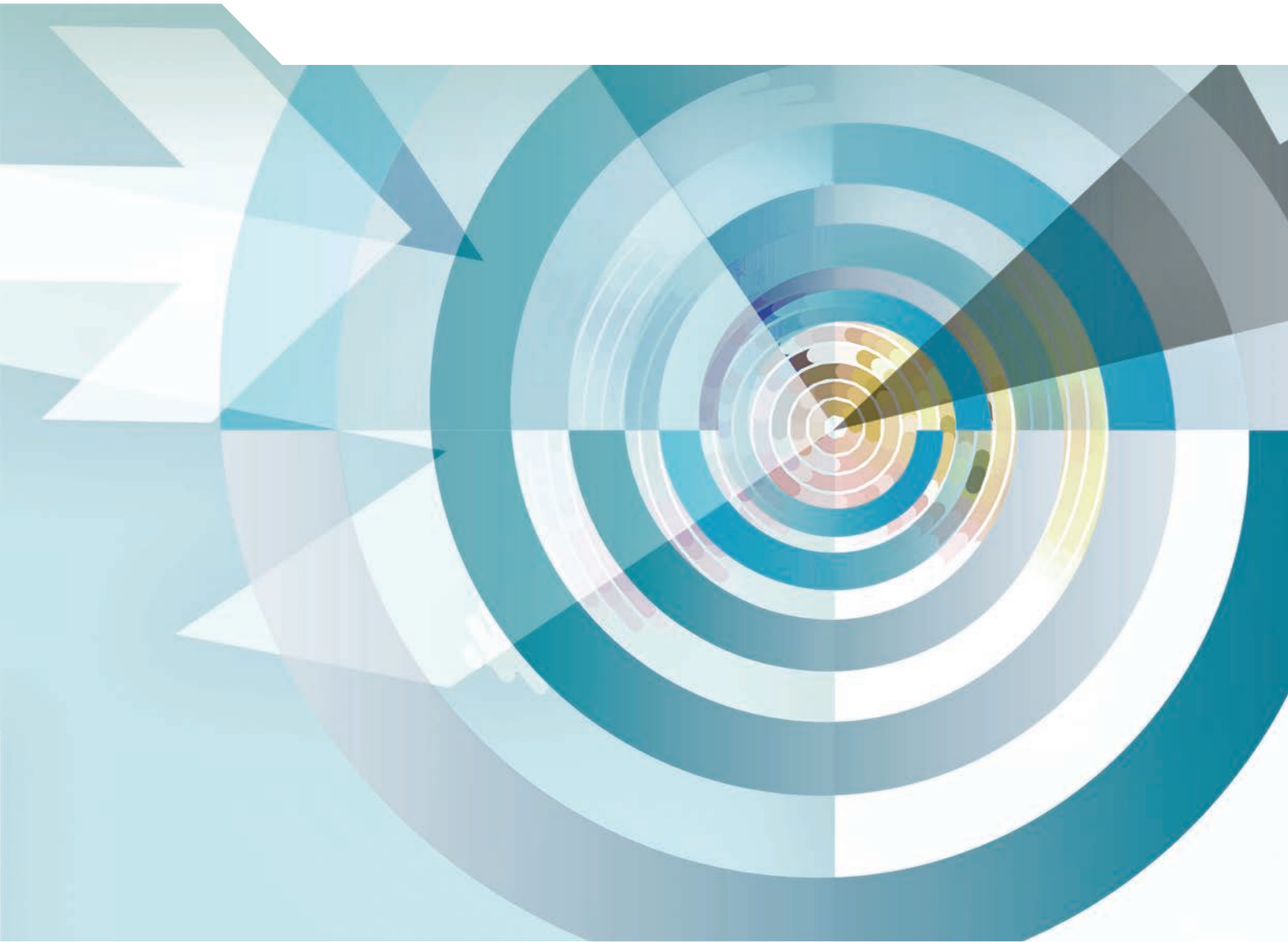




The Swedish Corporate Bond Market and Bondholder Rights



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Foreword

This report provides a detailed account of the Swedish corporate bond market. Based on original data, it offers an overview of how the market has developed in the past two decades. In particular, it documents the changes since the 2008 financial crisis, explores the increasingly important role of real estate companies in the local bond market and features a case study of the impact of the COVID-19 pandemic on the market. It also offers a comparison of the Swedish market with selected peer countries, both in Europe and elsewhere, in terms of market structure and relevant regulation.

This report has been prepared by the OECD in co-operation with Swedish scholars Dr. Jens Andreasson and Dr. Erik Lidman, and the Swedish Corporate Governance Institute. It contributes to a project on ***Principles for a Regulation of the Swedish Corporate Bond Markets*** which is financed by the Nasdaq Nordic Foundation.



The report is part of the OECD Capital Market Series, which informs policy discussions on how capital markets can serve their important role of channelling financial resources from households to productive investments in the real economy.

Detailed descriptions of the data sources, selected indicators and the methodology for data collection and analysis are provided in the Annex. The report also draws from fact-finding missions conducted in the spring of 2022, including consultations with representatives of both government institutions and high-level market participants, including the Swedish Riksbank, the Swedish Financial Supervisory Authority (*Finansinspektionen*), Nasdaq Stockholm, leading legal and financial advisors, banks, issuers and trustees. The report has benefitted greatly from these consultations and the team gratefully acknowledges their important contributions.

The report was prepared by a team composed of Carl Magnus Magnusson and Alejandra Medina, led by Serdar Çelik, Acting Head of the Corporate Governance and Corporate Finance Division within the OECD Directorate for Financial and Enterprise Affairs, Erik Lidman, Associate professor at the Universities of Stockholm and Gothenburg, and Jens Andreasson, Associate Professor at Gothenburg University. The authors are grateful for the research assistance of Keigo Ando during his internship at the OECD.

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Acronyms and abbreviations

APA	Approved Publication Arrangement
ATS	alternative trading system
CTP	consolidated tape provider
DC	domestic currency
ECB	European Central Bank
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
EU	European Union
FI	<i>Finansinspektionen</i> (Swedish FSA)
FIBEN	<i>Fichier bancaire des entreprises</i>
FINRA	Financial Industry Regulatory Authority (US)
FSA	Financial Supervisory Authority
FSB	Financial Stability Board
FX	foreign currency
ICMA	International Capital Market Association
IG	investment grade
IPO	initial public offering
ISIN	International Securities Identification Number
SPO	secondary public offering
IIROC	Investment Industry Regulatory Association of Canada
IOSCO	International Organization of Securities Commissions
JSDA	Japan Securities Dealers Association
KOIFA	Korea Financial Investment Association
MIFID II	Markets in Financial Instruments Directive II
MIFIR	Markets in Financial Instruments Regulation
MTF	multilateral trading facility
NASD	National Association of Securities Dealers
OECD	Organisation for Economic Co-operation and Development
OTC	over the counter
OTF	organised trading facility
SEC	US Securities and Exchange Commission
SI	systematic internaliser
TRACE	Trade Reporting and Compliance Engine
UK	United Kingdom
US	United States

Executive summary

The Swedish corporate bond market for non-financial companies is relatively young and has changed significantly over the past two decades. While the dominance of banks in credit provision has decreased, Swedish corporations remain highly dependent on bank financing in an international context. Until 2008, the corporate bond market did not expand much and was dominated by a small number of large and established companies within a limited number of industries. However, this began to change after the 2008 financial crisis as the market started growing, notably in response to stricter international banking regulation and contractions in bank lending for certain market segments. The average annual amount of non-financial corporate bonds issued in the period from 2009 to 2021 was more than twice that of the pre-crisis period from 2000 to 2008. **By the end of 2021, the total outstanding amount of non-financial corporate bonds was USD 77 billion, more than double the amount at the end of 2008.** In parallel, the general **credit quality has also decreased**, ever since 2000 but most notably since 2009.

