

Staff memo

Swedish corporate bonds
during the coronavirus
pandemic

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A staff memo provides members of the Riksbank's staff with the opportunity to publish advanced analyses of relevant issues. It is a publication for civil servants that is free of policy conclusions and individual standpoints on current policy issues. Staff memos are approved by the appropriate Head of Department.

Clarification 15 October 2020

Clarifications have been made on pages 13-14 of this Staff Memo, which was published on 8 October 2020. Another source has been added to Diagram 17 and the text referring to the diagram has been updated. Diagram 18 has been changed to include credit ratings on the bond level, so that it tallies with Diagram 17. Due to these changes, the section heading has been altered to "Large number of issuers without a credit rating making credit risk more uncertain".

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Summary

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The coronavirus pandemic has had serious consequences for the global economy and considerable uncertainty has characterised financial markets since its outbreak. The corporate sector has been hit hard by a substantial decline in demand for goods and services, disruptions to production and a more difficult funding situation. Some branches have been hit particularly hard.

Both in Sweden and abroad, corporate bonds were a type of asset hit especially hard by the uncertain situation for companies and the extreme stress on financial markets around the world. Risk premiums increased substantially in March 2020, at the same time as the liquidity situation on the Swedish bond market deteriorated rapidly. This was because many investors wanted to find less risky types of asset than corporate bonds in the prevailing situation. This created a sales pressure that was much higher than normal on the market and resulted in large price falls.

Companies' issues of bonds were also affected by the stress. It became more expensive and more difficult for companies to issue new bonds. For a period in March 2020, no new bonds were issued at all, as investors and issuers could not agree on prices, and the fact that the investor base was reduced.

Corporate bonds are generally riskier for investors than for example government bonds, municipal bonds and banks' (mortgage lending companies') covered bonds. Not only does this mean that the required rate of return from investors is higher, but also that corporate bonds are more exposed if risk appetite on the financial markets deteriorates. There are also a number of factors that distinguish the Swedish corporate bond market and these may have contributed to the very high stress level during spring 2020. The factors discussed in this Staff memo are: relatively small market with many small players and limited liquidity; unreliable pricing as a result of a lack of transparency in pricing and trading; a large share of issuers without credit ratings; and the property companies' large share of issues and the fact that this sector at least initially was hit hard by the coronavirus pandemic.

Economic developments going forward are still uncertain, as is the situation on financial markets. The Swedish bond market will remain vulnerable if stress arises once again, partly because of the factors mentioned that are distinguishing features of the Swedish market.

¹ The author would like to thank Karl Blom, Richard Eidestedt, Johan Grip, Jens Iversen, Mats Levander, Olof Sandstedt, Ulf Stejmar, Johanna Stenkula von Rosen, Vanessa Sternbeck-Fryxell and Marianne Sterner for their valuable comments on earlier drafts. The author would also like to thank Elizabeth Nilsson and Gary Watson for their valuable help with translating the publication. The views presented in this text are the author's personal opinions and are not to be regarded as an expression of the Riksbank's view on these issues.

Corporate bonds have become an increasingly important source of funding

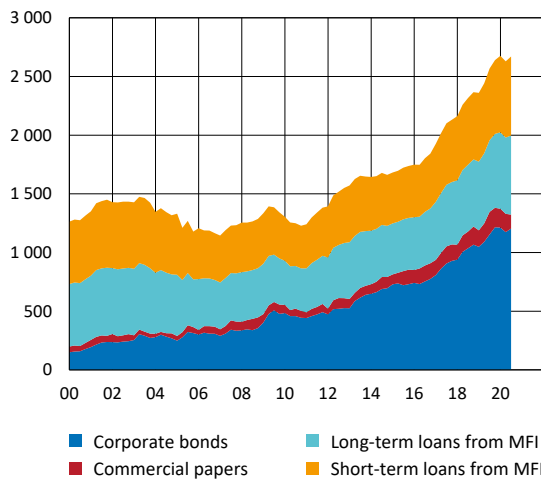
This Staff memo discusses the Swedish corporate bond market and the extreme stress it suffered when the coronavirus pandemic broke out. The Riksbank has written about this subject on several occasions in shorter texts.² This Staff memo aims to provide a more in-depth description.

The first section describes the sequence of events in March 2020 and onwards, while the following section discusses some possible reasons why the market was hit so hard.

The bond market (*corporate bonds*)³ has become an increasingly important source of financing in recent years, as companies have wanted to diversify their funding (see Diagram 1). This development has also been due to the low interest rates, which have made it cheap for companies to obtain funding on the bond market and led to a high demand for these securities from investors.⁴

Outstanding volumes of corporate bonds issued by Swedish non-financial corporations amounted at the end of August 2020 to just over SEK 1,208 billion (see Diagram 2), of which SEK 553 billion comprised bonds issued in Swedish kronor (SEK) and 655 billion comprised bonds issued in other currencies.⁵

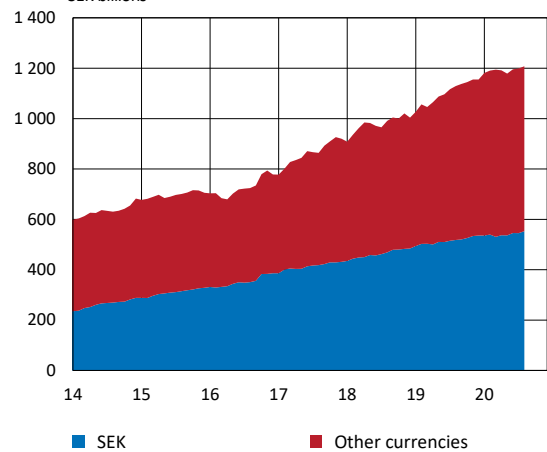
Diagram 1. Swedish non-financial corporations' loan financing
SEK billions



Note. Monetary Financial Institutions (MFIs) include banks, mortgage institutions, financial companies, municipal and institutions financing municipalities and companies, monetary securities companies and monetary investment funds (money market funds).

Source: Statistics Sweden (Financial accounts)

Diagram 2. Outstanding volumes of corporate bonds issued by Swedish companies
SEK billions



Source: The Riksbank and Statistics Sweden (SVDB)

It is essentially positive that companies are increasingly often combining traditional bank loans with other sources of funding, as this spreads risks in the financial system. However, securities borrowing also entails risks. For example, it can quickly be both expensive and

² See Sveriges Riksbank (2020a), Sveriges Riksbank (2020b) and Sveriges Riksbank (2020c).

³ Corporate bonds in this Staff memo refer throughout to bonds issued by non-financial corporations.

⁴ See, for example, Sveriges Riksbank (2020b) for more detailed reasoning on this subject.

⁵ Bonds issued in euros (EUR) in particular, but also smaller volumes in, for instance, US dollars (USD), Norwegian krone (NOK) and pounds sterling (GBP).

difficult for companies to refinance their loans if prospects in their own sector change significantly or if there is turmoil on the financial markets.⁶

Capital Markets Union expected to lead to an increase in market-based funding going forward

In September 2015, the European Commission adopted a plan of action to create a single market for capital in the whole of the European Union. This plan of action is called the Capital Markets Union, CMU. Its purpose is to mobilise capital to the real economy to increase investment and in this way support economic growth and create more jobs. In more concrete terms, it is a question of making it easier for companies to find sources of funding other than bank financing and to reduce their costs for acquiring capital.⁷ This shall be achieved by harmonising Member State regulatory frameworks and simplifying the regulations for borrowing on the securities markets.⁸

Non-financial corporations within the EU are in general strongly dependent on funding from banks and relatively less dependent on the capital markets, although the situation varies for companies of different sizes. In the United States, the capital markets account for a much larger share of corporate funding than in the EU. This has been the situation for a long time.⁹ The Capital Markets Union is expected to lead to companies in the EU beginning to use wholesale funding to a greater degree.

