The Swedish covered bond market and links to financial stability

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The covered bond market is large in Sweden, and such bonds is one of the primary funding sources of Swedish banks. The covered bond market is thus of great significance to the Swedish financial system.

This article consists of two parts. The first part describes what characterises a covered bond, how the Swedish market is structured and the financial infrastructure surrounding trade in covered bonds. Covered bonds are characterised by increased safety for the investor by a claim both on the issuer and on an underlying cover pool. In Sweden, this cover pool mainly consists of Swedish mortgages. The Swedish covered bond market features large bond issuances, frequent small on-tap issues and market makers who quote prices on the secondary and repo markets.

The second part discusses links between the banks' use of covered bonds and financial stability. We demonstrate how the covered bond market is important to the major Swedish banks in terms of their funding and in their role of market makers. The banks are hence negatively affected when the market comes under stress, which occurred in connection with the global financial crisis that started in 2007.

The use of covered bonds has the advantage of contributing to lower funding costs for the banks. As previously described by the Riksbank, the banks' extensive funding through covered bonds is however associated with certain weaknesses. Since the covered bonds finance mortgages with considerably longer maturities, a risk arises that the bank cannot roll-over its mortgage funding. This liquidity risk is even greater for the banking system as a whole, among other things due to that banks own each other's covered bonds. The government deposit guarantee scheme and expectations about authority actions can also contribute to market participants failing to sufficiently take into account the risks associated with covered bonds. Renewed stress on international capital markets and reduced confidence in Swedish covered bonds, for example due to a drop in domestic house prices are factors that could lead to a deterioration in the functioning of the market.

* We would like to thank the market participants who provided interviews and information for this article. We would also like to thank Jonas Söderberg, Jonny Sylvén, Martin Liljeblad, Claes Berg, Olof Sandstedt, Kerstin Hallsten, Mia Holmfeldt, Lisa Marklund, Per Sonnerby and Pia Kronestedt Metz for their valuable input.

Swedish covered bonds

In this article, Swedish covered bonds refers to covered bonds that have been issued in accordance with the Swedish legislation regarding covered bonds. Swedish banks also issue covered bonds in other countries under the legislation of such countries[1]. Issues under the laws of other countries are normally secured by assets in those countries. It also occurs that foreign credit institutions issue covered bonds in Swedish kronor under non-Swedish legislation.[2] This study is, however, limited to bond issues by Swedish issuers under Swedish law.

WHAT IS A COVERED BOND?

Covered bonds work like ordinary bonds in many respects. They have a fixed maturity and the notional amount is repaid at maturity. However, covered bonds have a number of distinctive characteristics compared with other types of bonds.

Firstly, covered bonds are regulated by law while traditional bank bonds are only regulated by contracts between issuer and investor. Each country has its own covered bond legislation, so the bonds differ from country to country. There are, however, standard-setting regulations at EU level.[3]

Secondly, a covered bond holder has a claim both on the issuer and on an underlying cover pool. This means that the investor has priority with respect to a specific pool of assets in the event of the bankruptcy of the issuing institution. The legislation regulates, for instance, which assets may be included in the cover pool and how it may be compiled. With traditional bank bonds, the holder usually only has a claim on the issuer.

Thirdly, the cover pool linked to the covered bond is dynamic. This means that assets which are not up to scratch must be removed from the cover pool. If needed, new assets must be added.

Fourthly, the assets in the cover pool and the credit risk of the assets remain on the issuer's balance sheet. The issuer is thereby affected by the credit quality of the underlying assets throughout the entire life of the assets, which gives a greater incentive to perform a sound credit risk assessment.

For bonds secured by assets, which come about through securitisation, the investor also has a claim on a specific pool of assets. Such bonds are called MBS (mortgage-backed securities) when they are secured by mortgages, and ABS (asset-backed securities) when they are secured by other assets.

1 The issued amount is at SEK 270 billion according to SNL.
2 The issued amount is at SEK 27 billion according to Dealogic.
3 The standard-setting regulations are the UCITS directive and the capital requirement directive CRD IV. The interest group for European issuers, the European Covered Bond Council (ECBC), has also prepared a standard regarding which securities can constitute covered bonds.

Unlike a covered bond, the assets that constitute underlying collateral can be detached from the issuer's balance sheet when MBS are issued.[4] The investor thus no longer has a claim on the issuer, but only on the underlying collateral. The credit risk is then transferred to the investor when the latter acquires the bond. For MBS where the assets are detached from the issuer's balance sheet, incentives to perform a sound credit risk assessment are not as strong as for covered bonds.

Unlike for a covered bond, the cover pool for MBS is often static. So, the cover pool assets are not necessarily replaced if the asset quality deteriorates.

The fact that covered bonds provide a claim both on the issuing institution and the underlying cover pool reduces the investors' risk of losses compared to if the investors only had a claim on the issuer. Hence, the investors do not require as high a return on covered bonds as on traditional bank bonds. Investors' risk of losses in the event of the issuer's bankruptcy is also determined by the quality of the assets in the cover pool. Because the assets remain on the issuer's balance sheet, the latter has reason to place assets with high credit-quality in the cover pool. On the whole, this contributes to the bank's ability as a rule to obtain funding at a lower cost through covered bonds compared with other types of bonds.

Swedish covered bond legislation

In the 1990s and 2000s, an increasing number of European countries implemented separate legislation regarding covered bonds. In order to avoid a competitive disadvantage for the Swedish banks, Swedish covered bond legislation was introduced in 2004.[5]

Since the introduction of the legislation, banks and credit market firms have had the possibility of applying to Finansinspektionen for authorisation to issue covered bonds under the law. A condition for the authorisation was that all so-called mortgage bonds be converted to covered bonds. Between 2006 and 2008, Swedish banks converted their mortgage bonds to covered bonds.

The law defines which of the bank's assets may be included in the cover pool, and regulates the loan-to-value ratio of the loans included. The assets permitted are mainly credits for homes, agricultural properties and commercial properties located in the European Economic Area (EEA). Loans for commercial properties may, however, only make up 10 per cent of the collateral value. Credits to the public sector, such as municipalities, are also permitted. Also, up to 20 per cent of the cover pool value may consist of other liquid assets such as cash, government securities and covered bonds issued by other institutions. These are called substitute collateral.[6] In practice, the underlying collateral mainly consists

4 The bank sell the assets to a special bond-issuing company.

5 Covered Bonds (Issuance) Act (2003:1223). The legislation was preceded by discussions that spanned several years. It can be noted that the Riksbank was initially negative to separate covered bond legislation.

6 If there are special grounds, Finansinspektionen can authorise allowing substitute collateral to constitute up to 30 per cent of the cover pool.

of Swedish housing loans. The quality of the banks' cover pool is thus strongly linked to the ability of households to repay their mortgages.

The requirements set by Swedish law on loan-to-value ratio for the credits in the cover pool are not as strict as in Germany, but more strict than in many other countries.[7] For housing loans, the highest permitted loan-to-value ratio is 75 per cent of the market value. For agricultural properties it is 70 per cent, and 60 per cent for commercial properties. If the loan-to-value ratio of a certain credit exceeds the highest permitted loan-to-value ratio for the cover pool, the issuer may include the share of the loan which is below the highest permitted loan-to-value ratio in the cover pool. The same applies should the market value of the properties that constitute underlying collateral for the loans decline.

The law also states that the notional value of the collateral must, on an ongoing basis, at least equal the notional value of the outstanding covered bonds for each issuer. The issuer must therefore keep a register of the underlying collateral and the issued covered bonds and related derivative contracts.