In the past decade and a half, the share of issuance made up by new issuers has significantly increased, with a simultaneous decrease in the median issue size. These developments are indicative of an **increased accessibility and expansion in the use of corporate bond markets among smaller Swedish companies**. More recently, real estate companies have also become significant players on the Swedish corporate bond market, representing as much as 48% of total issuance and 39% of outstanding amounts in 2021.

As more companies gain access to the market, corporate bonds are increasingly being issued in the domestic currency. **The share of bonds denominated in the Swedish Krona has averaged 45% by amount in the last ten years, compared to negligible levels in the first decade of the 2000s.** However, as many Swedish companies are active internationally and have revenues in several different currencies, the issuance of corporate bonds denominated in foreign currencies, most notably in Euros but also in US dollars, remains significant. This is also reflected in the investor landscape – **foreign investors are the largest owners of Swedish non-financial corporate bonds**, holding 60% of total outstanding amounts at the end of 2020. An important recent ownership trend is the **growth of investment funds as holders of corporate bonds**. At the end of 2020, they represented 43% of domestic ownership, compared to less than 5% in 2008. Direct retail participation in bond markets is limited. In contrast to what can be observed in many other markets, pension funds and insurance companies are not significant direct investors in non-financial corporate bonds in Sweden.

In spite of significant improvements in the past decade, **the Swedish corporate bond market still faces challenges that must be addressed so that the market can fulfil its role of providing companies with resilient, flexible financing**. The COVID-19 crisis clearly showed its inability to do so, as large segments of the market lost access to financing, and several investment funds had to temporarily close due to a lack of reliability in pricing. Contrary to other, more developed markets, in Sweden the corporate bond market is still **pro-cyclical**, limiting the access to market-based financing in times of crisis to a small number of large and established companies. One challenge is to **reduce the current high share of unrated bonds**, which prevents many investors that use credit ratings (sometimes as a binding requirement) in their asset allocation process from investing. It also limits the ability to gauge the overall

risk of the market. Other challenges are the very low levels of liquidity and **lack of pricing transparency**. The applicable regulations with respect to pre- and post-trade transparency, which are provided in MiFIR/D II, allow for a large number of exceptions which has led to a decrease in transparency on the Swedish bond market.

Considering the findings in this study, the following issues may merit further research and regulatory attention:

1. ***The growing share of investment fund ownership.*** The share of outstanding bonds held by investment funds is higher than in peer countries. The domestic share of 43% is in addition to foreign ownership, which makes up 60% of total holdings, a substantial share of which is also likely to be investment funds. On the one hand, that has offered increased access to the corporate bond market, in particular for retail investors, and possibly increased access to market-based debt financing for companies. On the other, it could potentially adversely impact the stability of the market in the absence of proper liquidity management by funds, and clear regulatory guidance in this respect. Open-ended bond funds offer investors cash-like liquidity based on underlying portfolios that are composed of less liquid instruments. In times of crisis, as investors seek to redeem large amounts simultaneously, this can exacerbate downward price pressures on an already liquidity-constrained market. Investor heterogeneity could possibly be promoted through measures such as stronger bondholder protection, transparency, and material requirements, for instance including more developed rules on equal treatment of bondholders and specific regulation on the role of bond trustees, which may increase market trust among a broader group of investors.
2. ***Industry concentration and the exposure of real estate companies.*** Real estate companies have gone from representing a negligible share of the Swedish bond market to becoming very substantial, accounting for 48% of total issuance and 39% of outstanding amounts in 2021. The majority of bond market activity in the real estate sector is made up by a relatively small number of companies, and the industry is more concentrated than the broader market. That could potentially lead to market pressures, in particular in an environment of tightening monetary conditions and downward price pressure on real estate, i.e. the underlying asset.
3. ***The large share of unrated corporate bonds.*** Sweden has a relatively high share of unrated bonds. By having a credit rating, issuers build a reputation of being transparent, credible and reliable with respect to investors. It also expands the range of potential buyers, since many institutional investors and indices allocate capital based on credit ratings. Credit ratings also enable investors to better estimate and quantify the risk associated with a security. In addition, it may help regulators gauge overall market risk. Credit ratings from the large international rating agencies are costly, but there are alternatives of national low-cost systems for credit ratings, as exemplified in this report.
4. ***Lack of information about the security and the issuer available to potential investors during the issuance and placement process.*** Due to the use of exceptions in the EU prospectus regulation as well as local market practices, the amount of information available to investors in Sweden during the issuance process is limited. Improvements in this respect could be beneficial to attract a wider range of investors, for example through facilitating the comparison of the terms offered in different bond contracts.
5. ***Pricing transparency in the corporate bond market.*** Pricing transparency in the Swedish bond market is low under the applicable EU regulation. Despite self-regulatory efforts in Sweden to address this, transparency in pricing securities remains limited, hampering the price discovery process.

1 The Swedish corporate bond market landscape

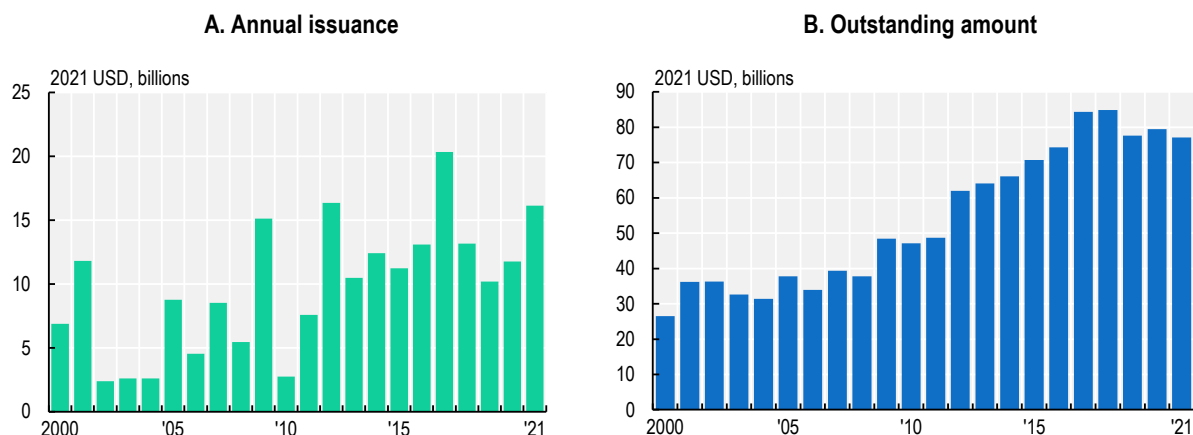
This chapter provides an overview of the Swedish non-financial corporate bond market with respect to size, risk profile and issuer characteristics. It explores the nature of the investors in the market and describes some of the most common covenants used by Swedish corporate issuers. The chapter also includes a description of secondary market activity and a case study of the COVID-19 pandemic's effect on the Swedish non-financial corporate bond market. The last section offers an overview of the real estate sector's use of corporate bond markets.

