSs) (see box setting out the key differences).

The mortgage companies turn residential or commercial mortgages into funding for the banks. This is achieved by the banks transferring these loans to the mortgage companies, which then issue OMFs secured on the loans.[8] The banks normally give the companies short-term credit when the loans are transferred. The mortgage companies repay this credit either by obtaining liquidity through the sale of OMFs or through the bank receiving OMFs with a value corresponding to the loans transferred. The bank's balance sheet is therefore affected by lending being replaced with OMFs or sale proceeds. These proceeds may be used to repay the bank's liabilities.

The largest item on the asset side of the mortgage companies' balance sheets is residential and commercial mortgages, while the largest item on the liability side is OMFs issued. Under the law, the value of substitute collateral and residential and commercial mortgages up to an LTV of 75 per cent and 60 per cent respectively must be greater than the value of OMFs outstanding (see box on the Norwegian legislation). Bondholders have a preferential claim to the portion of these loans beyond the 75/60 per cent limit, but only loans up to 75/60 per cent will count in the cover pool when calculating whether the company meets this matching requirement.

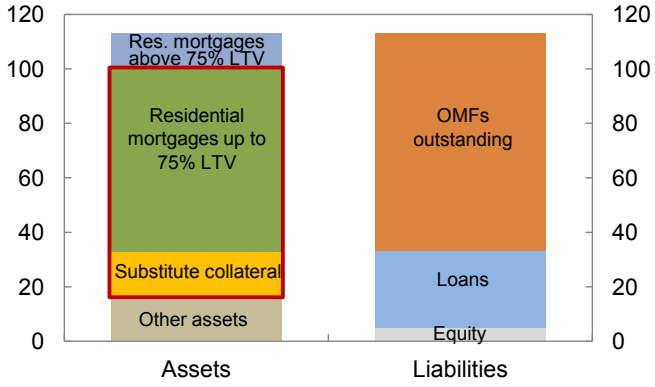
If property prices fall, it may be necessary for the mortgage company to bring in new loans in order to maintain the value of the cover pool. For example, a mortgage company can increase the size of its substitute collateral or have new residential, commercial or public sector loans transferred to it. This can be financed by the company increasing its own borrowings from the banks. Both assets and liabilities will grow if this kind of solution is chosen (see Charts 2.1 and 2.2). One alternative is to buy back issued OMFs and finance this by issuing an unsecured bond. The unsecured bond will then replace the OMF on the liability side, while the asset side will be unchanged.

Chart 2.1 Simplified balance sheet for a residential mortgage company before a drop in house prices. Red frame indicates eligible cover pool[1].
Balance sheet total = 100 before the drop in house prices



[1] Eligible cover pool denotes the assets in the cover pool that qualify when calculating whether the value of the cover pool exceeds the value of the outstanding covered bonds, as is required by law.

Chart 2.2 Simplified balance sheet for a residential mortgage company after a drop in house prices. Red frame indicates eligible cover pool[1].
Balance sheet total = 100 before the drop in house prices



[1] Eligible cover pool denotes the assets in the cover pool that qualify when calculating whether the value of the cover pool exceeds the value of the outstanding covered bonds, as is required by law.

[7] Mortgage companies can be exposed to public authorities within the EU, sovereign states and public authorities outside the EU that qualify for credit quality step 1, residential mortgages up to an LTV of 80 per cent, commercial mortgages and ship mortgages up to an LTV of 60 per cent, and banks that qualify for credit quality step 1. Exposure to banks may not exceed 15 per cent of the mortgage company's cover assets.

[8] As of May 2010, Norwegian banks had transferred 40 per cent of their residential mortgages to mortgage companies that issue OMFs.

Key differences between OMFs and ABSs

Large volumes of securitised debt in the form of asset-backed securities (ABSs) have been issued in the US and other countries. The following compares some of the many different features of ABSs and OMFs.

Capital requirements
ABSs: Securitisation of a bank's lending in the form of ABSs means that portfolios of loans are sold to a special-purpose vehicle (SPV). This entity is not covered by capital requirements and is not owned by the bank itself. The SPV finances the purchase by issuing bonds (ABSs) backed by the portfolio acquired. The risk associated with the loan portfolio is transferred to the buyers of these bonds.

OMFs: The Norwegian banks own the mortgage companies that issue OMFs. These mortgage companies, which should not be confused with the aforementioned SPVs, are covered by the same capital adequacy rules as banks and must therefore have sufficient capital cover for the loans they own. As this capital is paid in by the owner banks, OMFs do not entail any direct transfer of credit risk from the banks to external investors.

Types of underlying loans
ABSs: Can be backed by residential and commercial mortgages, but also commonly by auto loans, credit card receivables and student loans. The quality of the loans is specific to each issue.

OMFs: Are covered by rules which demand strict supervision and lay down clear requirements for what can be used as collateral. The cover pool consists mainly of residential and commercial mortgages up to an LTV of 75 and 60 per cent respectively.

Static vs dynamic loan portfolio
ABSs: The loans that make up the collateral do not generally change during the life of an ABS. It is also common for loan customers' payments of interest and principal to be transferred via the SPV to investors (pass-through structure). Funds from early repayments are also transferred to investors. This means that investors cannot know exactly how large the periodic payments from the ABS will be, nor when the ABS will mature.

OMFs: The cover pool is dynamic, which means that it can be expanded at any time with new loans and substitute collateral. Loans that no longer meet the legislative criteria will not qualify when calculating whether the value of the cover pool exceeds the value of the outstanding covered bonds, as is required by law (although non-qualifying loans may remain in the cover pool). The timing and size of periodic payments are known in advance.

Tranching
ABSs: Can be divided into groups of securities with different levels of priority to cash flows and collateral, known as tranches. This subdivision is often structured in such a way that the lowest-ranked tranches take the first losses associated with the underlying loans.

OMFs: Are not divided into tranches, and all bondholders have equal rights to the company's cover pool.