Originally, the plan of action was to be implemented in 2019. However, in September this year, the Commission presented a new set of proposals for measures within the scope of the Capital Markets Union, so the work will continue.

Issuance and trading of corporate bonds

Corporate bonds, both in Sweden and on other corporate bond markets around the world, are normally issued as *senior unsecured*, which means as senior loans (that is, loans that are high up in the repayment hierarchy) without any collateral back-up in the event of default. This applies in particular to the investment grade segment. The use of collateral is more common in the high yield segment.¹⁰

The corporate bond market can be divided into a *primary market* and a *secondary market*. When companies issue new bonds, they do so on the primary market. The lenders (investors) who buy a bond on the primary market can then choose to sell it on to other investors before it has matured. They do this on the secondary market. Most of the transactions on the secondary market are made bilaterally between buyer and seller over the telephone or an online chat, that is to say outside regulated marketplaces (this is known as *over-the-counter* or *OTC-trading*).

There are around ten or so participants on the Swedish secondary market, consisting of banks and bond brokers who set prices (known as *screen prices*).¹¹ These are prices governed by either what their customers are prepared to pay, what they themselves are prepared to trade for or that show how they assess the current state of the market. These agents have no explicit obligation to act as market makers, that is, to guarantee that they are always prepared to buy or sell corporate bonds themselves at a stated price.¹² In this way, the corporate bond market differs from the markets for government bonds and covered bonds.¹³ However, the Swedish corporate bond market is not unique in lacking market makers, and the situation is the same in corporate bond markets around the world. This also applies to the US and European markets, which are much larger than the Swedish market. However, one

⁶ Sveriges Riksbank (2018), Sveriges Riksbank (2019a) and Sveriges Riksbank (2019b).

⁷ It can be important to point out here that exposure of banks to companies does not disappear completely if wholesale funding increases, it just takes on other forms. Banks still provide back-up facilities in the form of credit lines and syndicated loans, for instance, which companies can use when needed.

⁸ See http://ec.europa.eu/finance/capital-markets-union/index_en.htm for more detailed information.

⁹ See, for instance, the IMF (2019).

¹⁰ Investment grade consists of credit ratings corresponding to BBB-/Baa3 or higher, while high yield consists of credit ratings corresponding to BB+/Ba1 or lower.

¹¹ Normally, prices are first set by the bank or banks that have helped to issue the bond. In time, other participants set prices for the same bond. The more participants who are willing to set prices for a bond, the better the pricing.

¹² However, the bank or banks that have helped to issue a bond may undertake to support trade in this bond. In this case, there will be an agreement between the issuer and the bank/banks.

¹³ Sveriges Riksbank (2020b).

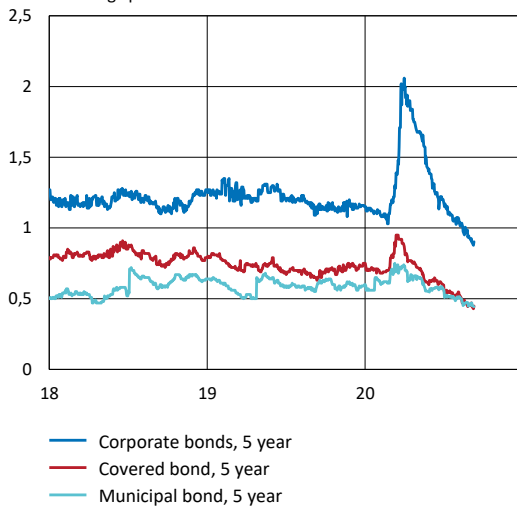
important difference is that the larger foreign markets are essentially more liquid, as they, for instance, have more large participants and better repo and assurance possibilities. This increases the options for intermediaries to protect their trading books and for investors whose strategies are dependent on being able to take what are known as short positions.¹⁴

Developments in March 2020 and onwards

The coronavirus pandemic has had serious consequences for the global economy and considerable uncertainty has characterised financial markets since its outbreak. The corporate sector has been hit hard: demand for goods and services has declined sharply, production has been disrupted and it has become more difficult to obtain funding. This has led to declining income and difficulties in paying expenses, particularly in certain sectors that have been particularly hard-hit. Governments, central banks and other authorities around the world have therefore implemented measures to mitigate the effects on the real economy and reduce turmoil on the financial markets.¹⁵

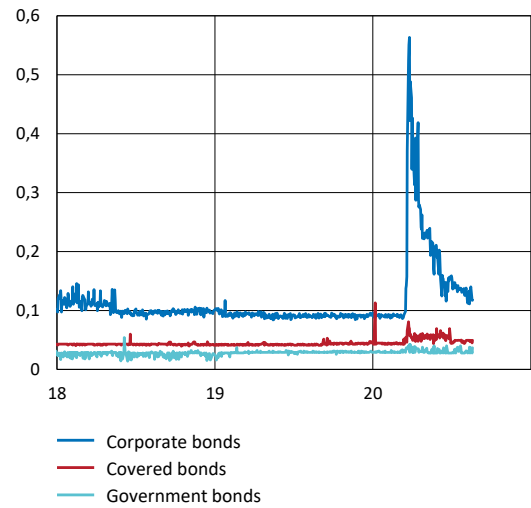
Corporate bonds were hit particularly hard by the uncertain situation for companies and the extreme stress on the financial markets around the world. In Sweden, this was apparent from, for example, sharply increased risk premiums¹⁶ for corporate bonds in relation to other types of Swedish bond in March 2020 compared with the period before (see Diagram 3). The stress also led to large differences in the bid-ask spreads in relation to the period before (see Diagram 4). From having remained stable around 0.1 per cent for a long time, the bid-ask spread rapidly rose to more than 0.5 per cent, which indicates that the liquidity situation on the market deteriorated rapidly and substantially. Many investors suddenly wanted to sell their corporate bonds, but there were few buyers for them.