1.1. Market size

The Swedish corporate bond market for non-financial companies is relatively young and has changed significantly over the past two decades. Between 2000 and 2008, it did not grow substantially and was to a large extent the territory of large, established companies within a limited number of industries. However, in the years after the 2008 financial crisis, notably as access to bank lending diminished, the market began growing in earnest. Between 2000 and 2008 issuance by non-financial companies averaged USD 6.0 billion annually, a number which more than doubled to USD 12.3 billion in the period between 2009-21 (Figure 1.1, Panel A). As a comparison, the average annual amounts of total equity (IPOs and SPOs) issued by non-financial companies during these periods were USD 6.6 billion and USD 8.3 billion, respectively. In other words, average annual bond issuance has surpassed annual average equity issuance. This is notable given the prevalence of equity financing in Sweden, which had the highest equity market capitalisation to GDP ratio and the highest net stock market listing in the EU in the period from 2010 to 2018 (Oxera, 2020_[1]). However, the size difference between corporate bond and equity markets remains much smaller in Sweden than in larger markets. For example, while average annual bond issuance has been 1.5 times larger than total average annual equity issuance in Sweden since 2009, the equivalent

figure in the United States is 5.5 times. Nevertheless, the fact that bond issuances has overtaken equity in size is significant and illustrates the pace at which the Swedish market is growing. At the end of 2021, the total amount of outstanding non-financial corporate bonds was USD 77 billion, more than twice the amount in 2008 (Figure 1.1, Panel B).

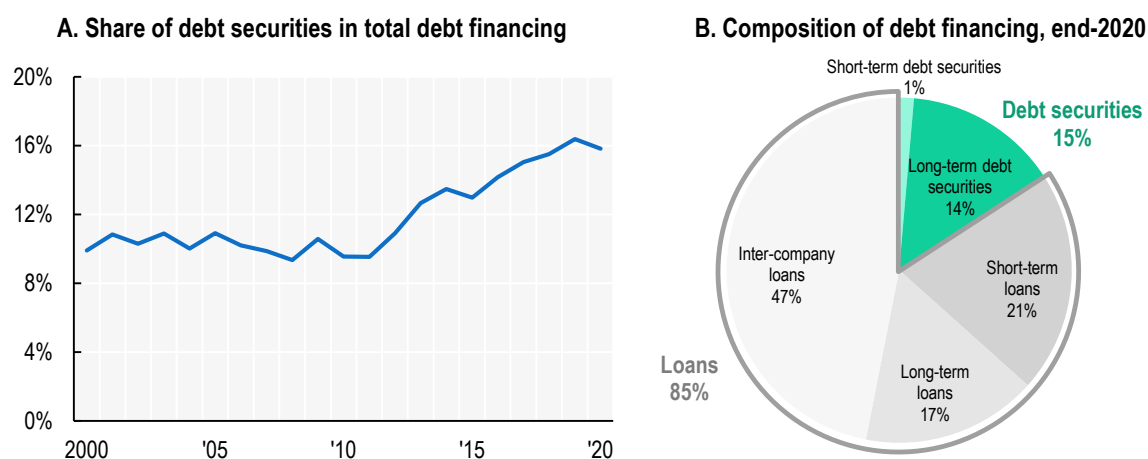
Figure 1.1. The size of the Swedish non-financial corporate bond market



Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

Debt securities, notably corporate bonds, have also increased as a share of companies' total debt financing, meaning market-based debt financing has increased faster than bank loans. After having remained remarkably stable between 9% and 11% from 2000 to 2012, the share of debt securities in total debt financing had grown to 16% in 2020, the vast majority of which is made up by long-term securities (Figure 1.2, Panel A). This figure is slightly higher than in the Euro Area, but lower than other parts of the world where market-based financing is more developed (see further discussion under Chapter 3). Sweden remains a largely bank-dependent economy, with loans representing 85% of non-financial companies' aggregate debt financing. Forty-seven percent of total debt financing is made up by inter-company loans, with the remaining share split between short-term loans (21%) and long-term loans (17%) (Figure 1.2, Panel B).¹

Figure 1.2. Swedish non-financial companies' use of debt securities and bank loans



Note: Panel A shows the share of debt securities (long- and short-term) in total debt financing (sum of total loans and total debt securities) for non-financial companies. Securities with original maturities below one year are classified as short-term.

Source: Swedish Financial Accounts from Statistics Sweden (SCB).

1.2. Risk profile of the corporate bond market

Looking at the risk profile of the Swedish corporate bond market reveals several notable trends. Firstly, as seen in Panel A of Figure 1.3, the credit quality of Swedish bond issuances has been decreasing, both since 2000 but more notably since 2009 when the market began growing substantially. For bonds issued in 2021, the average value-weighted rating was just slightly above BBB-, the lowest investment grade rating. It has only ever been lower in 2004 and 2016. This structural decline in credit quality follows a similar trend globally, as is clear from the figure. To an extent, this is driven by investors trading off credit protection for higher yields in the general low-yield environment that has prevailed following the extensive expansionary monetary policies conducted by a number of central banks across the world since the 2008 financial crisis, and more recently in response to the euro and COVID-19 crises. Notably, the Swedish Riksbank was the first central bank to bring its main repurchase rate into negative territory in early 2015.