3. The market for OMFs

Significant volumes of OMFs have been issued since the Norwegian rules on these instruments entered into force on 1 June 2007 (see Chart 3.1). The volume outstanding from Norwegian mortgage companies was around NOK 500 billion at end-2010 Q2, of which around a third was denominated in foreign currency.[9] The yield on OMFs has been lower than the yield on ordinary bank bonds (see Chart 3.2).

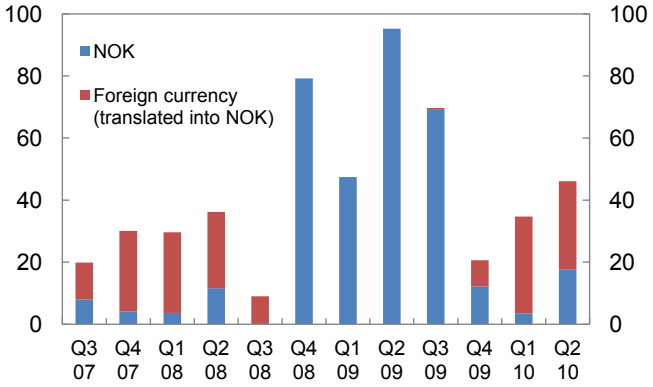
Issuance in Norway

OMFs from Norwegian issuers are generally listed on an exchange. For bonds issued in Norway, this means the main stock exchange Oslo Børs or the alternative bond market Oslo ABM[10]. In the period prior to the announcement of the government swap arrangement for OMFs on 12 October 2008, issuance of NOK-denominated OMFs totalled around NOK 42 billion. OMFs worth more than NOK 230 billion have been used in the swap arrangement (see separate box on the scheme). This corresponds to nearly half of the current volume of OMFs outstanding. The swap arrangement has greatly increased the issuance of OMFs. Before it was introduced, there were seven Norwegian mortgage companies entitled to issue OMFs; today there are 23.

The OMFs used in the swap arrangement need to be refinanced in the market by autumn 2014 as the swap agreements mature (see Chart 3.3). A substantial proportion are expected to be refinanced in foreign currency. For the majority of the slightly smaller Norwegian mortgage companies, however, it will probably be most appropriate to issue OMFs denominated in NOK. This is because international investors' requirements for a good credit rating, large volume outstanding, fixed coupon and market-makers will not be met by many Norwegian issuers (see separate section on international issuance).

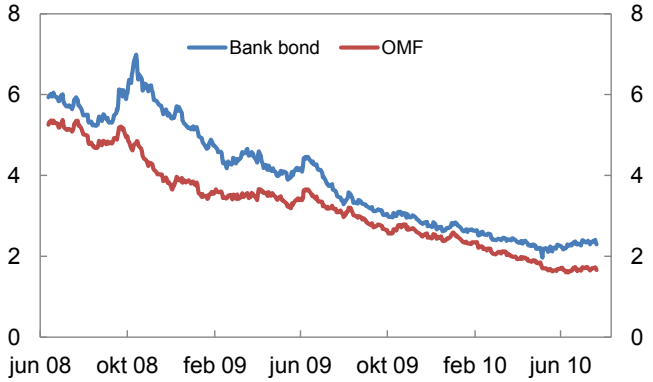
The loans in Norwegian mortgage companies' cover pools are generally variable-rate loans, and OMFs to date have mainly been issued with a floating coupon. This is largely because banks and mortgage companies have been able to use floating-rate OMFs in the government swap arrangement. A floating coupon has also been most common for OMFs issued in the Norwegian market. According to market participants, however, it has been difficult to issue floating-rate NOK-denominated OMFs with a maturity longer than five years. Key investor groups such as pension funds and life insurers prefer to

Chart 3.1 Issuance of OMFs by Norwegian mortgage companies. Billions of NOK. Q3 2007 – Q2 2010



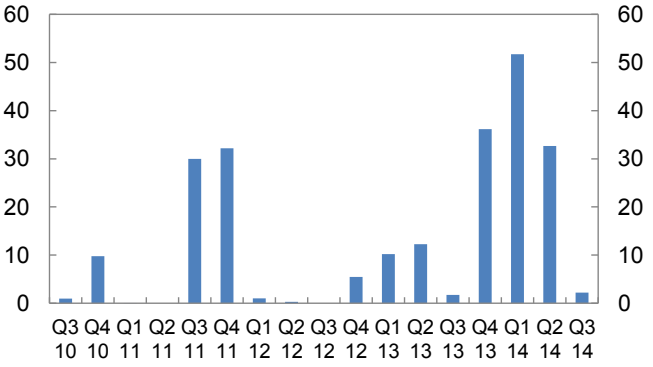
Sources: Stamdata, Bloomberg and Norges Bank

Chart 3.2 Yield on an OMF and a bank bond with the same issue volume. Denominated in EUR. Three years to maturity. Per cent. 12 June 2008 – 21 July 2010



Source: Bloomberg

Chart 3.3 Maturity structure of OMFs in the government swap arrangement. Billions of NOK. Q3 2010 – Q3 2014



Source: Norges Bank

[9] Sources: Stamdata, Bloomberg.

[10] Oslo ABM is an unregulated marketplace which does not require authorisation under the Stock Exchange Act and can therefore operate independently of adopted EU directives. The admission process is simpler, and there is no requirement for IFRS-compliant financial reporting. Disclosure and trading rules are nevertheless equivalent to those for Oslo Børs.

invest in bonds with long maturities and fixed coupons. This may mean that issues of fixed-rate NOK-denominated OMFs will become more common in the future. One challenge for Norwegian issuers wishing to off-load interest rate risk by exchanging a fixed for a floating rate is that there is currently limited access to counterparties that can enter into swap agreements of this kind.

The secondary market for OMFs in Norway is somewhat immature at present. Turnover to date has been limited in terms of both transactions and volumes. This is probably because OMFs have a relatively short history and because most OMFs have been used in the government swap arrangement. Compared to countries where this type of bond is traded more frequently, Norwegian issue volumes are also relatively low. Regulatory changes for insurers and banks may, however, lead to increased demand in the Norwegian market in the coming years (see separate section on investors).