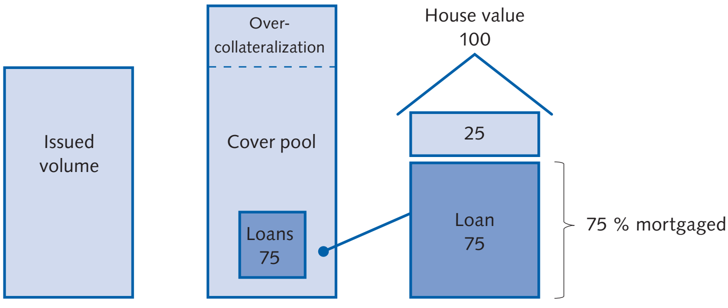
Finansinspektionen is responsible for ensuring compliance with the Swedish Covered Bonds Act. To assist it, Finansinspektionen has independent inspectors who mainly monitor the issuer's register of underlying collateral. The collateral that exceed the required amount is called overcollateralization. Figure 1 shows the cover pool principle.

Finally, the Act regulates what happens in the event of an issuer entering bankruptcy and no longer being able to meet its obligations towards its creditors. In this event, the assets that constitute the underlying cover pool must be kept apart from the other assets of the bankruptcy estate. A person who has invested in covered bonds is entitled to payment out of these assets. If the cover pool assets do not suffice, investors in covered bonds have the same entitlement to payment out of the rest of the bankruptcy estate as the issuer's other creditors.[8]

7 According to the European Covered Bond Council, the LTV requirement for housing loans in Germany is 60 per cent, in Denmark 75 or 80 per cent, in the UK 80 per cent and in France 80 per cent. In Spain, there is an implicit LTV requirement of 80 per cent.

8 In 2010 the Act was amended to enable the party managing the issuer's bankruptcy estate to enter agreements on behalf of the underlying cover pool. This meant that the manager could, for instance, raise financing and enter derivative contracts to manage the underlying collateral and hence be able to sell the collateral in an orderly manner more easily.

Figure 1. Cover pool illustration



THE SWEDISH COVERED BOND MARKET[9]

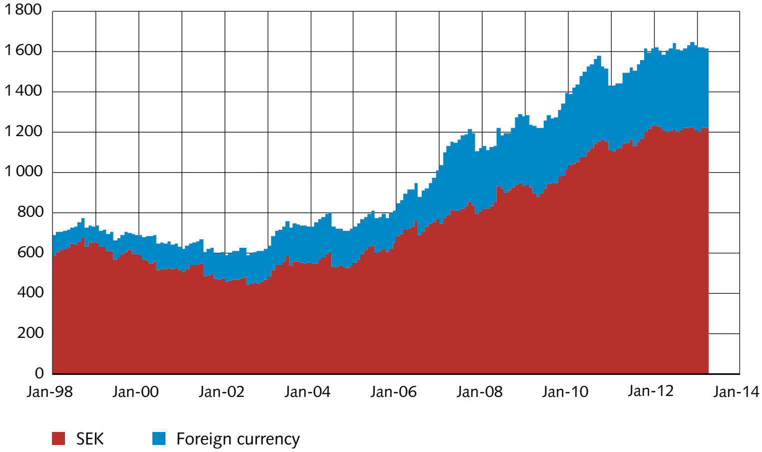
Sweden has a long tradition of mortgage funding through mortgage institutions which have issued so-called mortgage bonds since the early 1900s. These bonds were formally not secured but could largely be equated to bonds collateralized by mortgages, the reason being that, in practice, investors would be entitled to the mortgages on the institution's balance sheet in the event of the issuer's bankruptcy. The covered bond market originates from what used to be the mortgage bond market.

The Swedish covered bond market has grown sharply in the 2000s, mainly due to the increased mortgage lending of banks (see Chart 1). The total outstanding volume of Swedish covered bonds currently amounts to SEK 1,940 billion, which also equals just over half of Swedish GDP. It is thus bigger than the Swedish government securities market, which amounts to around SEK 1,190 billion.

For covered bonds backed by mortgages, the Swedish market is the fourth largest globally after Spain, Denmark and Germany. The Swedish market is also the fifth largest globally in terms of covered bonds backed by all asset types. The majority of Swedish covered bonds is issued in Swedish kronor (75 per cent) while the remaining bonds are mainly issued in euro (18 per cent).

9 Parts of this section are based on interviews with market participants.

Chart 1. Outstanding volumes of Swedish covered bonds
SEK billion



Note. Before 2006 the data refers to mortgage bonds. Bonds issued by SEB are not included after 2007 since the mortgage institution was merged with the mother company.

Sources: Financial markets data and Statistics Sweden

The market structure

There are currently seven banks and credit institutions[10] on the Swedish market which issue covered bonds to fund their operations (read more in the section about issuers). On the market in Swedish kronor, the majority of bonds are traded in large issuances that comply with a certain standard. These bonds are called benchmark bonds and usually have maturities of between one and six years.[11]

For these bonds, new issues can be carried out under existing issuances, known as *on-tap issues.* The secondary market is maintained by *market makers.* The system of market makers and on-tap issues is relatively uncommon compared to markets in other countries.

Market makers[12] play a key role on the Swedish market. They consist of a special function in the capital markets departments of banks, with the task of maintaining liquidity on the secondary market, that is, in trade between different investors. Market makers also sell bonds on the primary market, that is, when issuers issue bonds to investors.

The business model of the market makers largely involves making money on the spread between the bid and offer price of bonds. Through an agreement with the issuer, they have undertaken to continually quote bid and offer prices on the secondary market for benchmark bonds.[13] Indicative prices are possible to follow on electronic information

10 Swedbank hypotek, Stadshypotek (Handelsbanken), Nordea hypotek, SEB, Swedish Covered Bond Company (SCBC) a subsidiary of SBAB, Landshypotek and Länsförsäkringar. In 2013, Skandiabanken has also been granted authorisation to issue bonds.
11 In this article, benchmark bond on the Swedish market refers to a bond traded through market makers.
12 On the market for Swedish covered bonds issued in Swedish kronor, there are currently six market makers – the four major Swedish banks, Danske Bank and Nykredit.
13 Not all market makers necessarily have agreements with all issuers.

systems and, upon request, the market makers provide the prices applicable to an actual transaction.

The undertaking implies that everybody who invests in a covered bond have the possibility of selling their holdings to the market makers if needed. In this way, liquidity is maintained on the market. In order not to be left with large holdings, the market makers can sell the bonds on. They can also fund the holding through, for instance, a repo, that is, by exchanging the bonds for Swedish kronor for a predetermined period, then exchanging them back again.

Issues on the primary market

When a credit institution intends to issue a new bond, the institution approaches one or more of its resellers, who are given the task of preparing terms and conditions ahead of a bond sale. The resellers are also usually market makers on the Swedish bond market. The amount a bank needs to issue is determined by the funding requirement. The issuer keeps in regular contact with the market maker in order to get a sense of demand and to time the issue well.

Usually, issuers repurchase a large share of the bonds around nine to twelve months before they mature. Investors are then offered the possibility of exchanging the maturing bond for one with a longer maturity at current yield. A reason for doing it like this is that the issuer wants to reduce the risk of inability to refinance the maturing bond.

Covered bonds in Swedish kronor that are not benchmark bonds are also issued. This occurs, for instance, when investors want a type of bond other than what is already available on the market, for instance with a longer maturity. Usually, such bond types are never traded on the secondary market. However, the issuer can offer to repurchase the bond as maturity approaches.