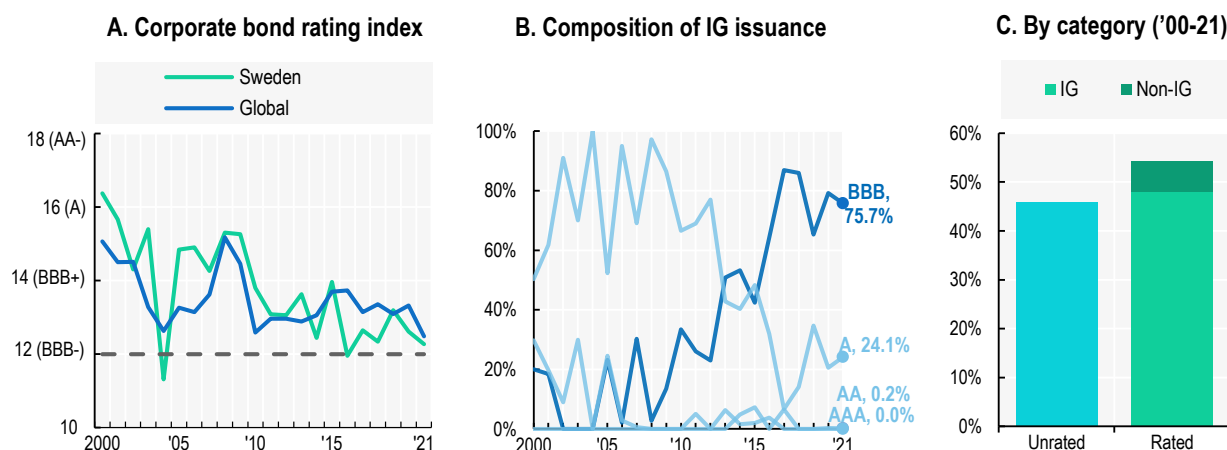
Another notable development is the prevalence of BBB rated bonds (again, the lowest investment grade category) in the composition of investment grade issuance. In 2021, BBB rated bonds made up almost 76% of total issuance, up from an average of less than 11% from 2000-08 (Figure 1.3, Panel B). By far the largest corresponding decrease has taken place within the A grade category. This increase in the weight of the lowest credit quality category within investment grade issuance is also in line with global trends, although the Swedish share of BBB rated bonds is significantly higher than the global figure.

Importantly, a substantial share of Swedish bond issuances do not have credit ratings. Of the total number of issues between 2000 and 2021, 46% were unrated. Of the rated bonds, 83% were investment grade (Figure 1.3, Panel C). It bears mentioning that when looking at amounts rather than number of bonds, the share of unrated bonds is significantly lower at 19%. This is expected, since larger issuances typically target a broader, often international investor base that require the bonds they invest in to have credit ratings. According to the Swedish Riksbank (2014^[2]), in 2014 about two-thirds of the unrated bonds issued in Sweden were considered investment grade by the banks. However, this practice of banks supplying so-called “shadow ratings” has since been discontinued, after ESMA ruled it constituted a breach of the Credit Rating Agencies Regulation (CRAR) and consequently fined five major Nordic banks (ESMA, 2018^[3]). Having a credit rating from one of the main rating agencies is often a precondition for accessing capital from many types of institutional investors, who use credit ratings as an aggregate risk management tool for large portfolios and do not necessarily follow business models that allow for detailed due diligence of individual bonds. Certain institutional investors, notably pension funds, are also constrained by regulation to holding bonds over a certain rating.

One reason for the sizeable share of unrated bonds in Sweden is likely the fact that obtaining credit ratings from the large, international rating agencies carries a significant cost that may be unaffordable to smaller issuers. For example, S&P Global Ratings has disclosed that credit ratings for most transactions involve a fee of up to 7.1 basis points of the total transaction value, with a floor of USD 110 000, effectively meaning that any issue below USD 155 million will carry a cost above 7.1 basis points.² For a bond issue of USD 60 million – the median size in Sweden in 2021 – the cost would be 18.3 basis points. In addition, all else equal, a larger company size is associated with a higher rating, possibly further discouraging smaller issuers from obtaining ratings. Scale (e.g. total sales) is one of the five factors Moody’s uses to assign its ratings (OECD, 2021^[4]).

Recognising the existence of these dynamics favouring larger issuers as well as the need for an active market for research on credit worthiness of smaller companies, some countries have implemented systems where ratings are provided domestically at reduced cost. This is done with the understanding that smaller size issues are typically not intended for large, international investors who would require a rating from (at least) one of the established agencies, but that it is beneficial to have easily accessible information that can help investors gauge default risks. For example, in France the *Banque de France* provides a form of credit score for individual firms for a fee through the FIBEN system (OECD, 2020^[6]).

Figure 1.3. Credit ratings of Swedish non-financial issuances



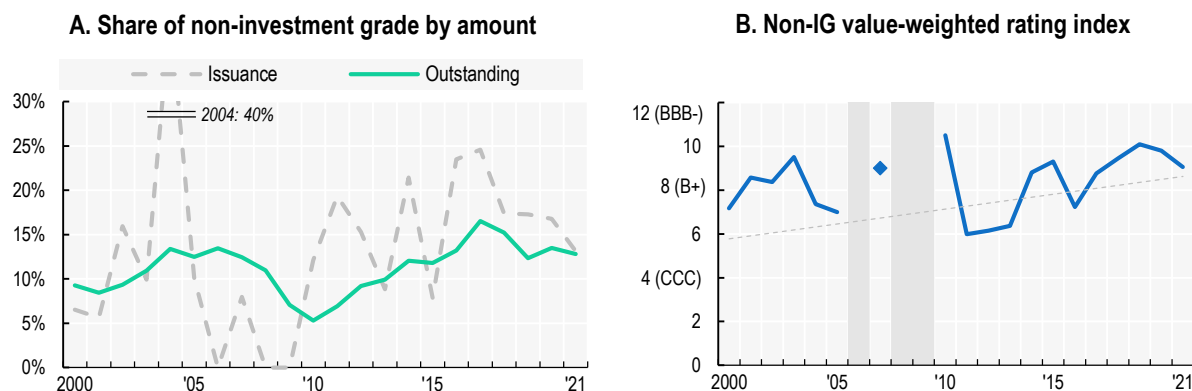
Note: In Panel C, issuance is by number of bonds.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

At the end of 2021, the non-investment grade (“high yield”) segment of the Swedish non-financial bond market made up 12.8% of total outstanding amounts, including unrated bonds (in terms of the number of issuers, 4.1% were classified as non-investment grade in 2021). This share has increased somewhat as the market has grown. The lowest share was recorded in 2010 at 5.3%, after three years without non-investment grade issuance in 2006, 2008 and 2009. It peaked at 16.5% in 2017 (Figure 1.4, Panel A). This is slightly below the share of outstanding non-investment grade bonds globally, which is 18.3%. One possible explanation as to why non-investment grade markets are less prevalent in certain jurisdictions relates to their insolvency systems. If insolvency/bankruptcy regimes are inefficient, financially distressed firms will resort to out-of-court restructuring processes, where banks typically have greater bargaining power due to, among other reasons, their size and the fact that they are concentrated lenders. This, in turn, leads bond investors to require higher credit spreads for companies that are more likely to find themselves in financial distress (i.e. non-investment grade firms) by more than would be the case under an efficiently functioning bankruptcy regime, hampering the development of a market for such bonds (Becker and Josephson, 2016^[7]). Indeed, looking at a number of indicators developed by the OECD to measure the efficiency of an insolvency regime, Sweden ranks 28th among 33 countries, notably because of the system’s high personal costs of failure to entrepreneurs and a lack of prevention and streamlining (Adalet McGowan and Andrews, 2018^[8]).

While the outstanding share of non-investment grade bonds has been increasing since 2010, this only partially explains the downward trend in the rating index shown in Panel A of Figure 1.3. This indicates that the main driver of lower ratings is a change in the composition of investment grade issuance, as shown in Panel B of Figure 1.3. Notably, the value-weighted average rating in the non-investment grade category has not been declining (Figure 1.4, Panel B). If anything, it has shown a slight upward trend, although with relatively significant swings over time.