It may also be significant that the Norwegian market is supported by market-makers to only a limited extent. These are generally banks or brokerage houses, and their role is to improve liquidity in the market. Market-makers set both purchase and sales prices for trading in given volumes of OMFs. For some Norwegian issues, the owner banks

The government swap arrangement for Treasury bills and OMFs

As part of the work on improving banks' funding situation, the Storting (Norwegian parliament) authorised the Ministry of Finance on 24 October 2008 to implement an arrangement where the government gives banks Treasury bills in exchange for OMFs for an agreed period. The arrangement was announced at a time when demand for OMFs and many other securities was extremely low as a result of the financial crisis.

As Treasury bills are easier to trade than OMFs, this arrangement has improved banks' liquidity situation. Participants can either retain the bills or sell them in the market. The arrangement is being administered by Norges Bank and has a limit of NOK 350 billion.[1] Treasury bills with a total value of NOK 230 billion have been allocated through auctions organised by Norges Bank. No further auctions are currently planned.

Banks eligible to sign up for Norges Bank's lending facility (F-loans) and mortgage companies authorised to issue OMFs have entered into swap agreements with the government. Only OMFs backed by Norwegian loan portfolios are eligible for the scheme.

In the auctions, participants specified the desired volume of Treasury bills, the maturity of the swap agreement, and how many basis points they were willing to pay over and above a predetermined minimum price. The minimum price is an interest rate consisting of a six-month money market rate plus a premium set in advance of each auction. The premium and participants' bids over and above this premium are fixed for the life of the agreement. Participants nevertheless obtain a variable borrowing cost, as the money market rate used in the agreement is adjusted when the bills mature. The maturity of the agreements is up to five years. Throughout the period of agreement, participants must replace bills that mature with new bills with six months to maturity purchased from the government at their market price.

Interest payments from the OMFs are paid to the participants themselves. Once the swap agreements expire, the participants are to buy back the OMFs from the government at the same price at which they were sold. The participants receive interest on Treasury bills that they have chosen to hold to maturity. The price for the swap agreement is therefore the difference between the auction interest rate and the Treasury bill yield. A lower limit of 40 basis points has been set for this spread. This means that the auction interest rate will be at least 40 basis points above the Treasury bill yield received by the participants.

From August 2009, the prices for taking part in the arrangement were gradually adjusted upwards, and the final allocation was made in October 2009. The need for the arrangement fell back as scope for issuing OMFs in traditional investor markets improved.

[1] See Norges Bank's Circular 8 of 26 May 2009: The Arrangement for the Exchange of Government Securities for Covered Bonds. (Norwegian only)

themselves set the prices for trading in their own mortgage company's issues. Internationally, it is common for larger issues to have multiple market-makers. Arrangements of this kind with multiple market-makers per issue are expected to be introduced in Norway too in time.

International issuance

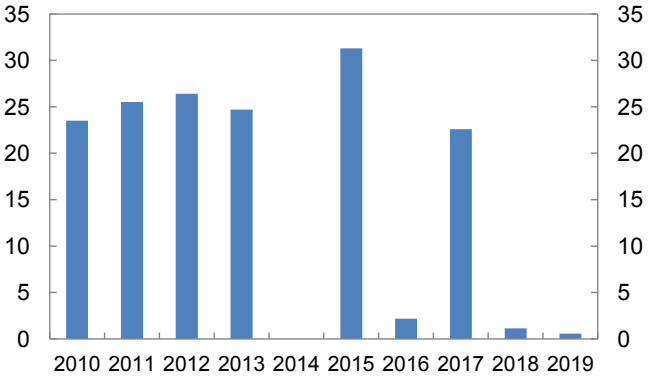
The largest Norwegian mortgage companies also issue OMFs in currencies other than NOK and list them on marketplaces outside Norway. To date, Bourse de Luxembourg has been an important marketplace for international issues of OMFs. More than 90 per cent of these issues are denominated in EUR, and a smaller proportion in CHF. Much of the volume currently outstanding matures by 2013 (see Chart 3.4). This is because maturities of three and five years dominated up until the financial crisis, and from September 2008 to August 2009 there were no international benchmark issues by Norwegian mortgage companies, as the government swap arrangement replaced normal market funding. In 2010, Norwegian mortgage companies have issued substantial volumes with a maturity of seven years (see Chart 3.5). The improvement in market conditions may pave the way for OMFs to be issued with longer maturities in the future.

Norwegian issuers obtain largely the same terms as comparable issuers elsewhere in Scandinavia. German Pfandbriefe have the lowest risk premiums, due partly to the size of the market and their long history (see section 1). As with most other securities, risk premiums rose markedly during the financial crisis (see Chart 3.6). They have subsequently stabilised, but at a higher level than before the crisis.

To obtain good terms in international issues, bonds must have a high credit rating, a sufficient volume and a fixed coupon. For bonds to receive a high credit rating from the credit rating agencies, they must meet more and stricter criteria than in the legislation. There may, for example, be requirements for overcollateralisation and strict criteria for liquidity management. The volume required to obtain good terms depends on the country in which the OMF is issued. If it is in the euro area, the best terms are for issues of at least EUR 1 billion. Volumes this large will lead to an unfavourable maturity structure (limited spread of maturities) for all but the largest mortgage companies.