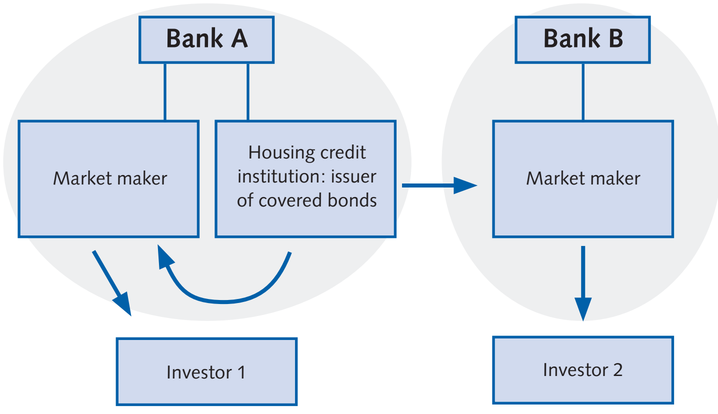
On-tap issues

After the initial issuance, further amounts can be issued under the same bond issuance; these are known as on-tap issues. New bonds are thus issued in the framework of the same agreement, on the same terms. The only new feature is the price (yield) which is adapted to the prevailing market situation.

When demand is deemed good, the issuer can decide to carry out an on-tap issue. This is carried out in accordance with the base agreement previously signed between the issuer and the market maker and, thanks to standardised documentation, the procedure can take place within a day. If on-tap issues occur on the initiative of the issuer, the latter can offer all market makers the opportunity of selling the bond on to investors. The market makers then in turn contact investors with information about the volume being sold and at what price. Issues can also occur on the initiative of investors, who approach the market maker and request a certain volume in a specific issuance. The issuer can then carry out a private placement for the investor through a market maker.

Through the Swedish system, in which small on-tap issues are carried out on a daily or weekly basis, the issuer can constantly adjust covered bond supply to market demand. This also helps to maintain trade. Figure 2 illustrates the flows in an issue.

Figure 2. Issues and the division of roles – an overview



Swedish covered bonds in currencies other than Swedish kronor

The Swedish banks obtain funding in foreign currency in order to diversify the risk in their funding, and because they need foreign currency. It has also been profitable at times. One quarter of Swedish covered bonds are issued in currencies other than Swedish kronor. This equates to SEK 495 billion, two thirds of which consist of bonds issued in euro.

Swedish covered bonds issued in euro are as a rule issued under Euro Medium Term Note (EMTN) programmes under UK law, which constitutes a standard for large parts of financial markets in Europe.[14] The rules about the bond's structure and supervision follow the Swedish Covered Bonds Act, however. So, investors in Swedish covered bonds issued in foreign currency have the same rights to the underlying cover pool as investors in bonds issued in Swedish kronor.

On the market for covered bonds issued in euro, frequent, small on-tap issues are uncommon. Instead, the entire amount is borrowed upon issuance, which in individual cases can be supplemented with on-tap issues. The standard amount for an issue on the euro market has been EUR 1 billion, but the trend is headed towards lower issue volumes, although a minimum of EUR 500 million for the bond to be classed as a benchmark bond.[15]

On markets in other currencies there are also resellers who are responsible for bond sales on the primary market. However, as a rule their obligations are not as far-reaching as those of the Swedish market makers in terms of providing prices on the secondary market.

14 Using a EMTN programme is a common issue structure among European banks and firms. It involves the issuer issuing a base prospectus which complies with UK legislation as a rule. Under this base prospectus, different types of bonds can be continually issued as needed, often in different currencies.
15 Small volumes are called private placements.

However, a number of Swedish and international banks, without agreements with issuers, quote bid and offer prices for Swedish covered bonds on the secondary market.

Compared to the Swedish market, the possibility of investing in bonds with a short investment horizon is more limited on the euro market. According to information from banks which trade in Swedish euro bonds, the majority of investors who are active on this market intend to keep the bonds until maturity.

Maturity of Swedish covered bonds

Issuing a mortgage is usually a long-term commitment from the bank, which could justify long-term funding. The maturity of the covered bonds of Swedish banks is, however, much shorter than that of many mortgages that have a maturity of 40 years. The average maturity of the outstanding stock of Swedish covered bonds was at the end of 2012 almost three years, while the average maturity of newly issued bonds was 4.5 years.[16] It is shorter than in many other European countries. Around 40 per cent of the benchmark bonds issued on the euro market in 2010 had maturities of over seven years[17]. Long bonds are particularly common in Denmark and Germany.

Many market participants describe how tradition and experience are important to market functioning. The fact that there is a tradition of a liquid market for covered bonds with maturities of between one and six years can thus have a certain bearing on bond maturity. If investors buy bonds with longer maturities, they may require a premium as compensation for the lack of liquidity.

LINKS BETWEEN SUBMARKETS

In order to understand the dynamics of the covered bond market, it is important to be familiar with the links between different submarkets. There are important links not only between the primary and secondary market, but also with other submarkets such as the repo and foreign exchange market.

The primary and secondary covered bond markets

The primary and secondary covered bond markets are closely interlinked. When a bank is to issue a covered bond, investors compare it with the pricing on the secondary market, because this offers an alternative investment. Yields on the secondary market therefore form the basis of yields in issues. The possibility of issuing on the primary market is therefore negatively affected during periods of heavy selling pressure on the secondary market, because yields then rise.

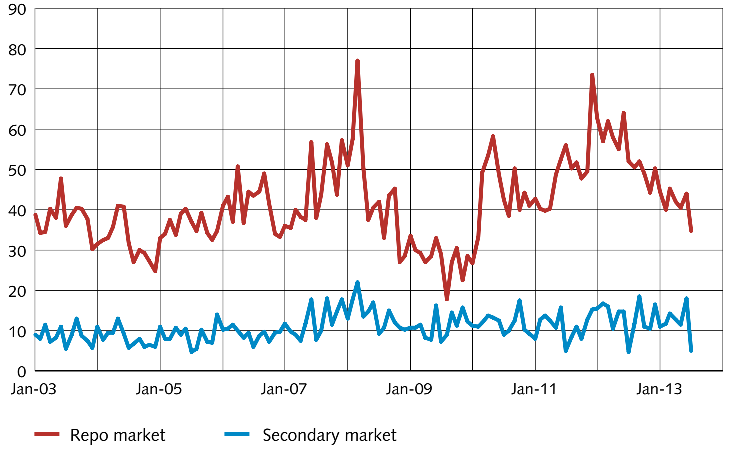
In 2012, the daily trading volume of covered bonds averaged at SEK 13 billion on the secondary market. Hence, around 0.7 per cent of the total volume of covered bonds is

16 According to the Association of Swedish Covered Bond Issuers.
17 According to the European Covered Bond Council.

traded each day. Trading volumes have been relatively stable over time and have increased in line with the growing volume of outstanding covered bonds (see Chart 2).

Chart 2. Average daily trading volume on the repo market and secondary markets

SEK billion



Source: The Riksbank

Link to the repo market

A repo transaction in covered bonds involves the bond holder selling the bond to a counterparty in exchange for liquid funds. At the same time, the parties agree that the seller will buy back the bond at a later date. Repo instruments largely work like a secured loan over the term of the repo.

Certain covered bond investors want to liquidate their bonds by pledging them on the repo market. In such a transaction, the counterparty is usually the capital markets department of banks – the market makers in other words. The most common duration in a repo-transaction is a week.

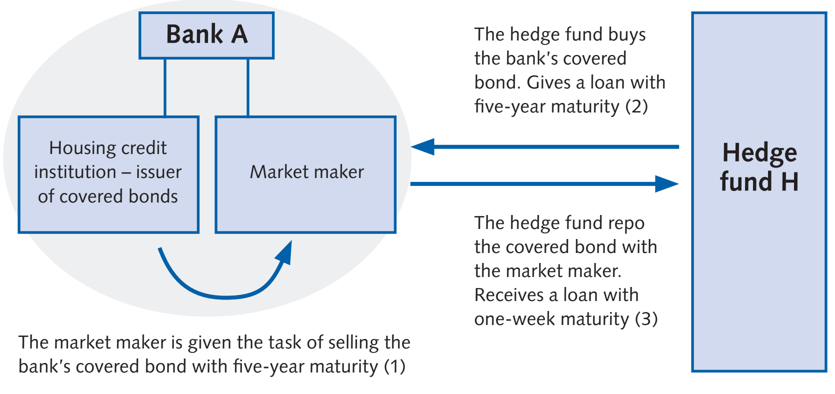
The market maker may in turn choose to finance its stock of covered bonds on the repo market. The opposite applies should a market maker encounter greater demand for covered bonds than what it has in stock. In this case, the bond can also be acquired on the repo market. If the market maker cannot find the covered bond on the repo market, it can approach the issuer. According to the market maker agreement, the issuer must offer repos to the market maker as needed.