Figure 1.4. The Swedish non-investment grade corporate bond market



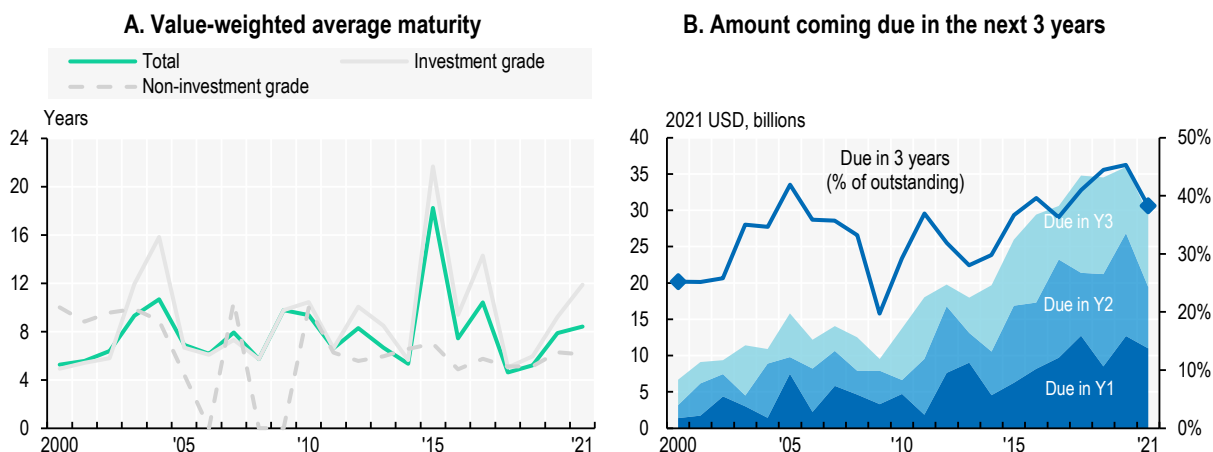
Note: Shaded areas in Panel B represent years with no non-investment grade issuance.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

An important aspect of the risk level of a bond market is the maturity and repayment profile of the outstanding stock of bonds. Aside from a spike in 2015, the value-weighted average maturity of Swedish non-financial corporate bonds has been fluctuating between approximately 6 to 10 years since 2000, with no discernible structural trend either upwards or downwards.³ Since 2018, however, maturities have lengthened somewhat, reaching 8.4 years in 2021. This is slightly lower than the global figure of 9.4 years. Since 2010, Swedish investment grade bonds have on average had 2.7 years longer maturities than non-investment grade bonds (excluding 2015), a difference which is smaller than the global one during the same period (4.2 years) (Figure 1.5, Panel A). Since the ratio between the average maturity of investment grade and non-investment grade bonds in Sweden is similar to the global ratio, it follows that the divergence is driven by generally shorter average maturities in Sweden.

When companies have large amounts of debt coming due within a short time period, they may be exposed to refinancing risk, especially in case of general financial distress and tighter credit conditions. This can pose a risk to a market as a whole if a large share of total outstanding bonds is coming due, amplifying existing shocks and affecting the real economy. Panel B of Figure 1.5 illustrates the debt coming due within the next three years and its share of the total outstanding debt. While the amount due in the next three years has increased substantially after the 2008 financial crisis, more than doubling since 2009, it has not increased significantly as a share of total outstanding debt. In 2021, the share of debt coming due in the next three years (38%) was very similar to that ten years earlier (37%). This is in line with the (relatively) constant maturities shown in Panel A. It is worth noting that the share was at its lowest in 2009 (at 20%), when crisis-induced risk aversion likely drove investors towards safer issuers who were able to issue at longer maturities. The Swedish non-investment grade market was effectively frozen in both 2008 and 2009, with zero issuance in both years.

Figure 1.5. Maturity and repayment profile of Swedish non-financial issuances

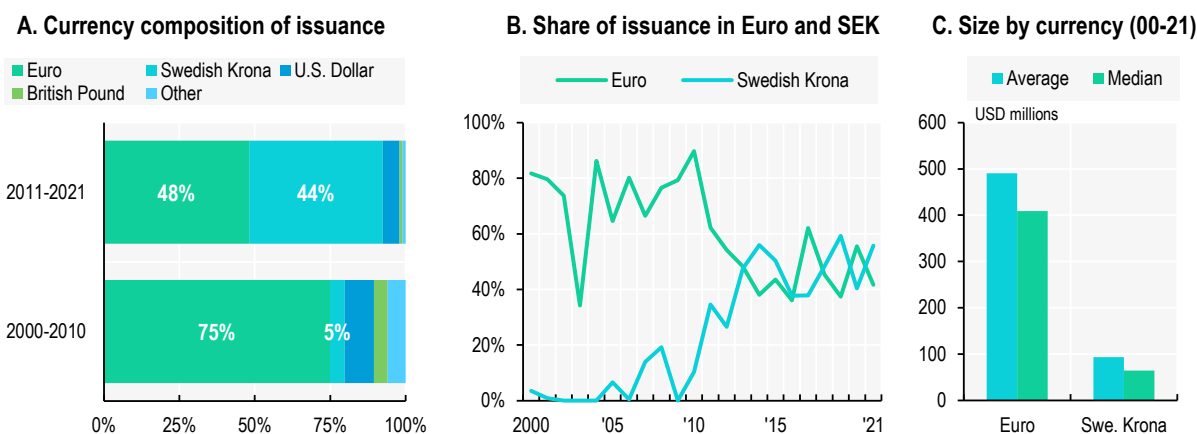


Note: Includes unrated bonds.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

Between 2000 and 2021, bonds denominated in Euros made up 57% of total Swedish non-financial issuance. Along with the Swedish Krona (SEK) at 31%, these two currencies made up 88% of total amounts. The majority of the remainder was issued in US dollars. However, the currency composition of Swedish bonds has changed substantially in the last decade (Figure 1.6, Panel A). Up until 2010, bond issues in SEK were minimal (with the exception of 2007 and 2008) and the market was dominated by euro denominated bonds.⁴ However, as the market grew and became accessible to a larger number of companies around 2010, the share of domestic currency bonds increased sharply. Between 2010 and 2021, the share of SEK denominated bonds in total issuance averaged 42%, compared to 4% in the period from 2000 to 2009. In 2021, the share was 56% (Figure 1.6, Panel B). Panel C shows the average and median size of bonds issued in the two different currencies, clearly illustrating how bonds (and issuers) issued to the international markets (proxied by euro denominated issuance) and the domestic ones (in SEK) differ in character. The average (median) size of Swedish corporate bonds issued in Euros between 2000 and 2021 was USD 491 (409) million, more than five times the amount in SEK, which was USD 93 (64) million. With this in mind, the increasing share of SEK issuance shown in Panel B is indicative of the growing accessibility of the Swedish bond market for smaller domestic companies.