Diagram 3. Yield spreads for different Swedish bonds
Percentage points



Note. Yield spread in relation to the government bond yield. Covered bonds and corporate bonds are calculated as zero coupons using the Nelson-Siegel method. Corporate bonds for companies with credit ratings of BBB or higher. Municipal bonds are benchmark bonds, issued by Kommuninvest i Sverige AB.
Sources: Bloomberg, Macrobond, Refinitiv and the Riksbank

Diagram 4. Bid-ask spreads for different Swedish bonds
Per cent

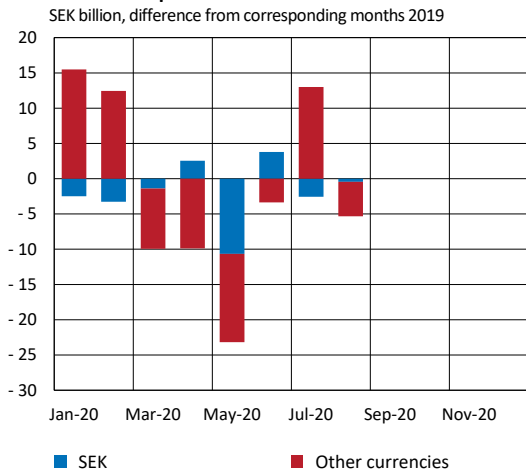


Note. Average listed prices, based on all available nominal government bonds, and just over 50 corporate bonds with varying maturities and with credit ratings equivalent to BBB or higher.
Sources: Refinitiv and the Riksbank

¹⁴ Short positions are a means of generating positive return on a falling market. A short position can, for instance, be taken by selling a borrowed asset and at a later stage buying it back at a hopefully lower price before it is returned.
¹⁵ See further, for instance, Sveriges Riksbank (2020a) and Sveriges Riksbank (2020b). For descriptions of the impact of the coronavirus pandemic on financial markets and the real economy in an international perspective, see for instance BIS (2020), IMF (2020a), IMF (2020b) and ECB (2020).
¹⁶ The risk premium reflects the difference between investors' expected return on the asset and the risk-free yield. The risk premium for corporate bonds and other interest-bearing asset types is affected by factors such as credit risk and liquidity risk associated with the investment. The liquidity risk is discussed in greater detail in a later section.

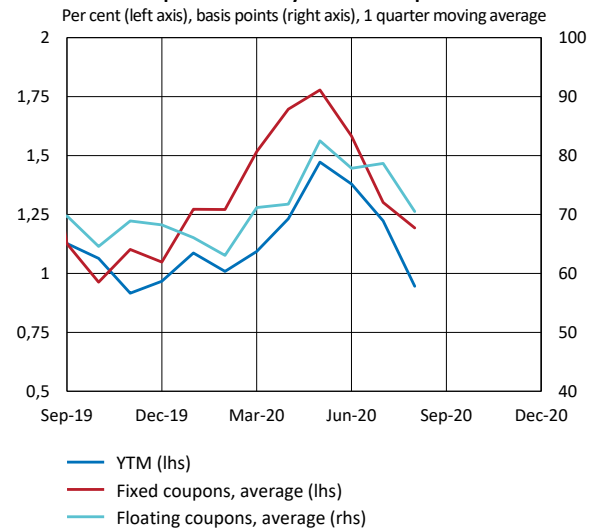
The stress that arose affected both the primary and secondary markets for Swedish corporate bonds. When risk premiums increase on the secondary market, it is natural for investors to increase their required rate of return for new bonds issued on the primary market.¹⁷ Quite simply, it becomes more expensive for companies to issue. For a period in March 2020, no new bonds were issued at all, and the primary market stood still, as investors and issuers could not agree on prices. Some investors had also shunned corporate bonds in favour of less risky asset types and were not interested in investing in corporate bonds in the prevailing situation. All in all, this led to issue volumes declining in relation to the corresponding monthly volumes in 2019, which is illustrated in Diagram 5,¹⁸ and to the companies that then continued to issue during the late spring 2020 having to do so at higher interest rate costs than before (see Diagram 6).

Diagram 5. Monthly volumes of corporate bonds issued by Swedish companies



Note. Refers to gross issue volumes.
Source: The Riksbank and Statistics Sweden (SVDB)

Diagram 6. Yield to maturity (YTM) and interest expenditure for issues of corporate bonds by Swedish companies



Note. Refers to bonds issued in SEK. Mean values are unweighted. There is no reliable information in the underlying data for some bonds, which means they have been excluded from the chart. The chart therefore refers to a large sample of the bonds issued, rather than a total picture of the market.
YTM is the total yield the investor receives on the bond if it is retained until maturity expressed as an annual rate. The values for floating coupons refer to supplement on risk-free interest (in this case often 3-month STIBOR).
Sources: Dealogic, Sveriges Riksbank and Statistics Sweden (SVDB)

Issue volumes increased relatively quickly again following the stressed situation in March 2020, as is also illustrated in Diagram 5, at the same time as risk premiums and yields gradually declined. One contributory factor to this was the overall measures taken by the public sector, including the Riksbank's decision to purchase corporate bonds and commercial papers, to counteract the effects of the coronavirus pandemic on the Swedish economy and Swedish financial markets.

It was primarily issuers with higher credit ratings who could start to issue again at an early stage¹⁹, while it took longer for companies with lower credit ratings. There were also differences between the different sectors. One example is that it took a little longer for issues from property companies to pick up, which is discussed in a later section.

¹⁷ It is common when issuing new bonds to sound out existing investors to gain an idea of what price they are prepared to pay for the bond.

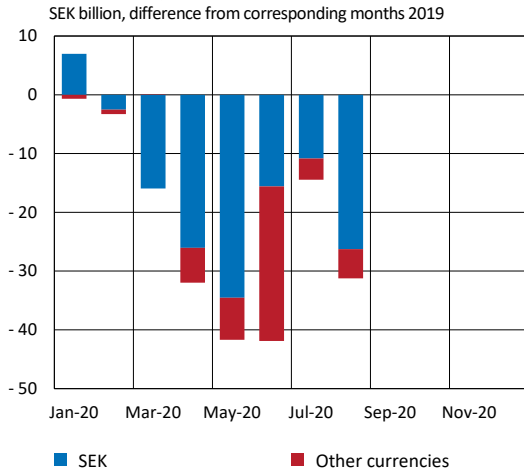
¹⁸ See also Diagram 21 in the Appendix which illustrates net issue volumes, that is gross issue volumes minus repurchases and redemptions of old bonds. It then also becomes clear that Swedish non-financial corporations issued a negative net volume in SEK in March 2020 and then returned to a positive net total in the following month.

¹⁹ See Diagram 22 in the Appendix.

Corporate papers with shorter maturities was also hard-hit

The stressed situation that arose in March 2020 was not isolated to the corporate bond market; corporate papers with shorter maturities (commercial paper) was also hit hard during the initial phase of the crisis.²⁰ Issue volumes declined substantially compared with the corresponding months in 2019 (see Diagram 7) and the companies that still wanted to and could issue commercial paper had to do so at higher costs than before (see Diagram 8).

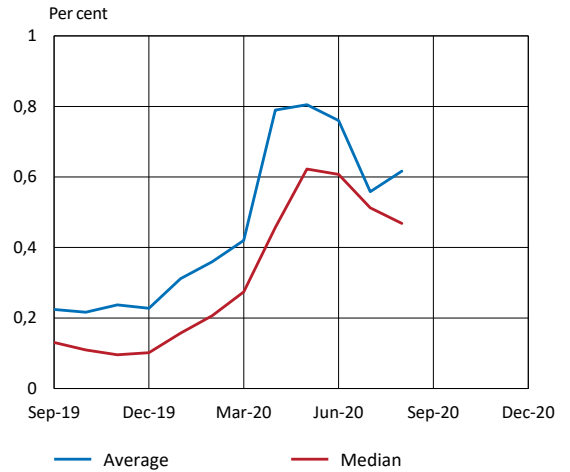
Diagram 7. Monthly volumes of commercial paper issued by Swedish companies



Note. Refers to gross issue volumes.