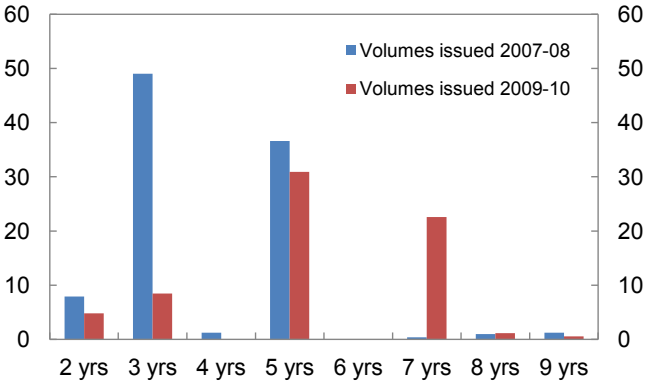
The Norwegian mortgage companies that have issued OMFs outside Norway so far have been awarded the highest or second-highest credit rating (AAA or AA). Few Norwegian banks have a credit rating, and none have a credit rating as high as the OMFs issued by their mortgage companies. A substantial proportion of the largest

Chart 3.4 Maturity structure of OMFs outstanding denominated in foreign currency. Translated into billions of NOK. Issuance from Q3 2007 – Q2 2010



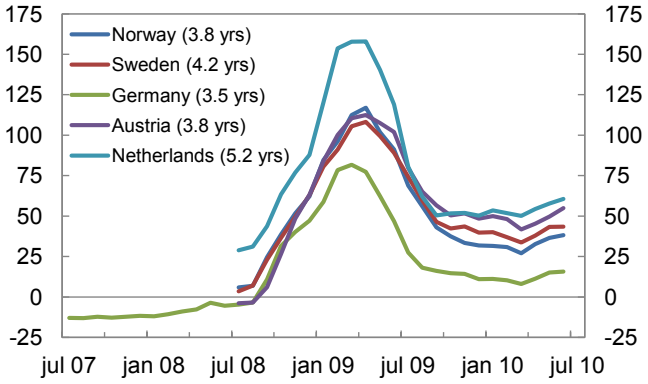
Sources: Bloomberg and Norges Bank

Chart 3.5 Maturity at time of issuance of OMFs denominated in foreign currency. Translated into billions of NOK. Issuance from Q3 2007 – Q2 2010



Sources: Bloomberg and Norges Bank

Chart 3.6 Risk premium for covered bonds denominated in EUR.[1] Time to maturity in brackets. Spread to swap rates. Basis points. July 2007 – June 2010



[1] iBoxx Euro Covered indices

Source: Markit

investors only buy bonds with the highest credit rating. As owner or part-owner of a mortgage company, Norwegian banks can obtain funding from such investors by having their mortgage companies sell OMFs to them. This helps to give the banks more diversified funding.

Mortgage companies that issue OMFs outside Norway are normally exposed to exchange and interest rate risk, as the bond is issued in foreign currency and at a fixed rate, whereas the loans in the cover pool generally attract a variable rate and are denominated in NOK. The mortgage companies can cap or eliminate this exchange and interest rate risk by entering into exchange and interest rate swaps. These swaps can generate both revenue and expenses for the mortgage companies. This will depend largely on market conditions, and access to willing counterparties varies over time.

Investors

The combination of low credit risk and slightly higher yields than on government bonds with an equivalent credit rating has helped to make covered bonds (including OMFs) an attractive investment for a broad range of investors, including banks, insurers, pension funds and various types of securities fund. Several of the largest investor groups are subject to rules on risk-weighting and investment limits. Covered bonds have a lower risk weight in the capital adequacy rules, and higher investment limits in the rules for insurance companies and securities funds, than traditional bank bonds do. New and planned legislative changes will probably lead to increased demand for covered bonds from banks and other financial institutions.

For banks as an investor group, it is important that the capital adequacy rules (Basel II) introduced in 2008 give a standardised risk weight of 10 per cent to covered bonds, compared to 20 per cent for unsecured bank bonds. Banks can also use their own models to calculate risk weights, which can result in a further reduction in the risk-weighting of covered bonds and unsecured paper. For Norwegian banks, it may also be significant that Norges Bank will not accept bank bonds as collateral after February 2012. Like most other central banks, however, Norges Bank will continue to accept covered bonds as collateral for loans. Banks can therefore obtain better access to loans from central banks by investing in covered bonds rather than bank bonds.

For insurers, the new solvency rules (Solvency II) coming in from 2013 in the EU and EEA countries will provide an incentive for increased investment in covered bonds.[11] While it has been usual for assets to be largely marked to market, the valuation of liabilities in many countries has been based on a fixed discount rate set by the authorities. The current rules mean that most insurers have a lower duration on their assets than on their liabilities. Under the new rules, both assets and liabilities will be marked to market. The value of liabilities will therefore vary more than today. To ensure a good correlation between assets and liabilities, insurers can increase the duration of their assets, partly by investing in covered bonds with a long maturity.[12] Like banks, insurers will be able to reduce their capital requirements by investing in covered bonds rather than private assets with a higher risk weight.

4. Risk and valuation

For the investor, the risk associated with OMFs comprises the risk of an issuer failing to make timely payments and the risk of the investor not having the whole of his claim covered in the event of the bond being cancelled. The flipside of this risk is the risk to the issuer of the cover pool not being sufficiently good and the risk associated with financing the cover pool. This section looks at the main risks faced by issuers and discusses the degree to which these can entail a risk for investors. Systemic risk and the significance of OMFs as a funding source for financial stability are discussed in section 5.

Risk of loss of principal – credit risk

One significant feature of OMFs as a financial instrument is that they are subject to rules ensuring moderate or low credit risk. This is achieved partly by giving holders of OMFs a preferential claim ahead of other creditors to a specific part of the issuer's assets, and partly by setting special requirements for the size, content and credit quality of the assets making up the cover pool.

In Norway, as mentioned previously, the bank's assets are separated out, with a special mortgage company taking over the cover pool and issuing the OMFs. In some countries, the bonds are issued by the bank itself and remain on the bank's balance sheet. In others, including Denmark and Sweden, the legislation allows both possibilities. Covered bonds on the bank's balance sheet give investors a claim on both the cover pool and the bank's other assets if the bond is cancelled. The advantage of having a claim on more assets may be offset by investors being exposed, to some extent, to the risk associated with the bank's other activities. A mortgage company often has fewer assets outside the cover pool, but its operations are subject to

[11] It has not been decided whether Finanstilsynet in Norway will make the new solvency rules apply in full or in part to pension funds.