According to market participants, in recent years there have been more investors wishing to fund their covered bond holdings through repos, than investors wishing to obtain covered bonds in exchange for kronor over the repo market. Market makers can thus rarely fund their total holdings on the repo market. Consequently, market makers must fund their stock of covered bonds in a different way. This occurs most commonly through internal loans from other parts of the bank, for instance from deposits or short-term funding.

The trading volume on the repo market for covered bonds in 2012 was SEK 54 billion a day on average – much higher than on the secondary market. Hence, around 3 per cent of the outstanding volume of covered bonds is traded on the repo market each day. The trading volume fell sharply after the financial crisis of 2008, but has since recovered (see Chart 2).

Some covered bond holders, hedge funds for example, want to fund their holdnings of covered bonds on the repo market for quite som time. Both a bank which issues covered bonds and an investor may have an interest in the bank, in its role as market maker, funding the investor's covered bond holding. Figure 3 gives a simplified picture of such a transaction. A bank issues a covered bond through its mortgage institution which the bank's own market maker department has the task of selling (1). The bond has a five-year maturity. The market maker sells the bond to a hedge fund and thus raises funds with a five-year maturity (2). However, the hedge fund wishes to fund the bond through a one-week repo. The market maker then issues a loan with a one-week maturity to the hedge fund in exchange for the covered bond (3). This transaction does not decrease the liquidity risk of the bank because the bank first borrows money from the hedge fund, which it then lends back. Compared to the starting point, the bank can, however, extend the average maturity of its funding. The fact that the bank offers the investor the possibility of funding its covered bond holding through the market maker can also increase demand for the bank's bonds. The hedge fund may, on the other hand, earn money on the spread between the higher yield on the five-year bond and the lower yield on the one-week repo.[18] In certain cases the market maker can roll-over the repo contract with the hedge fund over a long period of time.

Figure 3. A hedge fund funds its covered bond holding through a repo



18 The hedge fund can also manage the interest rate risk through fixed income derivatives.

Link to the foreign exchange market

Some of the Swedish covered bonds issued in foreign currency fund assets in Swedish kronor, such as mortgages. This funding in foreign currency is exchanged for kronor with another counterparty through what is known as a currency swap. The counterparties thus exchange currency with each other and have an agreement to exchange it back at a later date. The counterparty is often a foreign bank, but the swap can also be made internally with a different part of the same bank. Because Swedish banks have a need to exchange parts of their funding in foreign currency for Swedish kronor, they rely on a smoothly functioning currency swap market.[19]

Links to the futures market

The major Swedish banks are also market makers in futures contracts with covered bonds as the underlying asset. However, this only applies to some of the Swedish issuers' bonds. There are standardised contracts, with the underlying bonds either having a two-year or five-year maturity, which facilitates trade.[20] In 2012 trade on the futures market averaged just above SEK 7 billion daily.

MARKET PARTICIPANTS

This section describes the market participants operating on Swedish covered bond markets, that is, issuers, investors and interest groups. Market makers and resellers also have an important function but they are addressed in the market structure section.

Issuers

There are eight banks and their mortgage institutions which have been granted authorisation from Finansinspektionen to issue covered bonds under Swedish legislation. Currently, seven of these banks have issued covered bonds.[21] Handelsbanken accounts for the largest market share (28 per cent) followed by Swedbank (26 per cent). Then come Nordea (17 per cent) and SEB (14 per cent). SEB is the only bank to have its mortgage operation incorporated into the bank, while other banks have separate mortgage institutions.

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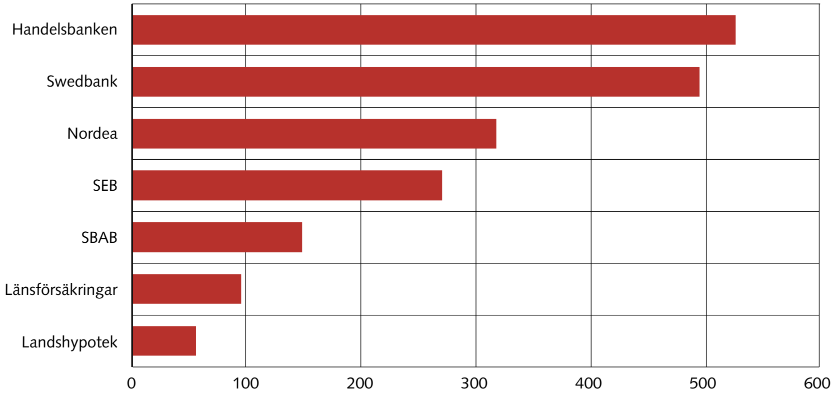
19 See Eklund, Johanna, Milton, Jonas and Rydén, Anders (2012), Swedish banks' use of the currency swap market to convert funding in foreign currencies to Swedish kronor. *Sveriges Riksbank Economic Review 2, 2012.*

20 Futures contracts fall due on the next IMM date, that is the maturity is three months at most.

21 Swedbank hypotek, Stadshypotek (Handelsbanken), Nordea hypotek, SEB, SCBC (SBAB), Landshypotek, Länsförsäkringar hypotek and Skandiabanken. Skandiabanken has not yet issued any covered bonds.

Chart 3. Outstanding covered bonds by issuer, June 2013
SEK billion



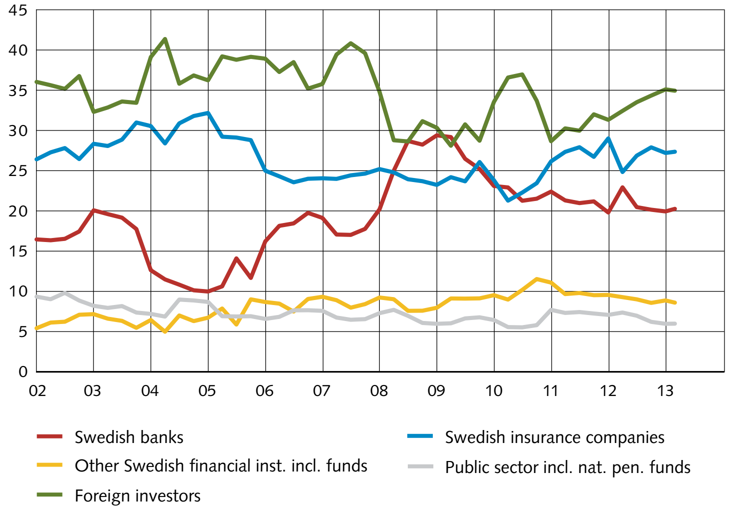
Sources: Public information from each bank

Investors

The primary owners of Swedish covered bonds are insurance companies, banks and bond funds including pension funds – that is, traditional participants in the fixed income market. They often have a long investment horizon. Among Swedish investors, the insurance companies are largest (28 per cent) followed by the Swedish banks themselves (around 21 per cent) (see Chart 4). The bank own the bonds through, for instance, their role of market makers and for their liquidity buffers. Other Swedish financial institutions including funds, own almost 10 per cent.

Around 35 per cent of the covered bonds issued by Swedish credit institutions are owned by foreign investors, which includes bonds issued in foreign currency. While there are no official statistics about the various categories of foreign owners, judging from equivalent statistics about covered bonds issued in euro, asset managers are the biggest investors, followed by insurance companies and banks.