Source: The Riksbank and Statistics Sweden (SVDB)

Diagram 8. Yield for commercial paper in SEK issued by Swedish companies



Note. The mean value is unweighted. There is no reliable information in the underlying data for some commercial paper, which means it has been excluded from the chart. The chart therefore refers to a large sample of the paper issued, rather than a total picture of the market.

Source: The Riksbank and Statistics Sweden (SVDB)

Commercial paper is not dealt with further in this Staff Memo, as the focus here is on the Swedish corporate bonds market, which is a much larger market in terms of outstanding volumes (see earlier Diagram 1). However, on the basis of Diagram 7 and Diagram 23 in the Appendix, it can be noted that the commercial paper market in SEK has not returned to the same extent as the corporate bond market, with regard to issue volumes in relation to previous years. Instead, some of the Swedish companies have replaced this type of financing with other forms, such as bank loans.²¹

The stress was similar in other countries

Many corporate bond markets around the world experienced, in the same way as the Swedish market, a large rise in risk premiums on the secondary market when the coronavirus pandemic broke out in earnest. This was the case, for instance on the large European and American corporate bond markets, which is illustrated in Diagram 9. On these markets, too, issue volumes slowed down substantially over the course of a few weeks in March 2020.²² From having been at roughly the same levels as in 2019 in January-February 2020, accumulated issue volumes on the European market then declined to levels that were lower than the previous year at the same point in time (see Diagram 10). On the US market, the accumulated issue volumes were above the previous year's levels in January-February 2020, and then fell as a result of the decline in issuance in March 2020.

It is difficult to compare the degrees of stress that arose on other corporate bond markets around the world with the stress on the Swedish market. This is because the markets differ with regard to functionality, participants and size. Moreover, the measures taken by

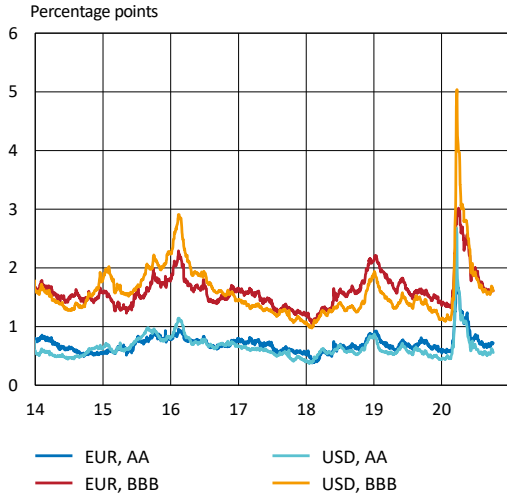
²⁰ In general, corporate bonds have maturities of >1 year and commercial paper of <1 year. The average maturity of bonds and paper issued by Swedish non-financial corporations in SEK in 2019 was about 4.5 years and about 4 months respectively.

²¹ Frohm, Grip, Hansson & Wollert (2020).

²² See also Aramonte & Avalos (2020).

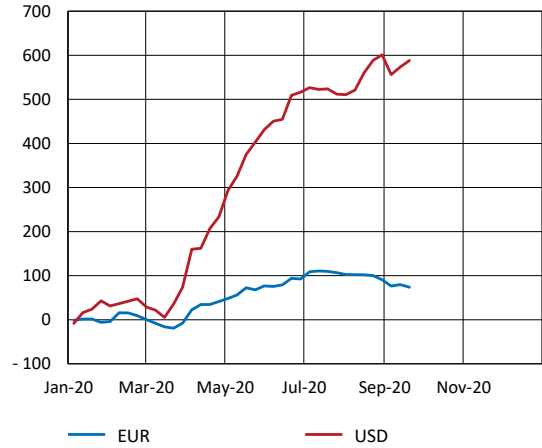
governments and authorities in various countries to support the local bond markets varied in scope and were implemented at different points in time. This may have made the stress more or less substantial at different times in different areas.

Diagram 9. Yield spread for 5-year corporate bonds issued in the euro area and the United States respectively



Note. Yield spreads compared with corresponding government bond yields. Note that the figure shows not only Swedish non-financial corporations issuing in EUR and USD, but non-financial corporations of all nationalities issuing in these currencies.
Source: Macrobond

Diagram 10. Accumulated weekly volumes of corporate bonds issued in the euro area and the United States respectively
USD billions, difference from corresponding weeks 2019



Note. Including medium-term notes (MTNs). Note that the figure shows not only Swedish non-financial corporations issuing in EUR and USD, but non-financial corporations of all nationalities issuing in these currencies. Each point in time (week) corresponds to accumulated issue volumes so far during the year, minus the accumulated issue volumes during the corresponding period in 2019.
Source: Dealogic

During the late spring and summer 2020, risk premiums declined on both the European and US markets, and the rate of issuance picked up again, which was also the case on the Swedish corporate bond market. This became particularly clear on the US market, which is illustrated in Diagram 10. Issued volumes so far in 2020 have already attained record levels in September on an annual basis (the previous record year was 2017).²³ Issues picked up again after the Federal Reserve (Fed) announced at the end of March 2020 that they will be buying corporate bonds as a measure to alleviate the consequences of the coronavirus pandemic. The Fed buys bonds from both the primary and secondary markets.²⁴

Why was the corporate bond market hit so hard?

Corporate bonds are generally riskier for investors than for example government bonds, municipal bonds and banks' (mortgage lending companies') covered bonds. Not only does this mean that the required rate of return from investors is higher, but also that corporate bonds are more exposed if risk appetite on the financial markets deteriorates.²⁵ Investors then tend to turn to less risky asset types that have lower credit risk and better liquidity. But this depends on what type of stress has occurred. So far, the corona crisis has primarily hit the real economy rather than the banking sector. More specifically, the crisis has had a negative effect on corporate revenues and cashflows, which has also led to higher credit risk for investors as the probability of default has increased. There are also a number of factors that distinguish the Swedish corporate bond market and these may have contributed to a significantly higher stress level. Some of these factors are discussed below.

²³ See, for example the Financial Times on 2 September 2020, "US corporate bond issuance hits \$1.919tn in 2020, beating full-year record".

²⁴ See the Federal Reserve's website (<https://www.federalreserve.gov/>) for descriptions of the various purchasing programmes.

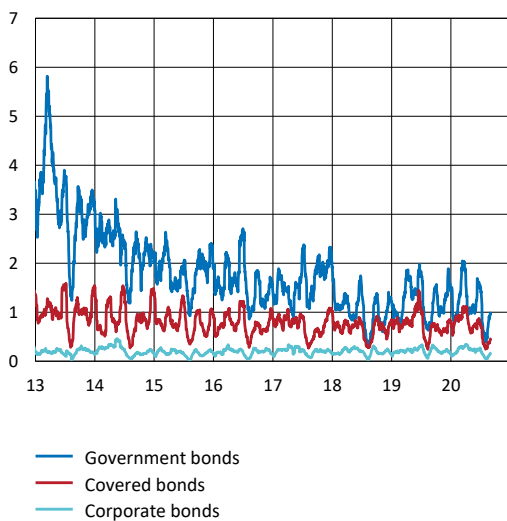
²⁵ There are a few international trends that have probably accentuated the differences between corporate bonds and other less risky bonds. These include the average credit quality having gradually fallen year on year in terms of credit ratings, even in the investment-grade segment, and investor compensation, in the form of covenants, having gradually deteriorated, especially in the high-yield segment. See, for instance, Çelik, Demirtaş & Isaksson (2019). This development has probably been strengthened by the high demand for corporate bonds from investors as a result of prolonged and continuing low interest rates.