[12] See Financial Stability 1/10 from Norges Bank for a discussion of Solvency II and its consequences for banks.

more stringent regulation. This limits the mortgage company's scope to take on risk and makes it easier for the investor to assess the company's financial strength.

Whichever way the issuance of covered bonds is organised, there have been few historical instances of issuers of these bonds having problems with financial strength. Experience from the downgrading of a German mortgage bank[13] in 2005 suggests that changes in an issuer's credit rating have little effect on the credit risk associated with covered bonds. This may, however, have changed since the financial crisis.

Under Norwegian rules, the cover pool can consist of residential and commercial mortgages up to a set LTV and loans issued or guaranteed by public authorities. Besides limits on the maximum LTV for loans in the cover pool, some countries require overcollateralisation. In other words, the authorities require the value of the cover pool to exceed the value of covered bonds outstanding by a certain amount. This helps to reduce the risk of investors incurring losses if a situation arises where the issuer cannot meet his obligations and the cover pool needs to be realised. There is no overcollateralisation requirement in Norway, but most of the large issuers still overcollateralise in order to obtain a good credit rating.[14]

Although the cover pool for OMFs consists largely of residential mortgages with a low LTV, one significant risk factor for holders of OMFs will be a sharp drop in property prices combined with macroeconomic conditions that increase the probability of borrowers defaulting on their loans (see box on the effects of a drop in house prices).

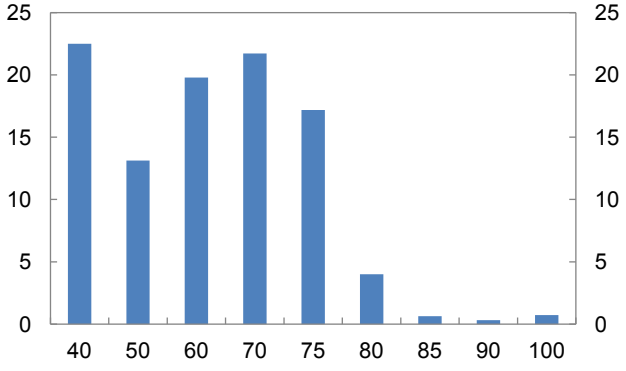
How will a drop in house prices affect OMFs?

How a drop in house prices will affect OMFs depends partly on the LTV of the loans in the cover pool, the degree of overcollateralisation and the mortgage company's liquidity (substitute collateral). To illustrate how an OMF might be affected by a drop in house prices, we have taken the cover pool for a selection of Norwegian residential mortgage companies at the end of 2009. The sample covers around 95 per cent of the total volume of OMFs outstanding at that time. The average LTV for the residential mortgages in the cover pool was just under 60 per cent.[1] More than 22 per cent of the mortgages had an LTV of less than 40 per cent (see Chart 1).

In isolation, a drop in house prices will increase mortgages' LTV. If the LTV passes the maximum limit of 75 per cent, the part of the loan in excess of the limit will not count when calculating whether the size of the cover pool meets the statutory requirements. The total of the loan nevertheless remains on the mortgage company's

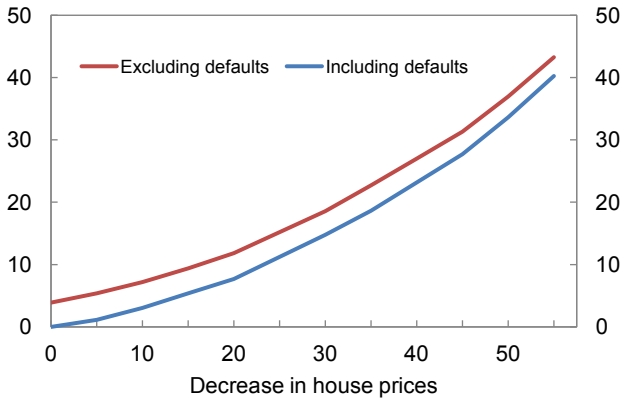
[1] In this calculation, all mortgages with an LTV of 40 per cent or less have been given an LTV of 40 per cent.

Chart 1 Cover pool by LTV. Selected residential mortgage companies.
Per cent. 31 December 2009



Source: Norges Bank

Chart 2 Reduction in eligible cover pool after drop in house prices. Selected residential mortgage companies.
Per cent. 31 December 2009



Source: Norges Bank

[13] In March 2005, Moody's downgraded long-term deposits at the German bank Allgemeine Hypothekenbank Rheinboden AG (AHBR) by two notches to Baa3. Packer et al. (2007) found that the risk premium on covered bonds issued by AHBR during the period was not higher than changes in the risk premium on other covered bonds would imply.

[14] The Norwegian rules impose a matching requirement, or "balance principle", which means that the value of the cover pool (asset side) must at all times exceed the value of the covered bonds (liability side) (see section 2-31 of the Financial Institutions Act).

balance sheet (see section 2). Changes in house prices do not lead to a proportional change in the eligible cover pool. In our example, a 10 per cent drop in house prices reduces the eligible cover pool by just over 3 per cent, whereas a drop in house prices of 30 per cent gives a reduction of just under 15 per cent (see Chart 2). The reason for this is that many of the mortgages have a low LTV in the first place. The larger the fall in prices, the larger the proportion of mortgages that will exceed the maximum limit for LTV.

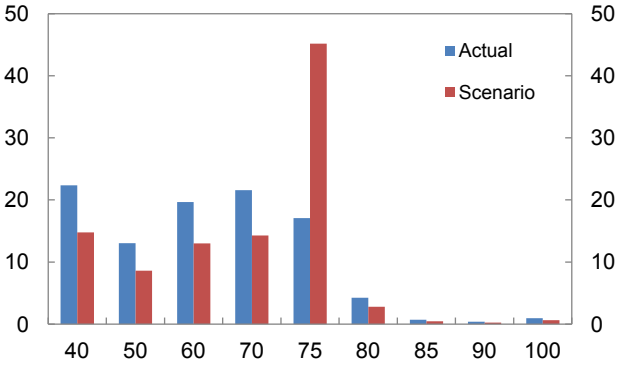
It may be reasonable to expect that a decline in house prices will coincide with macroeconomic developments that bring increased mortgage defaults, and that the proportion of non-performing loans will be higher among loans with a high LTV. The red curve in Chart 2 shows how the eligible cover pool will shrink if there is a default rate of 3 per cent for loans with an LTV up to 60 per cent and 5 per cent for other loans. By way of comparison, the default rate was just over 6 per cent for loans to households during the bank crisis in 1991. Under these conditions, a 20 per cent drop in house prices causes the cover pool to be reduced by almost 12 per cent.