Chart 4. Swedish covered bond ownership by investor type
Per cent



Note. Covered Bonds issued by SEB are excluded since 2007.

Source: Statistics Sweden

On the Swedish covered bond market, there are investors with shorter investment horizons, which enter and exit covered bond positions more frequently. Investors with a short investment horizon are also important to the functioning of the market. They contribute to frequent trade in bonds, which can enhance market liquidity. Because many of these investors are active on the repo market, the functioning of the repo market can be said to be important to the functioning of the market in general. The presence of participants with a short-term outlook is also associated with risks (see the section on the financial crisis).

Credit rating agencies

As is the case for other securities, a high credit quality for the covered bonds contributes to a low funding cost. The opinions of credit rating agencies therefore have a bearing on the covered bond market. All Swedish issuers allow their covered bonds to undergo credit ratings by at least one of the credit rating institutions Moody's and Standard and Poor's (see Table 1).

All Swedish issuers have always had the highest possible credit rating, for their covered bonds[22]. Credit rating methods differ between the institutions, but as a rule there is a relationship between the sovereign's credit rating, the issuer's credit rating and the maximum credit rating that the covered bonds can attain. If the issuer's credit rating is too low, the highest possible credit rating cannot be achieved for the covered bond, regardless of the value of the underlying cover pool. It is mainly because a heightened risk of the

22 AAA according to Standard and Poor's scale, Aaa according to Moody's scale.

issuer's bankruptcy also increases the probability of delays in payment on the covered bonds. Another common requirement for a credit rating company to issue the highest possible credit rating is that the value of the underlying collateral exceeds the value of the outstanding bonds by around 5-15 per cent.

Table 1. Credit ratings of Swedish issuers

	MOODY'S			STANDARD AND POOR'S		
BANKS	Long-term rating	Short-term rating	Covered bonds	Long-term rating	Short-term rating	Covered bonds
Landshypotek				A	A-1	AAA
Länsförsäkringar	A3	Prime-2	Aaa	A	A-1	AAA
Nordea	Aa3	Prime-1	Aaa	AA-	A-1+	AAA
Handelsbanken	Aa3	Prime-1	Aaa	AA-	A-1+	
SBAB	A2	Prime-1	Aaa	A	A-1	AAA
SEB	A1	Prime-1	Aaa	A+	A-1	
Skandiabanken	A3	Prime-2				
Swedbank	A1	Prime-1	Aaa	A+	A-1	AAA

Sources: Moody's, Standard and Poor's and the Riksbank

Supervisory authority

A number of international agreements and Swedish laws regarding credit institutions and investors affect the Swedish covered bond market. Finansinspektionen is chiefly responsible for ensuring compliance with these regulations.

Finansinspektionen also grants authorisations to issue covered bonds, and ensures compliance with the Swedish Covered Bonds Act. Finansinspektionen has also supplemented the Covered Bonds Act with more detailed regulations and general guidelines.[23] To assist it in its work to ensure compliance with the law, Finansinspektionen has *independent inspectors* who are appointed by Finansinspektionen but who receive financial remuneration from the issuer.

The fundamental issue of supervision is about the value of the cover pool at least equalling the value of the issued bonds. Therefore, supervision revolves around monitoring the loan-to-value ratio of the underlying loans and valuation of the assets, mainly real estate, which constitute collateral for the underlying loans. According to Finansinspektionen's regulations, issuers must, on an ongoing basis, monitor the price trend of real estate in the regions where loans are granted. If there is a severe deterioration in market conditions, the original valuation must be reviewed. A change in the regulations which came into effect in 2013 involved a clarification of the possibility of issuers to register value increases in the underlying collateral. If they utilise this possibility, they must also register value decreases to the same extent. Also, the issuer must perform regular stress tests to explore how declining values in underlying collateral and interest rate and currency fluctuations affect loan-to-value ratios and the value of the cover pool.

23 FFFS 2013:1, Finansinspektionen's Regulations and General Guidelines Governing Covered Bonds.

The issuer must keep a register of issued covered bonds and the underlying collateral. The register is monitored by the independent inspector. At least once a year, the inspector takes a sample of loans from the cover pool to find out if they are accurate in terms of, for instance, valuation and loan-to-value ratio. The findings of the review are reported to Finansinspektionen in an annual report. Through the regulations which came into effect in 2013, the guidelines for the independent review have been clarified.

Interest groups

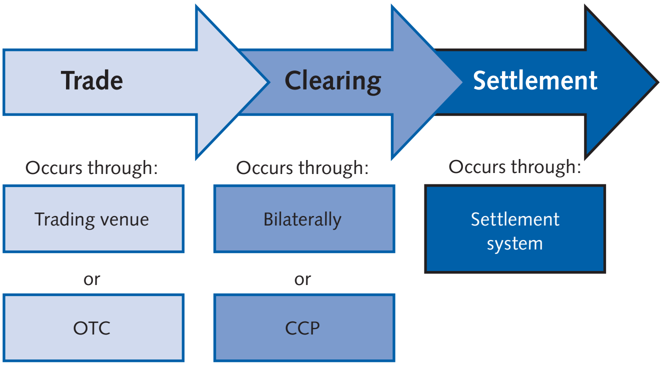
There are two Swedish interest groups related to the Swedish covered bond market. These are *Penningmarknadsrådet (the money market council)* and the *Association of Swedish Covered Bond issuers (ASCB)*. The former is a work group under the Swedish Securities Dealers' Association. The council consists of the members of the Swedish Securities Dealers' Association which are market makers for Swedish government securities, which overlaps with the market makers for covered bonds. In the council, matters regarding the market's functioning, both in the short term and in more structural terms, are discussed. During the financial crisis in the autumn of 2008, active decisions were taken about, for instance, the size of trading lots and the spread between the bid and offer price on the interbank market (see the section about the financial crisis below).

The ASCB is the interest group of Swedish issuers. The objective of the association is to market Swedish covered bonds and convey the interests of issuers in relation to legislators and authorities. The association also represents Swedish issuers at international investor conferences and in the international umbrella organisation European Covered Bond Council (ECBC), which represents the national interest associations. The Swedish Bankers' Association provides the association's secretariat. All Swedish issuers are currently affiliated with the ASCB.

INFRASTRUCTURE SURROUNDING TRADE IN COVERED BONDS

A transaction in securities, for example covered bonds, is carried out in three steps (see Figure 4). The first step is trade, involving the buyer and seller finding each other and agreeing on a price. The next step is the compilation of transfer instructions – known as clearing. Once the transfer instructions are done, settling the transaction remains, involving the buyer and seller exchanging cash and securities.

Figure 4. The three steps of a securities transaction



Trade

Trade in securities can take place either through an organised market place or OTC (over the counter). The most common type of organised market place is a stock exchange. When trade is conducted on organised market places, it occurs on a market place which, through its regulations, makes the market available to everybody. Everybody can also access prices and information about quoted securities. Trade on organised market places thus involves some transparency, and the market is equally accessible to all participants. There is also a greater possibility of warding off market abuse.

When trade is conducted *OTC*, there are no regulations governing the trade. This makes it easier to trade non-standardised contracts and tailored contracts. However, in OTC trade, only the parties included in the transaction know that the transaction is taking place, and at what price. Transparency into the OTC market is hence lower than for securities traded on an organised market place.

Swedish covered bonds can be traded both on an organised market place and OTC. A large amount of covered bonds that are classed as benchmark bonds are registered with NASDAQ OMX (the Stockholm stock exchange), enabling trade on the stock exchange to take place.[24] This applies to both the purchase and sale of bonds on the spot market and on the futures market.[25] Repo contracts with covered bonds as collateral may, however, not be entered over the stock exchange.