Small market with many small players and limited liquidity

As illustrated earlier in Diagram 4, liquidity in March 2020 deteriorated sharply on the Swedish corporate bond market. However, the market has long since been characterised by relatively low liquidity compared to other bond markets (see Diagram 11). A large proportion of bonds are held from issue to maturity or are traded only a few times during their tenor. It is therefore reasonable to assume that the required rate of return for Swedish corporate bonds accommodates a larger liquidity premium than it does for, for example, European or US bonds, where the liquidity situation on the secondary market is generally better. It is also reasonable to assume that the liquidity premium for the Swedish market varies over time, as liquidity is deemed sometimes to be better and sometimes to be worse (see Diagram 12).

Investors primarily consist of investment funds (the majority of which are UCITS-funds and only a small proportion are alternative investment funds), different types of pension and insurance companies and the National Swedish Pension Funds. In addition, banks and bond brokers hold a small proportion of bonds in the form of smaller trading stocks. The Swedish market lacks certain categories of investor that can be found on, for example, the larger European and US markets, where they contribute liquidity. An example is Exchange Traded Funds, ETFs. One reason for this is that repo and hedging options are limited on the Swedish market, which in turn makes it more difficult to cover short positions. During the period of stress in March 2020, there was also a considerable lack of investors willing to take risk and act as buyers. Many players wanted to sell, but few were prepared to buy. The banks' limited trading stocks also quickly filled up.

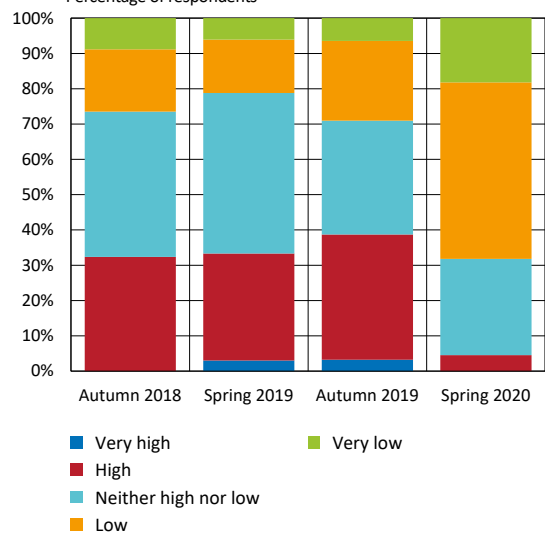
Diagram 11. Turnover on the Swedish bond market
Per cent



Note. Refers to monthly average of daily spot turnover in relation to outstanding amount.

Sources: Swedish National Debt Office, Statistics Sweden and the Riksbank

Diagram 12. The views of market participants on liquidity for corporate bonds (IG) issued by Swedish companies
Percentage of respondents



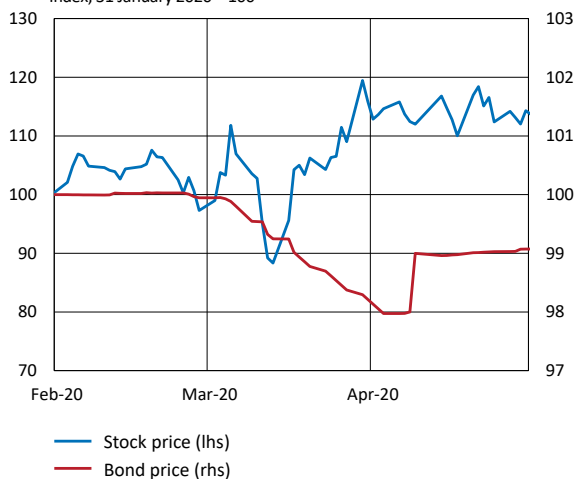
Note. The Financial Markets Survey is sent out to Swedish and non-Swedish participants, who are active in the Swedish fixed-income and/or FX market. The number of respondents to this question has varied between 35 and 52 during the reported time period.

Source: The Riksbank (Financial Markets Survey)

If there is a shortage of speculators, investors who need to sell bonds, in the event of stress, for example, will be forced to do so at sharply reduced prices (so-called *fire sales*). Or they may also need to sell other securities when they cannot sell their corporate bonds. A high sales pressure in turn leads to price pressure on the market, leading to higher risk premiums. This may lead to further sales when remaining investors see the market values of their bonds fall, mark-to-market losses and consequently further price pressure as a result of this. It may also cause a reduction in issuing activity on the primary market as it becomes more expensive for companies to issue. It thereby becomes more difficult for companies to obtain funding.

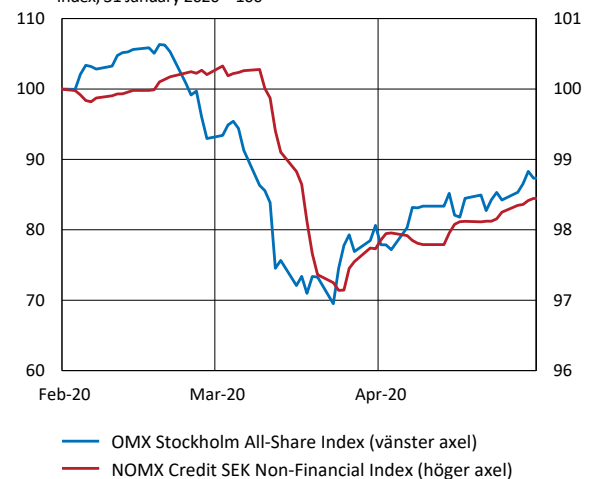
Liquidity on the market can also affect how long the recovery takes once the stress has died down. One way of obtaining an indicative picture of this is to compare the corporate bond market with the equity market. This can be done for both individual companies (given that they are listed) by comparing the pricing of their bond compared with their stock price, an example of which is given in Diagram 13, and for a wider basket of bonds and equities, which is illustrated in Diagram 14. In both cases, the bond market react more slowly than the equity market both when prices fell at the beginning of March and when the recovery was in its infancy.²⁶

Diagram 13. Stock price and bond price for a Swedish industrial company
Index, 31 January 2020 = 100



Note. The bond matures in 2021.
Source: Bloomberg

Diagram 14. Share index and corporate bond index for Swedish companies during the stressed situation in the spring of 2020
Index, 31 January 2020 = 100



Note. Refers to price return indices. Note that the composition of companies differs in the various indices.
Sources: Macrobond, Nasdaq OMX

Large fund outflows created greater-than-normal sales pressure

Investment funds are large owners of Swedish corporate bonds (see Diagram 15).²⁷ They were responsible for over 42 per cent of the total Swedish ownership at the end of the first quarter of 2020. How the funds act on the market therefore has a considerable impact on the market in general. The funds are in turn intermediaries between fund shareholders and financial markets. Their actions as regards the purchase and disposal of underlying assets is very much guided by the deposits and redemptions of fund shareholders. However, the funds steer the composition of their portfolios themselves according to their own investment restrictions and prevailing legislation.