Figure 1.6. Currency composition of Swedish non-financial bond issuance



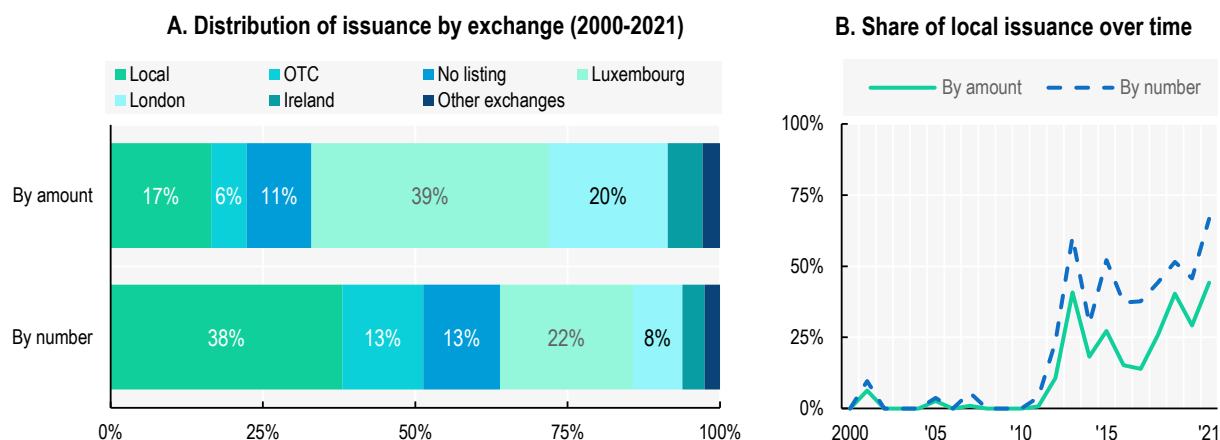
Note: Panels A and B both show shares of the total amount issued.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

Data on the exchanges used for listings are consistent with this development. Whereas international exchanges are dominant when looking at total issuance amounts between 2000 to 2021, local exchanges is the single largest category when looking at number of issues. Specifically, Luxembourg is the most important foreign exchange, listing 39% of all bonds issued over the last two decades by amount, followed by London at 20%. Local exchanges represent 17%. A relatively sizeable share of bonds are classified as unlisted (11%) or over-the-counter (6%). Looking instead at the number of issues, 38% are listed on local exchanges (Figure 1.7, Panel A). It should be noted that there are certain differences between investment grade and high-yield bonds with respect to the most common exchanges. For example, investment grade bonds are listed on the Luxembourg exchange to much greater extent than non-investment grade ones (by amount from 2000 to 2021, 29% versus 3% respectively), and non-investment grade bonds are more commonly unlisted than investment grade ones (15% versus 8% by amount from 2000 to 2021).

Also in line with the growing prevalence of domestic currency denominated bonds shown above, Panel B of Figure 1.7 shows how the share of local exchange issuance has increased over time. Similar to the development in SEK denominated issuance, the share of locally listed bonds was effectively zero up until 2011, after which it has grown substantially, reaching 44% in 2021. It bears mentioning that while most Swedish corporate bonds are listed on an exchange, all trading takes place OTC. The local exchange does not have a mechanism for secondary market trading in corporate bonds. Refer to Section 3.3 for an overview of alternative models.

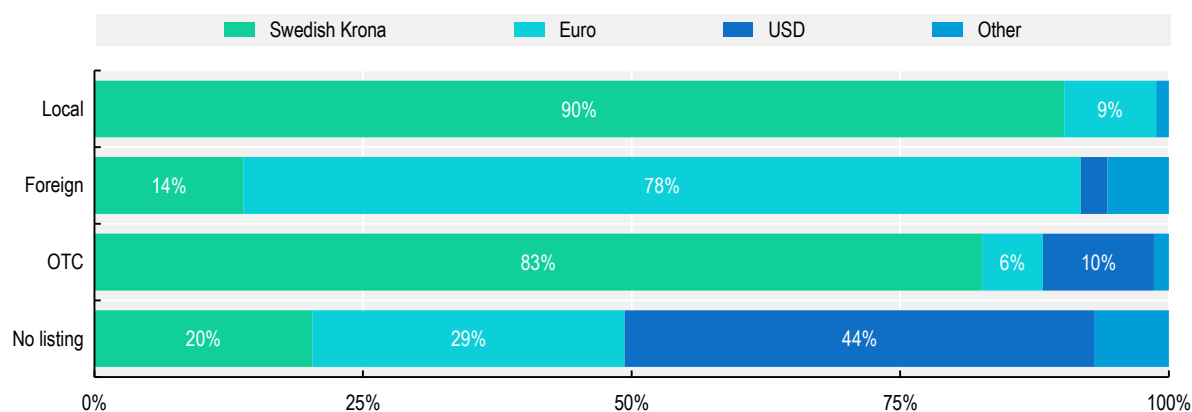
Figure 1.7. Issuance by exchange



Note: Exchanges included in the Local category are: Stockholm/Nasdaq Nordic and Nordic MTF.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

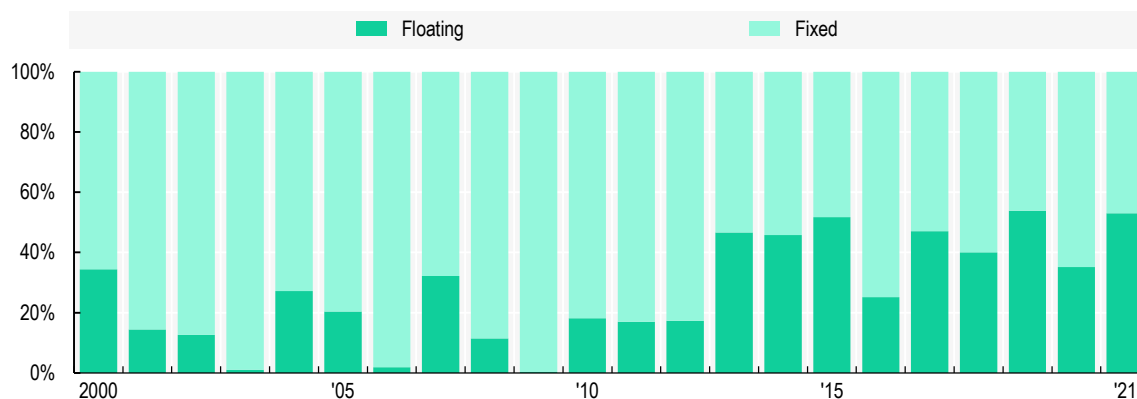
Looking at exchanges and currency denomination in conjunction shows more clearly the types of bonds that are issued in different markets. Figure 1.8 shows the currency composition of issuance by exchange, which differs significantly. On local exchanges, 90% of all bonds issued (by amount) between 2000 and 2021 were denominated in SEK, with Euro issuances making up the clear majority of the remaining 10%. The domestic currency share is also substantial for bonds classified as OTC, at 83%. Contrarily, on foreign exchanges euro denominated bonds represented as much as 78% of issuance, and the Swedish krona no more than 10%. Interestingly, for bonds without listings the US dollar is the single largest currency, representing 44% of issuance.⁵

Figure 1.8. Currency distribution of issuance by exchange, 2000-21

Note: Exchanges included in the Local category are: Stockholm/Nasdaq Nordic and Nordic MTF.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

The share of floating-rate bonds in total amounts issued in Sweden has increased significantly in the past decade, from 18% in 2010 to 53% in 2021 (Figure 1.9). Issuing floating rate bonds can help increase investor demand, and thus liquidity, for a security since it offers holders positive exposure to higher interest rates if broader market conditions change, thus limiting to an extent the risk of being locked into lower than currently prevailing rates. However, from an issuer perspective it also increases the exposure to rate hikes which would lead to increased debt servicing costs. This can also have financial stability implications for a market more broadly if the share of floating rate debt is high. If cost levels become unsustainable for a large enough number of companies, this may in turn lead to widespread defaults and further pressure on capital markets.