However, there is no trade on the stock exchange in covered bonds in Sweden. Rather, they are traded OTC through market makers both on the spot market and the futures market. Trade does not take place through a regulated market place because these are currently mainly devised for trading in equities. The covered bond market consists of a handful of participants which conduct relatively few but large transactions. Because trade

24 NASDAQ OMX is a regulated market place in Stockholm. The contracts quoted on the stock exchange are as follows: SCBC (SBAB), Stadshypotek, SEB, Swedbank hypotek, Nordea hypotek, Länsförsäkringar.

25 On the spot market, payment and delivery take place immediately, while on the futures market payment and delivery take place at a later, predetermined point in time.

does not occur continually, it can be difficult to match buyers and sellers at the same time, which occurs on a stock exchange, known as order-driven trade.

However, it can be said that trade in covered bonds is organised through the market maker system. Indicative bid and offer prices are shown on-screen, that is through electronic information systems provided by NASDAQ OMX, Bloomberg or Reuters. Most trade takes place over the phone. The fact that NASDAQ OMX publishes prices and trading volume statistics for quoted bonds also contributes to greater transparency on the market.

Clearing

Clearing involves the compilation of financial transaction instructions. In the compilation, it is verified that the parties agree on price, transaction date and so on. It is important that the counterparties in a transaction share the same perception of the terms of the transaction in order for settlement to go smoothly. The clearing of securities can take place either through a clearing organisation or bilaterally.

An increasingly common type of clearing organisation acting on the financial markets are central counterparties (CCP). A CCP is considered to contribute to more secure management of counterparty risk by stepping in as buyer for all sellers, and seller for all buyers, in securities transactions, and requesting collateral for the transactions. Both the buying and selling counterparty thus have the central counterparty as counterparty. Because CCPs come under authorities' supervision and monitoring, they are considered to be safe counterparties.

When clearing occurs bilaterally, there are only two counterparties involved and the compilations of the two counterparties occur simultaneously. In these cases, clearing can either occur verbally or through a written contract.

In Sweden, there is currently no possibility of CCP clearing of transactions in covered bonds on the spot market. However, both futures contracts with covered bonds as the underlying asset and repo contracts in covered bonds can be CCP-cleared on NASDAQ OMX.[26] The number of CCP-cleared futures contracts on NASDAQ OMX varies over time, but is on a rising trend. However, there is currently no CCP clearing of repo contracts in covered bonds.

However, the bilateral clearing of covered bonds is relatively standardised according to contracts developed by the ISDA[27] with the aim of making OTC trade secure and more efficient.

The main reason for market participants deciding not to opt for CCP clearing is that it incurs costs. Partly, the CCP charges for assuming the market participants' counterparty risks, through collecting collateral for instance, and partly CCP clearing requires system

26 For many years, NASDAQ QMX has had a company in the group (in Sweden) which acts as CCP on Nordic markets and primarily clears derivatives, but also certain other financial instruments such as repo contracts and bonds.

27 ISDA – International Swaps and Derivatives Association. The ISDA works to make the OTC market for derivatives and swaps secure and efficient.

support which also incurs costs. If counterparties find that the cost of alleviating the counterparty risk through CCP clearing exceeds the cost of managing the counterparty risk by themselves, they choose not to clear a transaction through CCP. This happens in particular if the counterparties have a smoothly functioning collateral management system between them.

On the derivatives market, counterparty risks are as a rule much bigger and harder to manage compared with the spot market. This is because the risk exposure extends over a longer period of time, often up to several months or years. New international regulations will place heightened demands on the CCP clearing of derivative contracts.[28] The European Market and Securities Authority (ESMA) defines which instruments are to be cleared through CCP. Whether derivatives associated with Swedish covered bonds will become subject to compulsory CCP clearing depends on whether the instruments will be included on ESMA's list.

Settlement

When trade and clearing of a financial instrument are complete, settlement remains. Settlement is the transfer itself of a registered security from the seller and payment from the buyer. Settlement is carried out through a settlement system. There is only one such system in Sweden – Euroclear Sweden, through which covered bond contracts are also settled.

When settlement is made through Euroclear Sweden, the security is transferred at the same time as payment. This simultaneousness is known as delivery versus payment. It involves the settlement risk disappearing, because the one side of the transaction is not conducted if the other is not carried out at the same time.

Links to financial stability

This section begins with a description of how the covered bond market is important for the major Swedish banks. We also show how the banks can be negatively affected when the market comes under stress, which occurred in connection with the global financial crisis that started in 2007. In addition, the Riksbank's views on a number of benefits and weaknesses for the financial system from the banks' use of covered bonds are summarised. Finally, factors that could bring about a deterioration in functionality on the market for Swedish covered bonds are discussed.

28 See Eklund, Johanna, Sandström, Maria and Stenkula von Rosen, Johanna (2012), The derivative market is facing major changes, *Economic commentaries* no. 6, 2012, Sveriges Riksbank.

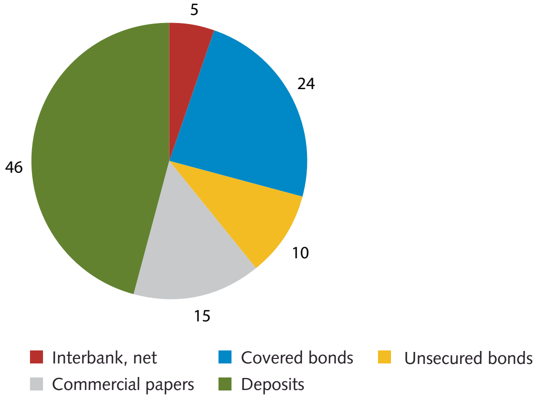
MAJOR SWEDISH BANKS ARE EXPOSED TO THE COVERED BOND MARKET

The major Swedish banks are exposed to the covered bond market in many ways. Besides the banks relying on the market for their funding, the market's function also affects their liquidity buffers, which largely comprise covered bonds. Also, they are exposed to the market in their role of market makers.

Covered bonds account for a large part of the banks funding

The market funding of the major Swedish banks accounts for around half of their total funding, which is a relatively high proportion in an international perspective. Half of market funding comprises borrowing through covered bonds. This means that around one quarter of the banks' total funding is raised through covered bonds (see Chart 5).

Chart 5. The funding of the major banks at December 2012
Per cent



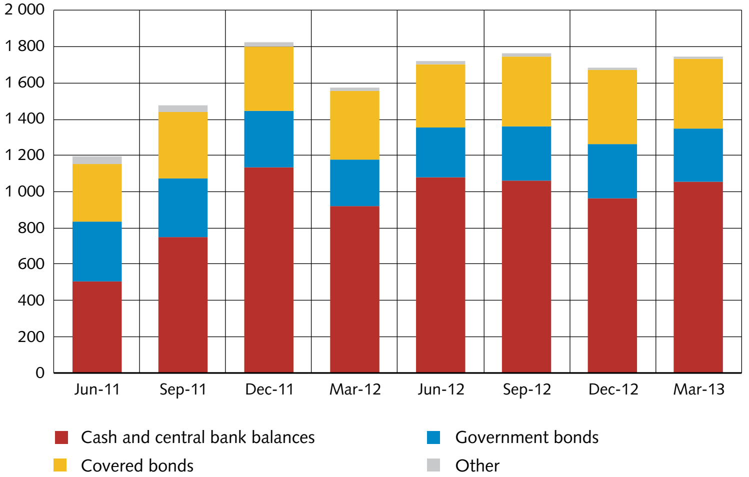
Sources: The banks' earnings reports and the Riksbank

Covered bonds constitute a significant part of the liquidity buffers of the banks

In addition to banks using covered bonds for their funding to a great extent, the market's function also affects their liquidity buffers. A substantial part of these buffers is made up of covered bonds (see Chart 6), and in order to convert these into liquidity, a functioning market is required. If bonds cannot be sold or exchanged[29] for cash or other securities on private markets, a large part of the banks' buffers would be illiquid in practice. In March 2013 covered bonds accounted for just over 20 per cent of the large banks' liquidity buffers, almost SEK 400 billion in total. That includes both covered bonds in Swedish kronor and in foreign currency. If balances with central banks are disregarded, which can be reduced when extraordinary measures are phased out, covered bonds amount to 60 per cent of the liquidity buffers.