In March 2020, when the turmoil gradually increased, many fund shareholders wanted to redeem their holdings in higher-risk funds and invest in safer asset types instead. This led to a very large outflow from corporate bond funds, for example, as illustrated in Diagram 16.²⁸ To be able to meet these outflows, many funds wanted to sell some of their corporate bond

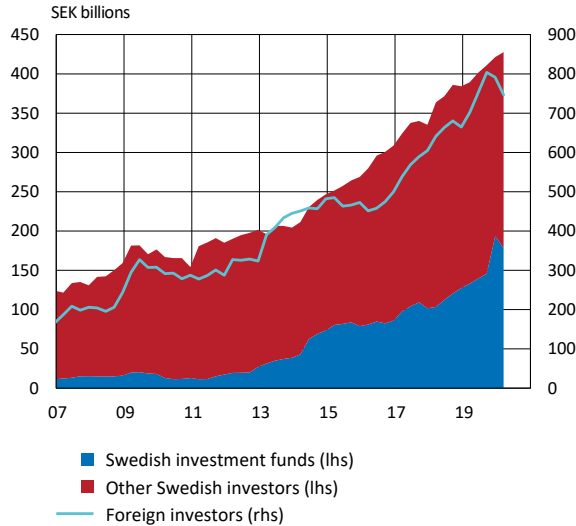
²⁶ It is important to point out that the prices don't always follow each other. It depends on what is happening in the company in question. Shareholders are primarily interested in factors that increase the equity value (or increase the dividend), while bondholders are primarily interested in the funding situation and debt-servicing ability. An example can be if the company increases its borrowing for one reason or another. If the increased borrowing is used for the "right" purpose according to the shareholders, it may increase the equity value, while the bondholder may see the increased borrowing as negative, as the company's debt-servicing ability with regard to its bond loan can deteriorate when the company in question has other loans that need to be repaid.

²⁷ During the stressed situation in March 2020, there were about 180 funds with Swedish corporate bond holdings. Many of these were relatively small, however. Just over a third of them had managed capital of less than SEK 1 billion and just over half had less than SEK 2 billion.

²⁸ A large proportion of these funds are aimed at private individuals and other small investors. It was primarily shareholders in these funds who wanted to sell their shares during the stressed situation. Institutional fund shareholders retained their shares to a greater extent. There has been some criticism about private individuals not understanding the risk associated with corporate bonds, in part because there was no efficient way for the funds to measure liquidity risk. See for instance, an article in Svenska Dagbladet on 11 April 2020, "Fondkritik – sparare förstod inte riskerna (Criticism of funds – savers were unaware of the risks)".

holdings²⁹, which created a sales pressure on the market that was significantly greater than normal and as a result considerable downward price pressure on the bonds.

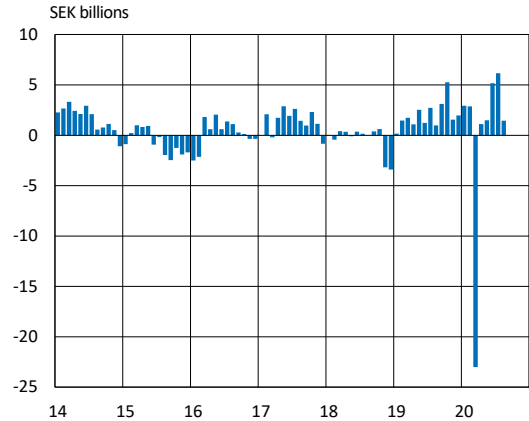
Diagram 15. Holders of corporate bonds issued by Swedish non-financial corporations



Note. Refers to bonds issued in all currencies. Swedish investors primarily buy bonds issued in SEK, while foreign investors primarily buy bonds issued in foreign currency. For this reason, they are presented on different axes.

Source: Statistics Sweden

Diagram 16. Monthly net fund flows for Swedish corporate bond funds



Note. Net flows are deposits minus withdrawals by fund shareholders.

Source: Macrobond

It has already previously been highlighted that the liquidity situation for Swedish corporate bond funds can become strained in a stressed situation as there is a shortage of liquidity on the underlying market. The International Monetary Fund (IMF) warned about this already in 2016 in its assessment of stability in the Swedish financial system (*Financial System Stability Assessment*).³⁰ The European Systemic Risk Board (ESRB) also repeatedly points out in its recurring annual reports on the so-called non-banking sector in Europe that so-called *liquidity transformation* among funds, for example, creates risks in general for the financial system.³¹ Liquidity transformation is, for example, when funds offer their shareholders daily liquidity in the form of withdrawal options at one end and invest fund wealth in less liquid assets at the other. This may make it difficult for funds to cover larger outflows from shareholders with sales of underlying assets in their portfolios, which they need to do if the liquid assets held in the portfolios are insufficient.

Unreliable price picture as a result of poor transparency in pricing and trading

The stress experienced by many Swedish corporate bond funds in March 2020 forced some of them to postpone trading for their shareholders, i.e. temporarily close the fund for deposits and redemptions. This happened to around thirty funds managed by just over ten different fund management companies.³² All the fund management companies said that they were forced to close the funds because it was not possible to calculate reliable prices for the underlying holdings of Swedish corporate bonds in the prevailing stressed situation.

²⁹ Normally, funds cover regular withdrawals from their shareholders with deposits from other shareholders or with cash items. But when large outflows occur unilaterally and suddenly, as in March 2020, funds may need to dispose of assets in their portfolios to be able to meet the outflows.

³⁰ IMF (2016). On the number of occasions, the Riksbank has highlighted the low liquidity on the corporate bond market. See, for instance, Sveriges Riksbank (2016).

³¹ ESRB (2019).

³² More on this subject can be found in, for instance, Sveriges Riksbank (2020a) and Finansinspektionen (2020).

Even though the issue of bond price reliability came to a head in March 2020, the problem has been around for quite some time.³³ An example is how prices are set for bonds that are traded very infrequently. These bonds become the subject of subjective assessments, or underlying models³⁴, where banks and bond brokers estimate that it should be possible to trade the bonds at present. Not until the bonds are traded does it become clear how accurate the indicative prices are. In some cases, there can be considerable differences between the indicative prices and the prices at which transactions later occur.

Another example is that it is difficult for investors to see the latest trades (prices and volumes) in individual bonds, as there can be a time-lag in trade reporting. Screen prices are thus not always fully updated with all the available information. This is a substantial difference compared to, for example, the US corporate bond market, where trades must be reported within 15 minutes. This trade reporting is then made public in real time so that investors and other stakeholders can take part of it.³⁵

If prices on the Swedish corporate bond market had been more reliable, it would have been easier for investors to assess where the market was during the stressed period in the spring of 2020 and thus made it easier for buyers and sellers to agree prices. This could have alleviated the substantial stress that occurred, and that was aggravated by investment funds, as important investors on the market, being unable to value their bond holdings reliably. It may then not have been necessary for the funds to close, at least not as many as were forced to do so.

In September 2020, Finansinspektionen (FI) has communicated that it wants to see greater transparency on the Swedish corporate bond market, especially when it comes to trade reporting and publication. A joint project is currently being conducted by sector organisations and authorities (including the Riksbank) to achieve this.³⁶

A large share of issuers without a credit rating makes credit risk more uncertain

Credit ratings can be issued to both a bond and its issuer, i.e. on the company level. Credit ratings make it easier for investor to quickly assess credit risk from time to time.³⁷ On the Swedish corporate bond market a relatively large proportion of both the bonds and issuers have no credit rating, which is a clear difference compared to, for example, the European market. The distribution of credit ratings is illustrated in Diagram 17 and Diagram 18. On the Swedish market, issuers without a credit rating were responsible for about 30 per cent of outstanding corporate bond volumes at the end of August 2020, while the corresponding figure for the euro area was about 8 per cent at the same point in time.