At the end of 2009, OMFs backed by residential mortgages worth around NOK 400 billion had been issued. If we ignore overcollateralisation and assume that the overall cover pool has the same LTV as our sample, a 20 per cent drop in house prices will mean that the mortgage companies have to replace around NOK 30 billion of the cover pool. If we also assume default rates as described above, the corresponding figure is around NOK 47 billion. Mortgage companies have a number of options in such a situation: they can bring in new residential mortgages, top up their substitute collateral, or buy back bonds outstanding.

It is reasonable to assume that the market for OMFs will grow in the years ahead. If this happens, the mortgages transferred to mortgage companies will probably have a higher LTV than those currently in their cover pool. Chart 3 shows the cover pool in a scenario where mortgages with a value of NOK 200 billion are transferred to the mortgage companies on top of the holdings they had at the end of 2009. We assume that the new loans have an LTV of 75 per cent. The average LTV for the cover pool then rises to 65 per cent. A drop in house prices will therefore lead to a larger reduction in the eligible cover pool. Ignoring any overcollateralisation and assuming the same default rates as above, a 20 per cent drop in house prices will reduce the eligible cover pool by almost 16 per cent (see Chart 4).

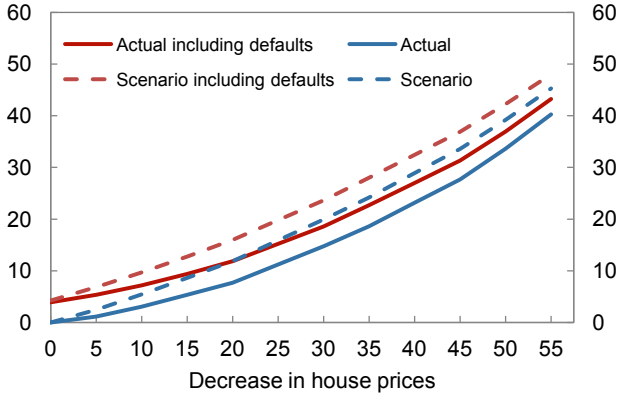
Overcollateralisation makes it easier for mortgage companies to comply with statutory requirements following a decrease in house prices. Several Norwegian mortgage companies currently have a high credit rating, due partly to overcollateralisation. In many cases, the cover pool can cover OMF holders' claims even if the statutory requirement is not met. A weakening of the cover pool as a result of a drop in house prices could, on the other hand, lead to downgrades and a decrease in market value unless the banks and mortgage companies can take actions to defend the credit rating.

Chart 3 Cover pool by LTV. Selected residential mortgage companies.
31 December 2009 and scenario. Per cent



Source: Norges Bank

Chart 4 Reduction in eligible cover pool after drop in house prices. Selected residential mortgage companies. 31 December 2009 and scenario. Per cent



Source: Norges Bank

Risk of failure to make timely payments

The assets in the cover pool will normally have a longer scheduled maturity than the bonds issued by the mortgage company. At the same time, some mortgage companies issue fixed-rate OMFs while the loans in the cover pool carry a variable rate of interest. Differences in maturities and interest terms give rise to a risk of the mortgage company not having sufficient liquidity to fulfil its obligations at all times. However, the mortgage companies use derivative contracts to ensure a match between interest payments on the asset and liability sides of the balance sheet. Mortgage companies that issue OMFs in foreign currency also hedge exchange rate risk using derivative contracts.

If the cash flows from the assets in the cover pool do not arrive at the agreed time, the mortgage company may not be in a position to make timely payments to bondholders. Examples of this are where counterparties in derivative transactions do not pay on time, and where loans in the cover pool are not serviced. A mortgage company can also have problems making timely payments to bondholders if the company is unable to issue new OMFs when existing ones mature. This form of refinancing risk is probably the most important risk factor associated with OMFs as an investment.

To reduce the risk of payments not being made in a timely fashion, Norwegian mortgage companies are subject to liquidity requirements. These mean that the mortgage company must create a liquidity reserve for inclusion as substitute collateral in the cover pool, and that limits are to be set for the maximum deviation between future inward and outward payments. Stress tests must also be performed to document that liquidity reserves are adequate at all times. Substitute collateral can make up a maximum of 20 per cent of the nominal value of the cover pool and can consist of various types of securities and bank deposits that meet specific requirements for low risk. The types of instruments that mortgage companies choose to use as substitute collateral could affect their liquidity risk.

OMFs with a good credit rating from a credit rating agency are subject to more stringent requirements for liquidity management than laid down in law. To obtain a high credit rating, the mortgage company must, for example, be able to demonstrate that it can make scheduled payments even if it is unable to obtain new financing for periods of various lengths. This means that the liquidity risk associated with OMFs with a good credit rating is generally lower than for those that merely meet the statutory requirements.