29 Through a repo transaction.

Chart 6. Distribution of assets in the banks' liquidity reserves, total for the four major banks
SEK billion



Note. Liquidity buffers according to the definition of the Swedish Bankers' Association.

Sources: The banks' earnings reports and the Riksbank

The market makers sustain trade

The major Swedish banks are also affected by the covered bond market in their role of market makers. The banks' undertakings as market makers can lead to problems in a situation of many investors wishing to sell off their covered bonds at the same time, because the latter tend to end up in the market makers' own stock. In a situation of market stress with investors wishing to sell off the covered bonds of Swedish banks, the markets for all other market funding, including short-term funding, would probably be affected too. The banks would hence find it difficult to fund their growing stock of covered bonds. This occurred, for example, in connection with the collapse of Lehman Brothers in 2008 (see below).

THE SWEDISH COVERED BOND MARKET AND THE FINANCIAL CRISIS

The banks' major dependence on the covered bond market means they are hit hard when shocks occur on the market. The following describes the course of events and the actions of authorities and banks in connection with the acute financial crisis of 2008.[30]

30 The Riksbank has, in other contexts, described the general course of events in connection with the financial crisis. See, for example, Molin, Johan (2010), How has the Riksbank managed the financial crisis? *Economic Review 2010:1*, Sveriges Riksbank. See also Elmér, Heidi, Guibourg, Gabriela, Kjellberg, David, and Nessén, Marianne (2012), The Riksbank's monetary policy measures during the financial crisis – evaluation and lessons learnt *Economic Review 2012:3*, Sveriges Riksbank.

Course of events

The build-up of unease on international financial markets from 2007 had an impact on the Swedish covered bond market. During the second half of 2007, foreign investors reduced their holdings of Swedish covered bonds by almost one third, from SEK 450 billion to SEK 330 billion (see Chart 4). The market makers describe how the investors who withdrew typically had a short-term investment strategy, including structured investment vehicles (SIV), conduits and hedge funds.[31]

After Lehman Brothers collapsed in September 2008, the situation became more strained. At the same time, uncertainty increased about Swedish banks' exposure in the Baltics. Investors sought safe and liquid assets such as government securities, and sold what was perceived to be risky, which at the time also included Swedish covered bonds. The market fell subject to heavy selling pressure, mainly driven by foreign investors, but also Swedish ones. Thanks to the Swedish market maker system, it was nevertheless possible to sustain a certain level of trade. Here, investors had a possibility to exit assets – a possibility that was substantially lacking elsewhere. In their capacity of market makers, the Swedish banks bought the bonds, but because of the high level of uncertainty on the market, there were few buyers. The market makers' covered bond stock grew quickly and reached the limits for how much risk the internal regulations permitted. At the same time, markets for short-term funding were strained, so the banks had difficulty in funding their major holdings. All market makers tried to rid themselves of covered bonds by selling to their counterparties on the interbank market, which turned into an unsustainable situation. Unease on the secondary market also made it harder for banks to make issues on the primary market.

Both authorities and market participants understood the severity of the situation, which led to a series of measures within the course of a few weeks. In consultation with the Riksbank, the National Debt Office resolved to pump large amounts of treasury bills into the market.[32] The money raised by the National Debt Office through its issues was placed in loans to banks with covered bonds as collateral.[33] This measure provided the banks with the possibility of exchanging their covered bond surplus for the government securities that their counterparties were demanding. The Riksbank extended the banks' possibility of providing covered bonds issued by affiliated institutions as collateral for credit from the Riksbank. The limit was first raised from 25 per cent to 75 per cent of the banks total amount of collateral and was eventually lifted entirely. The banks thus had greater possibilities of obtaining funding through loans from the Riksbank. At most, the Riksbank's lending to Swedish banks amounted to SEK 375 billion in November 2009.

31 SIVs and conduits are units controlled by banks that are not included on the bank's balance sheet, which invested in securities with expected low credit risk and which funded this through issuing short securities.

32 In total, bills amounting to just over SEK 200 billion were issued, and the outstanding stock amounted to SEK 120 billion at most. See Swedish National Debt Office (2010). Basis for evaluation of central government debt management 2008 and 2009.

33 The loans had the same term as the treasury bills issued.

The banks agreed that the guidelines for interbank trading had to be changed to stabilise the situation. Trading lots were reduced, and the spread between bid and offer prices was widened in order to sustain trade.[34] On the whole, the series of comprehensive measures helped resolve the problems on the market.

After the financial crisis

After the crisis, the structure of and participant behaviour on the market partially changed. Until the acute financial crisis in the autumn of 2008, Swedish covered bonds were also traded between market makers (interbank), but since the crisis there has been very limited activity on the interbank market. The investor base has also changed to a certain extent. There is a consensus among market participants that the share of speculative investors, in particular foreign ones, has fallen.

Although the formal undertakings of the market makers are the same as they were before the crisis, the market makers describe how, on the back of heightened risk awareness, they have a lower propensity than before to accumulate large covered bond holdings. This could involve investors no longer being guaranteed the ability to trade large volumes on each occasion, in which case liquidity would deteriorate. The bid and offer price spread is also said to still be wider than before the crisis. According to market participants, issuers, investors and market makers share the view that the functioning of the market must be adapted to prevailing circumstances.

ADVANTAGES OF COVERED BONDS FOR THE FINANCIAL SYSTEM

Part one above describes how covered bonds have a series of positive qualities compared with other bond types. It is primarily a matter of advantages for investors, which ultimately facilitates funding for banks. However, these features are, to a certain extent, also positive for the financial system at large.

- Covered bonds involve lower risks for investors in relation to traditional bank bonds. This is mainly because covered bonds provide investors with access to a specific cover pool in the event of the issuer's bankruptcy. Covered bonds are also regulated by law and monitored by supervisory authorities.
- Assets in the cover pool remain on the issuer's balance sheet, unlike in securitisation when the assets can be removed. Therefore, the issuance of covered bonds creates strong incentives for performing a sound credit risk assessment of the underlying assets in relation to issuing MBS.

34 The decision involved the smallest trading lot amounting to SEK 10 million (previously SEK 50 million for short maturities and SEK 100 million for long) and being traded with a greater spread between the bid and offer price.

- Because covered bonds can be considered relatively safe, investors have a lower required rate of return than for other bond types. This helps enable Swedish banks and mortgage institutions to obtain funding on relatively favourable terms, which in turn results in lower rates for mortgage customers.
- Also, covered bonds are treated favourably in the international regulations governing certain investors, such as funds and banks. This means that investors, including the banks themselves, can hold relatively large amounts of covered bonds, which adds to higher demand for them.
- Swedish covered bonds are relatively standardised. Partly, they comply with the standard set by legislation and regulations, and partly, because of the benchmark bond system, there is a limited amount of high-volume bonds traded on the market. The standardisation helps to reduce the resources required by investors to obtain information about the covered bonds. It can be of particular value for foreign investors with limited familiarity with Sweden. Hence, it can be said that the entry barrier for investors to the market is lowered, and trade is facilitated.
- The system of on-tap issues and market makers also helps sustain trade and hence liquidity on the market. It makes it easier for investors to buy and sell bonds and hence for the banks financing. Sound liquidity also provides market participants with a more up-to-date picture of pricing on the market. A clear picture of pricing makes it easier for an issuer to time issues well. It is also an advantage for investors in the valuation of holdings.

WEAKNESSES LINKED TO THE BANKS' USE OF COVERED BONDS

The banks' major reliance on covered bonds is associated with certain weaknesses. There is also a risk of market participants failing to sufficiently take into account these weaknesses due to expectations about government guarantees for the market.