³³ See, for instance, Gunnarsdottir & Lindh (2011) and Bonthron (2014).

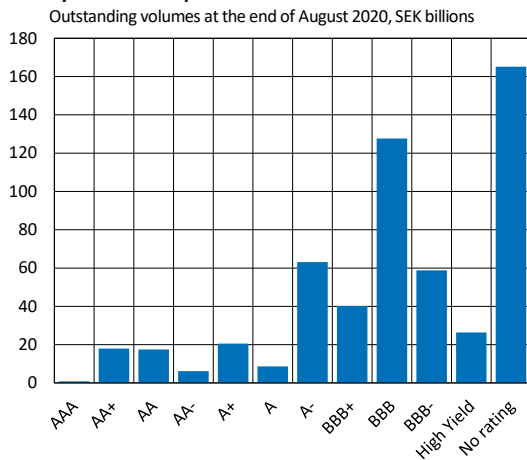
³⁴ The models can, for example, use credit risk based on credit ratings for comparable bonds. The situation becomes more difficult, however, when a large proportion of issuers do not have a credit rating. See the next section.

³⁵ The system is called *Trade Reporting and Compliance Engine (TRACE)*. See <https://www.finra.org/filing-reporting/trace>. On the European market, the trade reporting is similar to the Swedish, because legislation for the whole European Union applies.

³⁶ See <https://fi.se/sv/publicerat/nyheter/2020/fi-vill-se-okad-transparens-pa-foretagsobligationsmarknaden/>. The Riksbank has previously highlighted the importance of high transparency on the corporate bond market. See, for instance, Sveriges Riksbank (2017).

³⁷ Given that investors deem the credit ratings to be credible. Rating institutions were heavily criticised in conjunction with the outbreak of the financial crisis in 2008 in part because they had been overly generous with high credit ratings to certain instruments.

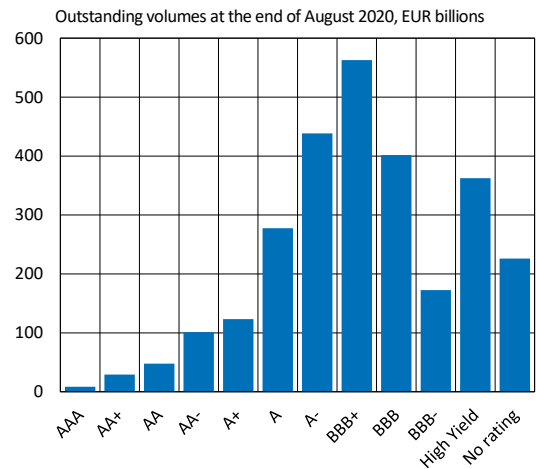
Diagram 17. Credit ratings for outstanding corporate bonds issued by Swedish companies in SEK



Note. Refers to credit rating on company and/or bond level. First, ratings on company level have been used, secondly ratings on bond level. In cases where there are several credit ratings at different levels, the lowest has been chosen.

Sources: The Riksbank and Statistics Sweden (SVDB), Bloomberg

Diagram 18. Credit ratings for outstanding corporate in the euro area



Note. Outstanding volumes issued in EUR. Refers to credit rating on company and/or bond level. First, ratings on company level have been used, secondly ratings on bond level.

Note that the figure does not just show outstanding volumes for Swedish non-financial corporations in EUR, but non-financial corporations of all nationalities that had outstanding volumes in EUR at that particular point in time.

Source: Dealogic

More issuers with credit ratings had not spared the Swedish market the substantial stress in March 2020, but might have alleviated it as it would have been easier and faster for investors to assess the credit risk in different bonds. This applies to both buyers and sellers.

Finally, it is worth mentioning that Swedish issuers without a credit rating include all types of companies from smaller, more unknown companies to larger well-known ones.

Property companies are large issuers and initially hit hard by the coronavirus pandemic

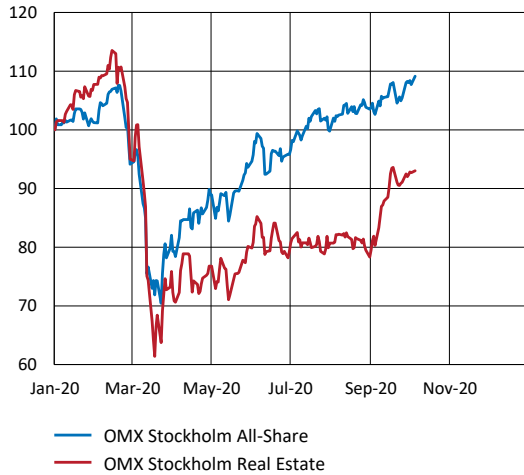
Property companies were responsible for 47 per cent of the outstanding value of corporate bonds issued in SEK at the end of August 2020 (see Diagram 24 in the Appendix). Property is the sector with the largest volumes within both the investment-grade and the high-yield segment. Because property companies make up such a large share of the corporate bond market, the entire market is affected by how investors assess the health of the property sector.

During the stressed period in March 2020 and since then, there has been apprehension among investors that the problems in some sectors might spill over to property companies, for example in the form of reduced rent revenues. This is, for instance, rent revenues from the retail trade, hotels and restaurants; sectors that have been hit hard by the restrictions imposed on society.³⁸ This hit the property sector hard on the financial markets when the coronavirus pandemic broke out in earnest. An example is developments on the equity market for listed Swedish property companies compared with a broader index. The initial price fall for property companies was deeper than for the market as a whole and the recovery that followed was slower (see Diagram 19). Looking at corporate bond issue volumes, it is also clear that property companies issued fewer bonds in the beginning of the coronavirus

³⁸ See, for instance, Sveriges Riksbank (2020a).

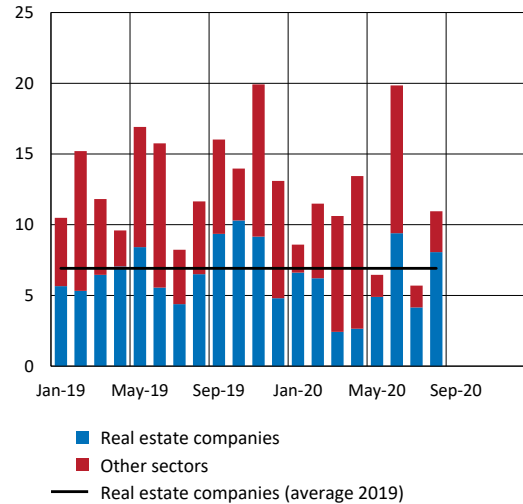
pandemic and for a time afterwards compared with average monthly volumes in 2019, as illustrated in Diagram 20.