A mortgage company can ensure that it has sufficient liquidity to make timely payments to bondholders in a number of ways:

- *Balance sheet management.* The mortgage company's ability to achieve the best possible balance between maturities on the two sides of the balance sheet will be important in limiting the risk of failing to make timely payments to investors.
- *Overcollateralisation.* If the value of the cover pool is greater than the value of the OMFs, the ongoing cash flow from the assets will normally be greater than the ongoing payments to bondholders. With overcollateralisation, the mortgage company will also be free to sell substitute collateral, which must, by law, consist of particularly secure and liquid assets.
- *Soft bullet maturity.* This means that the mortgage company can defer the scheduled maturity of an OMF, giving it more time to sell assets from the cover pool or obtain liquidity in some other way so that it can fulfil its obligations to investors.
- *Credit lines.* If the mortgage company has access to liquidity through credit lines from a bank, it will more easily be able to make payments in a situation without cash flows from its other assets. Normally a mortgage company will have credit lines from the bank from which the loans were transferred.
- *Interest rate adjustments.* Unlike covered bonds issued in other countries, the cover pool for Norwegian OMFs consists mainly of variable-rate loans. This gives the mortgage company the option of boosting cash flows by raising the interest rates on loans in the cover pool. If borrowers decide not to make these higher interest payments but to transfer their loans to other lenders to get better terms, the mortgage company will receive liquidity in the form of principal. This means that issuers in Norway have greater scope to obtain liquidity than issuers in countries where the cover pool consists of fixed-rate loans. In some cases, the credit rating agencies attach considerable importance to this possibility in their assessment of liquidity risk.

Counterparty risk for the mortgage company

Mortgage companies that issue OMFs and use derivatives to manage their liquidity and currency risk run the risk of the counterparty in these contracts being unable to discharge its obligations. The size of this risk depends on the extent of such contracts and the creditworthiness of the counterparty. The loans in Norwegian mortgage companies' cover pools generally carry a variable rate of interest. Issues of floating-rate OMFs in the Norwegian market do not therefore require the use of derivative contracts. However, the largest mortgage companies' issues outside Norway are in a currency other than NOK and have a fixed coupon. This makes them dependent on

exchange and interest rate derivatives. Most Norwegian mortgage companies that issue OMFs in foreign currency have considerable experience with this type of derivative contract. Assessment of counterparties is therefore part of the group's normal operations and risk management. In addition, the risk associated with these derivatives is reduced by the mortgage companies having entered into agreements with their counterparties on the provision of collateral (credit support).[15] Experience from the financial crisis has shown that counterparty risk can be a significant risk factor, and that spreading risk across multiple counterparties can be beneficial.

Legal risk

The rules for OMFs entered into force on 1 June 2007 and have therefore not been in effect for long. Nor are there any precedents for how the rules are to be applied in the case of various credit events. In isolation, this would suggest that the legal risk associated with Norwegian OMFs is higher than for equivalent securities issued in countries where the legislation has been in place for a long time. On the most important points in terms of risk, however, the Norwegian rules differ little from those in, say, Germany, where bonds of this type have a very long history. The credit rating agencies stress that one important legal issue is whether the cover pool is sufficiently segregated from the other assets of the group to which the mortgage company belongs that investors can be sure that third parties will not be able to force them to participate in debt settlement proceedings in the event of bankruptcy. The Norwegian legislation has to be assumed to protect investors' interests adequately in this respect, partly through the appointment of a separate administrator for the mortgage company to work with a creditors' committee on which the holders of OMFs are well-represented.

Credit rating agencies' assessment of covered bonds

A good credit rating from at least two of the recognised credit rating agencies is essential for being able to issue covered bonds (including OMFs) on favourable terms in the European market. The most frequently used credit rating agencies are Standard & Poor's, Moody's and Fitch. Their ratings say something about the probability of payments to bondholders being made in a timely fashion, and about the size of losses if a bond is cancelled.

The agencies' rating methods are not identical, but all cite three factors as particularly important in their assessments:

- Issuer's credit rating
- Quality of cover pool and its ability to generate adequate cash flows
- Clear segregation of cover pool from issuer's other assets

To some extent, the agencies adopt a different approach when assessing covered bonds. **Fitch** divides the process into three steps. In the first, it sets a credit rating for the issuer ("Issuer Default Rating") and estimates the probability of timely payments being made to bondholders even if the issuer becomes insolvent ("Discontinuity Factor"). In the next step, there is an assessment of whether the cover pool will generate sufficient cash flows to make timely payments to bondholders for the life of the bond in various stress scenarios. Based on this analysis, the credit rating can be set higher than the rating for the issuer. How much higher depends on the size of the Discontinuity Factor. In the third step, it is assumed that the bond is cancelled and the cover pool is sold. If these analyses show that bondholders' claims can be met through the proceeds of such a sale, this will result in a higher credit rating than in step 2.

The credit rating process at **Moody's** can be divided into two steps. First, the probability of the issuer becoming insolvent and the strength of the cover pool are assessed. By multiplying the probability of the issuer becoming insolvent by the potential losses to bondholders if the issuer becomes insolvent, Moody's obtains an "Expected Loss". The size of the loss associated with a bond will depend partly on the quality of the assets in the cover

[15] This process is normally regulated by a Credit Support Annex (CSA) in which the parties agree to post collateral if net exposures exceed a set limit.

pool and the degree of overcollateralisation. The second step is to assess whether timely payments can be made to bondholders even if the issuer becomes insolvent ("Timely Payment Indicator"). The higher this indicator, the more the credit rating for the bond can exceed the credit rating that Moody's gives the issuer. Moody's starts with the Expected Loss when issuing a credit rating, but the use of the Timely Payment Indicator means that the ability to make timely payments is also taken into account.

Standard & Poor's first divides covered bonds into three risk categories. The category to which an issuer is assigned depends on the quality of the solutions established for ensuring timely payments and the jurisdiction in which the bond is issued. Standard & Poor's attaches importance to the legislation having a long history and adequately safeguarding investors' interests. It then gives the issuer a credit rating, which forms a floor for the bond's rating. Finally, Standard & Poor's assesses how many notches the credit rating can be raised as a result of bondholders having a preferential claim to the cover pool. For a covered bond in category 1, there is no restriction on the number of notches because it is not associated with any form of uncertainty about the cover pool, whereas covered bonds in categories 2 and 3 are subject to an upper limit on the amount of uplift.

All three credit rating agencies publish detailed descriptions of the process used to rate covered bonds on their websites.