Liquidity risk in funding long-term assets

The maturity of Swedish covered bonds is much shorter than many mortgages which, according to contracts, extend up to 40 years. The bank must therefore renew its funding for mortgages several times over the term of the mortgage. In practice, this occurs continually. A liquidity risk hence emerges; that is, a risk of the bank not managing to renew its mortgage funding. Irrespective of the form of funding it chooses, a bank takes a liquidity risk when it converts short-term funding to more long-term lending. The importance of this liquidity risk depends on how stable the financing is.

Swedish banks' funding through covered bonds has a maturity of almost three years. It can in that respect be seen as stable in relation to e.g. deposits which do not usually have a time limit.[35] For an individual bank, the maturity of a mortgage is often shorter that what the contracts indicate due to, for example, households changing banks. However, although funding through covered bonds can be seen as stable funding for an individual bank, it may constitute less stable funding looking at the banking system as a whole. This is partly due to that when a household changes banks, the mortgage remains within the banking system and has to be refinanced. It is also due to the banks' undertaking as market makers and to the fact that banks' own each other's covered bonds (see below). The banks' undertaking as market makers can involve funding in practice not being as long-term as the maturity implies. This is because, if a lot of investors wish to sell the covered bonds of the banks at the same time, the bonds risk returning to the banking system through the market makers. Then, the banks must find new funding for these stocks of covered bonds.

The banks own each other's covered bonds

Already today, the banks own around one-fifth of Swedish covered bonds. They hence hold their own and each other's covered bonds, largely as a liquidity buffer. Liquidity buffers are intended to be used in a situation of the banks needing liquid funds. However, should a general confidence crisis in the Swedish banking system emerge, several banks would be in need of liquid funds at the same time. If several banks then sold their covered bond holdings to obtain liquid funds, this would, at the same time, render their own possibility of obtaining funding through covered bonds more difficult.

Encumbering the underlying collateral

When the underlying assets in the cover pool are reserved for investors in covered bonds, investors which have purchased the bank's unsecured securities, and private customers with accounts held at the bank, would have fewer assets for their recourse in the event of the bank's bankruptcy. This is particularly the case if the market value of the underlying assets is much higher than the value of the issued bonds. In order to gain compensation for this risk, investors in the bank's unsecured securities and private customers ought to demand higher compensation from the bank. If the share of encumbered assets is too high, there is a risk of investors no longer wishing to purchase the unsecured bonds of banks because they are considered far too risky. There are, however, several reasons for why investors in the bank do not demand higher compensation for the heightened risk when the share of encumbered collateral increases.[36] One reason is the government deposit guarantee scheme, whereby the government guarantees the deposits of private customers to a certain amount in the event of the bank's bankruptcy. Hence, private customers with modest savings have no reason to demand higher interest rates when the secured funding of banks increases. Instead, through the deposit guarantee scheme, the government assumes the risk

35 Historically, however, deposits have proven to be a stable form of funding, thanks in part to the government deposit guarantee scheme.

36 For a further discussion about asset encumbrance, see Juks, Reimo (2012), Asset encumbrance and its relevance for financial stability, *Sveriges Riksbank Economic Review* 2012, no. 3.

from depositors without the banks' fee for the deposit guarantee depending on the share of encumbered assets. The deposit guarantee scheme can thus help to reduce the total funding cost of banks by curbing the cost of deposits when secured funding increases.

Expectations about authority actions

Besides the deposit guarantee scheme, the expectations of market participants about government guarantees could entail them failing to sufficiently take into account the risks associated with covered bonds.[37] On several occasions, Swedish authorities have acted to remedy the problems arising on the covered bond market. This occurred partly during the banking crisis of the 1990s, and partly in connection with the stress that erupted on the market when Lehman Brothers collapsed and in connection with the problems experienced by Swedish banks in the Baltics. The previous actions of authorities could thus give rise to expectations about them acting again in the event of renewed market stress. Such expectations probably mean that market participants perceive covered bonds to be associated with lower risks than what would otherwise have been the case. In this case, the pricing of funding through covered bonds may be too low in relation to the actual risks. This could in turn lead to both issuers and investors taking excessive risk. For instance, the banks could price lending to customers at a lower level than what would be optimal from an economic point of view, which could lead to excessive credit expansion.

RISKS TO MARKET FUNCTIONALITY

Stress on the covered bond market could once again hit the Swedish banks. Two potential risks to the functioning of the market are renewed stress on international capital markets and unease about a domestic drop in house prices. If these were to occur at the same time, it would probably have a negative effect on the Swedish covered bond market.[38]

Stress on international capital markets

Stress on international capital markets risk once more having an impact on the Swedish market. In a situation of great unease on financial markets, the propensity of market participants to lend money to each other decreases, and a preference for owning safe government securities may emerge. In such a situation, investors' possibilities of or appetite for owning Swedish covered bonds may decline, and selling pressure may arise. This would lead to Swedish banks finding difficulty in obtaining funding through covered bonds on the primary market. At the same time they risk, in their role of market makers, increasing their covered bond holdings. However, unease on international capital markets does not

37 For a further discussion about implicit government guarantees, see *Appropriate capital ratio in major Swedish banks*, 2011, Sveriges Riksbank.
38 For a current risk assessment, see *Financial Stability Report* 2013, no. 1, Sveriges Riksbank

necessarily spill over onto the Swedish banks' possibility of obtaining funding through covered bonds, as indicated by the unease of recent years surrounding the debt crisis in the euro area.

Risks of negative consequences in the event of a decline in house prices in Sweden

An aspect specific to the Swedish market is the risk of a substantial drop in house prices. The Riksbank has previously analysed the impact on covered bonds in such a scenario.[39] The conclusion was that the banks have sound possibilities of managing matching requirements for the cover pool in a situation of declining house prices and rising loan-to-value ratios. But the more the loan-to-value ratios on the underlying collateral increases, the harder it will be for banks to meet matching requirements in the event of a decline in house prices. Even if the bank can cope with the matching requirement, a substantial decline in house prices would probably have a negative effect on the banks' cost of and access to funding. The emergence of unease about a decline in house prices could suffice for investor confidence in covered bonds to diminish. Reduced investor confidence in turn affect the banks' possibilities of obtaining funding through covered bonds negatively.

Conclusion

We have seen that the Swedish covered bond market is large, and that Swedish banks depend heavily on this market. Shocks on the covered bond market may thus constitute a risk to financial stability. In this event, not only the banks but also other investors and the banks' customers would be affected. For instance, the banks' mortgage lending and mortgage rates are closely linked to their funding through covered bonds.

The Riksbank and other Swedish authorities are working to prevent shocks to the Swedish covered bond market. In its stability work, the Riksbank monitors the banks' issuance of covered bonds, trade on the secondary market and the investor base. We also monitor the trend in household indebtedness and house prices, because these are of consequence to the banks' possibilities of obtaining funding through covered bonds. The work also involves oversight to ensure that government regulations and the market structure do not give rise to incentives for excessive risk-taking among market participants.

In order to strengthen the financial system, authorities have come to a series of international agreements that may affect the market for Swedish covered bonds. These include the new liquidity and capital adequacy regulations for banks under Basel III and reforms in OTC derivatives trading through EMIR. At the same time, initiatives are under way to harmonise the structure of covered bonds between European countries. The Swedish authorities have also expressed the need for future regulations to contribute to maintaining a robust covered bond market.[40]

39 See *The Riksbank's commission of inquiry into risks on the Swedish housing market,* 2011, Sveriges Riksbank.

40 See The Ministry of Finance, Finansinspektionen and the Riksbank (2013), Swedish Authorities' Response to the Green Paper on Long-term Financing of the European Economy (Dnr: 2013-493-AFS Sveriges Riksbank).

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