Figure 1.9. Split between fixed and floating rate bonds over time

Note: The figure shows the shares of fixed and floating rate bonds by amount issued.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex A for details.

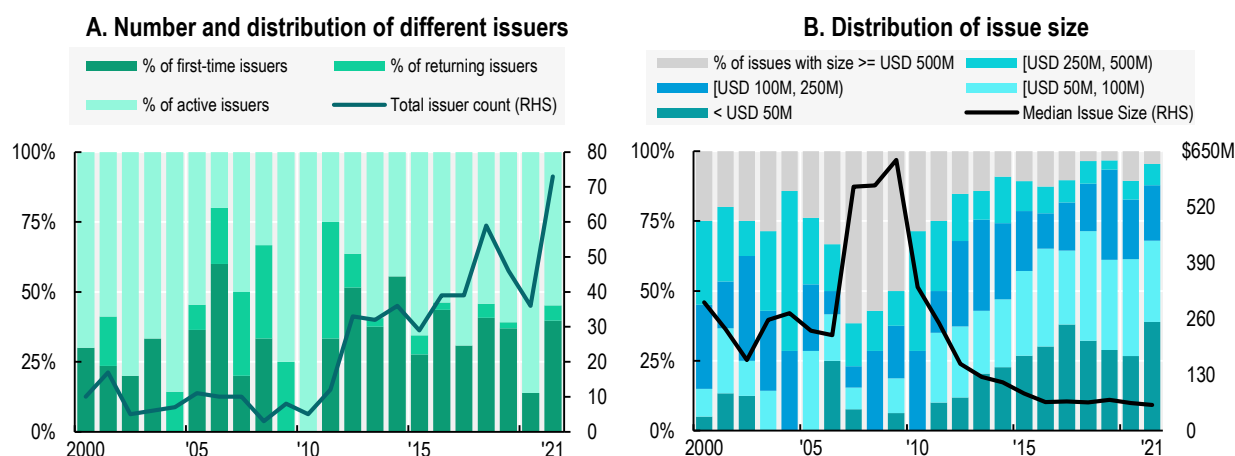
1.3. Issuer characteristics

In addition to changes to the market at the macro level, when trying to understand how the market has developed over time it is also useful to look at changes at the issuer level. Figure 1.10 below provides an overview of the composition of issuers on the Swedish bond market during the past 20 years. Panel A classifies issuers into three groups depending on their previous experience with bond markets: first-time

issuers are issuers that have never issued a bond before; returning issuers has previously issued bonds, but more than five years ago; and active issuers have issued at least one bond within the last five years. As for many of the data shown thus far, there is a clear change in trend after the 2008 financial crisis, and in particular after 2010. Between 2000 and 2010, the average share of active issuers was 63% with first time issuers representing 23%. The average number of issuers annually was only eight. In sharp contrast, the share of first-time issuers averaged 37% between 2011 and 2021, with an average of 39 issuers annually. In 2020, the number of issuers dropped sharply and the market was dominated by active issuers, indicating that in crisis times the Swedish bond market was not a fully resilient source of funding for many companies (see further discussion under Section 1.8.1 below). However, 2021 was the year on record with the largest issuer count, with 73 companies issuing bonds.

Panel B shows the corresponding change in the distribution of issue sizes as well as the median issue size over time. Similarly, up until 2009 the market was clearly dominated by large companies. Issues in excess of USD 500 million represented as much as a third of issues between 2000 and 2010. In 2007 it was as high as 62%. The two smaller categories below USD 100 million – likely the most attainable for smaller companies – made up no more than 9% on average during this period. The dominance of large companies was particularly evident during the 2008 financial crisis when only very large and creditworthy Swedish companies had access to this type of market-based financing. This led to a remarkably high median issue size, which peaked at USD 630 million in 2009 – higher than recorded in either Europe or the United States during the same period (OECD, 2021^[4]). This dropped sharply after 2010, reaching USD 60 million in 2021, a decrease of more than 90% compared to roughly a decade earlier. In the same year, issues below USD 100 million made up 68% of total issuance while the largest category (above USD 500 million) only represented 5%. These developments clearly demonstrate an increased accessibility and use of corporate bond markets among smaller Swedish companies.

Figure 1.10. Characteristics of issuers/issues on the Swedish non-financial corporate bond market



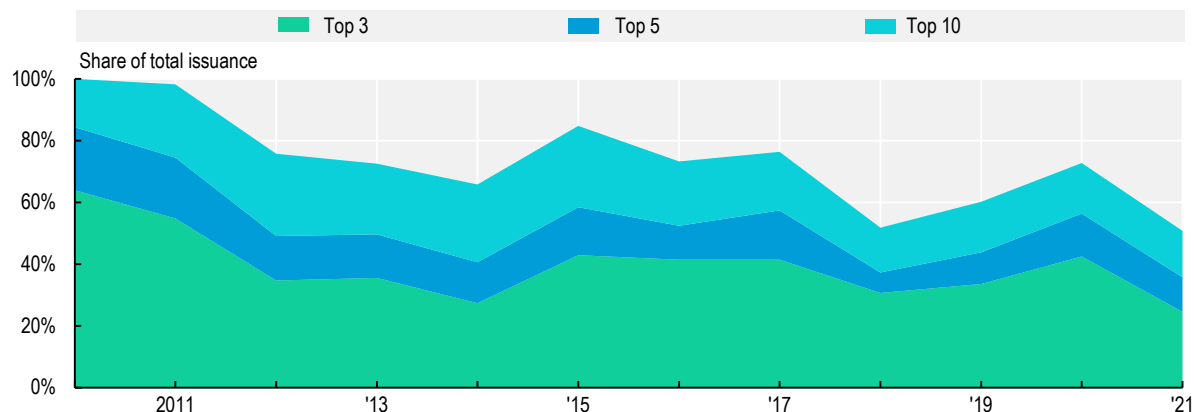
Note: A company is defined as a first-time issuer if its bond issue in a given year is its first issue since the start of our series (January 1980). A “returning issuer” is a company which made its last bond issue more than five years ago. If the company issued bonds in at least one of the past five years, it is defined as an “active issuer”.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

The increase in the number of issuers and general broadening of the market is also reflected in the concentration of issuers. Specifically, Figure 1.11 below shows the share of the top three, five and ten largest issuers in total issuance over time. The share of the ten largest issuers has fallen sharply over the past decade, from 76% in 2012 to 51% in 2021, with the three largest issuers’ share falling from 35% to 25% in the same period. Notably, in 2020, as the COVID-19 crisis hit, market concentration increased to 73%, similar to the levels seen back in 2012. This follows from the sharp decrease in the number of issuers

during the first year of the COVID-19 crisis shown in Figure 1.10 above. Within the investment grade category of the Swedish bond market, in 2020 only one of 132 issues came from a new issuer (Nordic Trustee, 2020^[9]).