Diagram 19. Share index
Index, 1 January 2020 = 100



Note. Refers to total return index.
Source: Macrobond

Diagram 20. Monthly volumes of corporate bonds issued in SEK by Swedish companies
SEK billions



Note. Refers to gross issue volumes.
Source: The Riksbank and Statistics Sweden (SVDB)

Due to the sector composition among Swedish issuers and the large proportion made up by the property sector, the Swedish corporate bond market differs somewhat from other Nordic markets. Although property is the largest sector in the investment-grade segment in Norway, in terms of outstanding volumes, the country’s large high-yield segment is instead dominated by sectors such as oil, transport and industry. The Norwegian corporate bond market was also hit hard by the coronavirus pandemic. In addition, the sharp fall in the oil price during approximately the same period led to further turmoil on the Norwegian market.

The Finnish and Danish corporate bond markets are also dominated by the industrial sector, and by the transport sector to a certain degree. It is worth noting, however, that the Finnish and Danish markets are significantly smaller than the Swedish and Norwegian markets in terms of outstanding volumes.³⁹

Important to continue to follow developments on the corporate bond market

The Swedish corporate bond market has gradually grown in size over the last ten years and become an increasingly important funding source for non-financial corporations. As a result, the market has become more significant for the real economy, while it has also increased in importance for different types of investors. The downside of this is that problems and stress that occur on the corporate bond market can more easily spread to the real economy and to other parts of the financial system. For example, the ECB and the ESRB have pointed out that any large downgrades in the credit ratings of corporate bonds as a result of the coronavirus pandemic in Europe may have a significant impact on the financial system and on financial stability. This is because many downgrades, especially from investment-grade, to high-yield can trigger sales of large bond holdings as a result of, for example, the design of the investment mandate and cause renewed stress on the markets and subsequent knock-on effects.⁴⁰

³⁹ See, for instance, Stamdata (2020) which is for the whole of 2019.
⁴⁰ See, for instance, ESRB (2020a) and ESRB (2020b).

Although the Swedish corporate bond market is assessed to be functioning better than in the spring of 2020, economic developments going forward are still uncertain, as is the situation on the financial markets. The Swedish bond market will remain vulnerable if stress arises once again, partly because of the factors that characterise the Swedish market and that are discussed here.

The Riksbank will continue to follow developments on the corporate bond market and where necessary propose measures to try and ensure that the market functions as smoothly as possible. Since September 2020, the Riksbank has also been a player on the Swedish corporate bond market.

The Riksbank's purchases of corporate bonds as a result of the corona crisis⁴¹

On 30 June 2020, the Executive Board decided that the Riksbank would, between 1 September 2020 and 30 June 2021, offer to purchase corporate bonds for a nominal amount of SEK 10 billion. The purchases of corporate bonds are part of the Riksbank's bond purchase programme, which was introduced in March 2020 to mitigate the economic effects of the coronavirus pandemic and support the Swedish economy. They comprise a complement to the Riksbank's purchases of commercial paper that have been in progress since April 2020.

The first purchases of corporate bonds were made in mid-September 2020. The purchases are made on the secondary market and includes bonds issued in SEK by Swedish non-financial corporations with a credit rating of BBB-/Baa3 or higher, and with a remaining maturity of up to 5 years. The Riksbank will apply a limit to its holdings of corporate bonds to no more than 50 per cent of an individual company's total outstanding volume of corporate bonds in Swedish krona and no more than 50 per cent of an individual bond issue.

⁴¹ See also Sveriges Riksbank (2020c).

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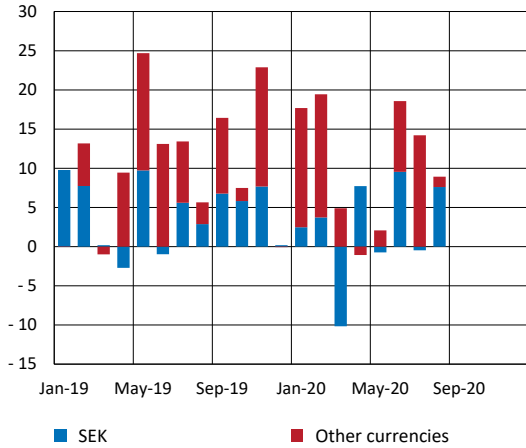
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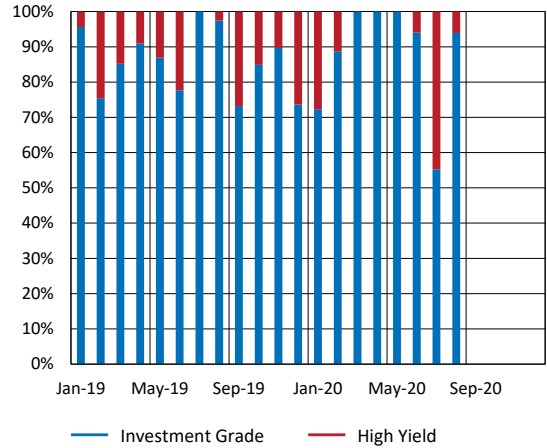
Appendix

Diagram 21. Monthly net issue volumes of corporate bonds issued by Swedish companies
SEK billions



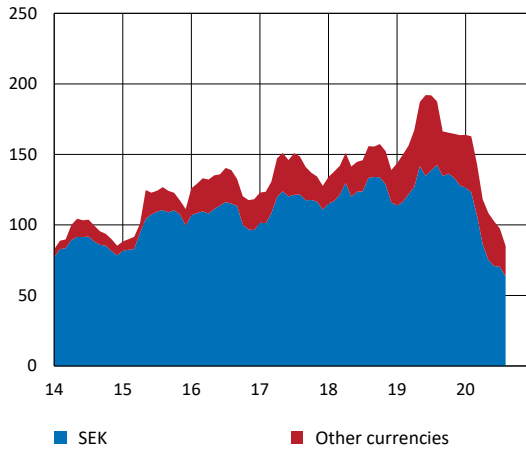
Note. Net issue volumes are gross issue volumes minus repurchases and redemptions of outstanding bonds.
Source: The Riksbank and Statistics Sweden (SVDB)

Diagram 22. Monthly issues of corporate bonds by Swedish companies in SEK by credit rating
Share of total issue volume per month



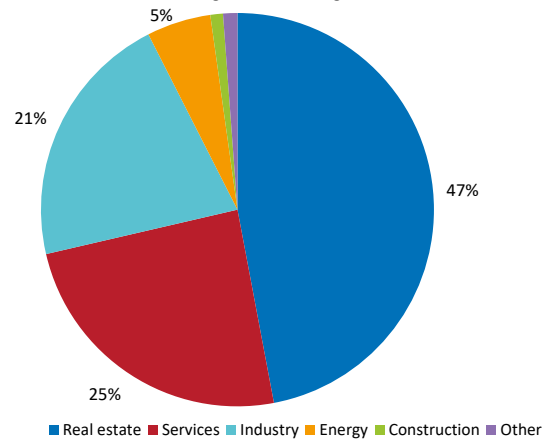
Note. Where no credit rating is available, a classification of the credit rating has been done by Dealogic.
Source: Dealogic

Diagram 23. Outstanding volumes of commercial paper issued by Swedish companies
SEK billions



Source: The Riksbank and Statistics Sweden (SVDB)

Diagram 24. Sector distribution for outstanding corporate bonds issued by Swedish companies in SEK
Share of total outstanding volumes, 31 August 2020



Source: The Riksbank and Statistics Sweden (SVDB)



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