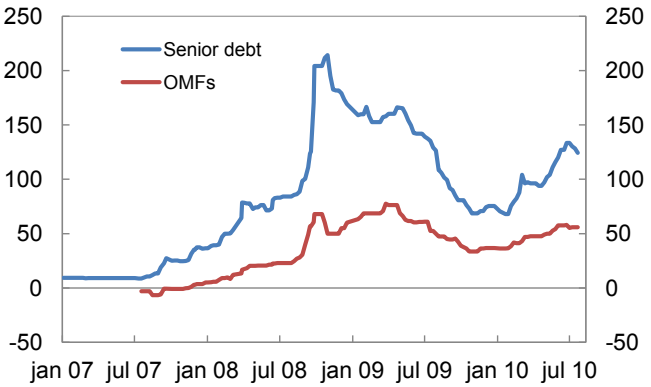
Valuation

The risks described above suggest that covered bonds (including OMFs) should, in the first instance, be priced at a lower yield than unsecured debt issued by the same group to which the mortgage company belongs. This is reflected in observed market prices (see Chart 4.1). Traditional securitisation of the cover pool through structures such as CDOs and ABSs (see box) should also be valued at a higher yield than covered bonds with the same cover pool.

To date, theoretical pricing models have been used to only a limited extent in the valuation of covered bonds. There are several possible reasons for this. How the cover pool is segregated from other creditors, and how it is supported by the arranging bank within the group, vary in the legislation from country to country and between groups in the same country. This makes it difficult to model the value of covered bonds in a standardised manner. There is also little in the way of legal precedents for how covered bonds are treated in the event of bankruptcy, and there are only a few known historical cases of issuers of covered bonds becoming insolvent. This serves to complicate the estimation of parameters in the models.

From being viewed as a substitute for government securities, experience from the turmoil in financial markets in recent years has shown that investors now increasingly see covered bonds as instruments with limited but not negligible credit risk. This may herald a sharper focus on valuation and modelling of the risk associated with covered bonds in the future.

Chart 4.1 Risk premium for OMFs and senior debt issued by financial institutions. Spread to swap rates. Five-year maturity. Basis points. January 2007 – July 2010



Source: DnB NOR Markets

5. OMFs and financial stability

Financial stability implies that the financial system is robust to disturbances in the economy and can channel capital, execute payments and redistribute risk in a satisfactory manner. Banks play a key role in both credit provision and payment services, and are therefore important for financial stability. The option of issuing OMFs helps to make Norwegian banks more robust:

- Issuing OMFs can give banks more sources of funding and better access to funding. Experience from other countries shows that bonds of this type

are easier to issue and trade than unsecured bank bonds in periods of turmoil. This was also the case for Norwegian banks during the financial turmoil from 2007 to 2009, although demand for covered bonds (including OMFs) too was greatly reduced and evaporated completely for a while. There were no defaults on covered bonds during the turmoil, which suggests that investors will retain their confidence in these bonds.

- OMFs are often issued with longer maturities than normal bank bonds and so require less frequent refinancing. While an ordinary bank bond rarely has a maturity of more than five years, OMFs can, in some cases, have maturities of 20 years. Better access to financial markets and longer bond maturities can strengthen banks' financial position in a severe economic downturn.

- Issuing OMFs can help improve banks' procedures for issuing and monitoring loans. The law requires that residential and commercial mortgages in the eligible cover pool[16] have a certain maximum LTV and must not be in default. Under the law, mortgage companies issuing OMFs must monitor the market value of all of the properties underlying the loans in the cover pool, and which loans are in default. Better information about the loan portfolio could strengthen banks' risk management.

The emergence of a market for OMFs may also contribute to a better-functioning Norwegian bond market. A broader range of instruments gives investors better opportunities to achieve the desired balance of risk and expected return. OMFs can be an important investment option for investors wishing to hold securities denominated in NOK with limited credit risk. Investors can also achieve greater diversification.

New instruments and funding types can also present new challenges for investors and issuers in terms of risk management and valuation:

- Banks will transfer residential and commercial mortgages with a low LTV to mortgage companies. This means that banks' own assets will, on average, carry a higher risk. This problem is offset by banks having to hold more capital for high-risk loans under the capital adequacy rules.

- Depositors and other creditors may be less willing to make unsecured loans to banks which have transferred parts of their assets to mortgage companies. Market terms for banks' unsecured bonds may therefore be less favourable than before, and depositors may transfer their deposits to other banks. Banks can limit problems of this kind by ensuring good financial strength and good liquidity management.

- Banks could replace bonds they hold today with OMFs from their own mortgage company. Because banks and mortgage companies often have exposure to the same customers, banks may well be affected in more ways than before if customers do not service their loans. The OMFs owned by the bank may be worth less, and at the same time the banks will have to take action to assist the mortgage company. Banks can limit this problem by not investing in OMFs issued by their own mortgage company.

Several of these risks are mitigated through banks' own risk management, criteria from the credit rating agencies, and supervision by the Norwegian authorities. On balance, therefore, the option of issuing OMFs will help to strengthen financial stability in the long term as well.

6. Summary

Legislation enabling banks to set up mortgage companies to issue OMFs was introduced in Norway in 2007. The Norwegian rules have clear similarities with those for covered bonds in other European countries. OMFs have quickly become an important source of funding for Norwegian banks. They are an investment with low credit risk which may be important for insurers and other financial institutions, among others, in the years ahead. The risk of the mortgage company being unable to make timely payments is probably the most important risk factor faced by investors in OMFs. The Norwegian market is somewhat immature but growing at present, and the majority of domestic issues have been as part of the government swap arrangement. The largest Norwegian mortgage companies have a good credit rating and achieve good terms when issuing in international markets. OMFs have proved robust in periods with shocks to the financial system, and giving banks the option of funding their operations using OMFs is making a positive contribution to financial stability.

[16] Eligible cover pool denotes the assets in the cover pool that qualify when calculating whether the value of the cover pool exceeds the value of the outstanding covered bonds, as is required by law.

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