Figure 1.11. Top issuers' share in total issuance

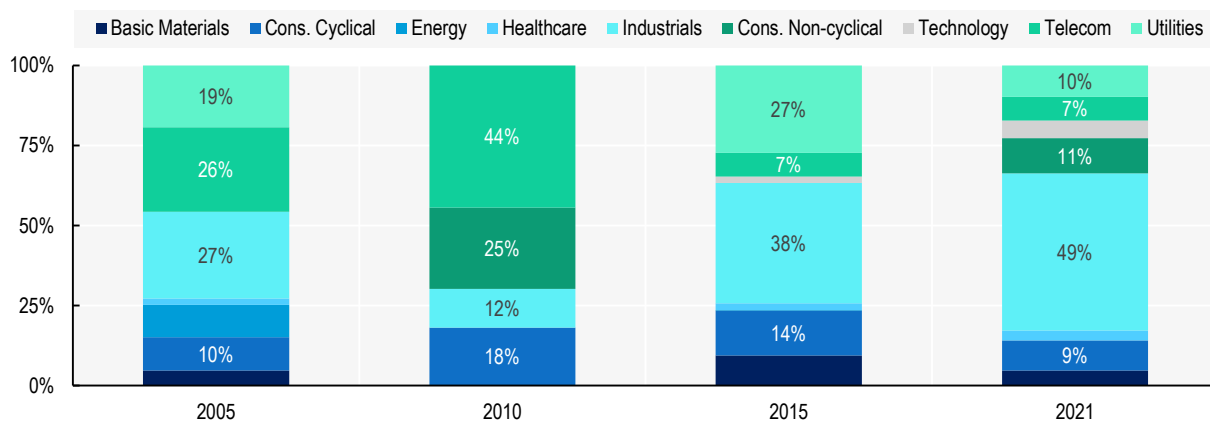


Note: Graph starts from 2011 since the average number of annual issuers prior to that was no more than 8. In the period from 2011 to 2021, the annual average was 39, reaching 73 in 2021.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

As the market has grown, the industry composition of issuance has changed. However, in spite of significant variation between years, certain industries have remained dominant. Notably, industrial companies make up a substantial share of the total amount issued through corporate bonds throughout the analysed period, averaging 27% of annual issuance from 2000 to 2021, and reaching as much as 49% in 2021. Utility and consumer cyclical companies are also large issuers. Telecom companies, representing 7% of issuance in 2021, made up a significant part of issuance in the period from 2007 to 2012, averaging 29% of total annual issuance (Figure 1.12).

It should be mentioned that bonds issued by real estate companies are not included here since the analysis is restricted to non-financial companies and since OECD work on bond markets normally classifies real estate companies as financial companies. However, because of the real estate industry's importance to the Swedish corporate bond market, this report devotes a separate sub-chapter to an analysis including real estate issuers (see Section 1.9). More generally, it bears mentioning that the financial industry represents a significant share of the Swedish bond market, accounting for as much as 77% of total issuance in 2021.

Figure 1.12. Industry composition of the Swedish non-financial bond market

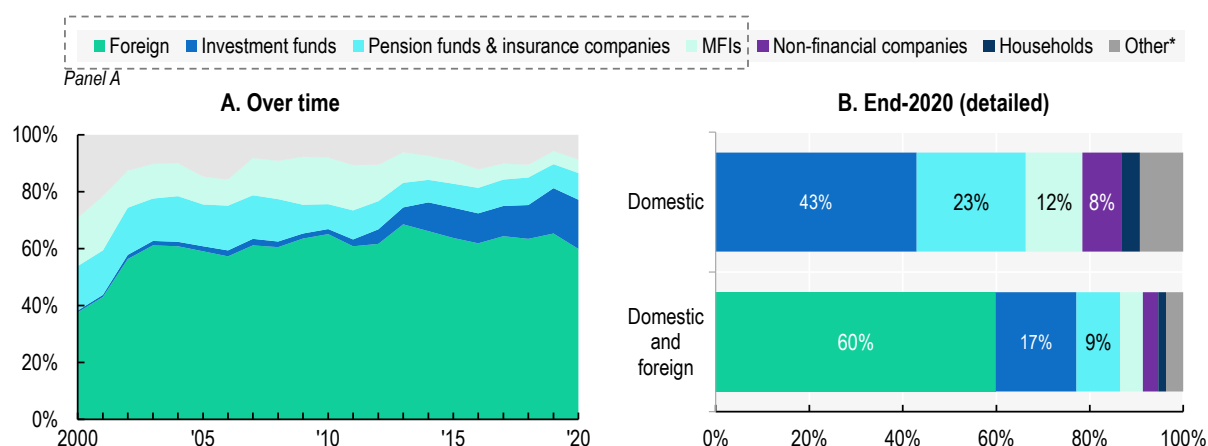
Note: Real estate companies are not considered in the above graph. Please refer to Section 1.9 for an analysis including the real estate industry.
Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

1.4. Corporate bond investors

Foreign investors are the largest owners of Swedish non-financial corporate bonds, holding 60% of total outstanding amounts at the end of 2020. This share has remained quite stable since 2003, when it increased from the lower levels seen in the first three years of the 2000s. The composition of domestic ownership, however, has changed. An important development is the growth of investment funds as owners since about 2012. In 2011, they held about 2% of total outstanding amounts, a figure that had grown to 17% by 2020 (Figure 1.13, Panel A). When counting only domestic ownership, they represent 43%, compared to 6% in 2011 (Figure 1.13, Panel B). As noted by Becker et al. (2020_[10]), the aggregate statistics do not specify the composition of the foreign investor category. However, it is likely to include a substantial amount of investment funds. It is also notable that the share of foreign ownership decreased rather sharply in 2020 as markets globally were clouded by an uncertain outlook, falling from 65% at the end of 2019 to 60% in 2020 (representing a net outflow of over SEK 38 billion).

Monetary financial institutions (e.g. banks, money market funds and other credit institutions) represent 12% of domestic ownership, a decrease from 46% in 2009. This is significant and reflects the overhaul of the regulatory landscape, in particular for banks, after the 2008 financial crisis, notably the new Basel accords. These developments have made banks less willing to hold corporate bonds, reducing proprietary inventories which has led to a decrease in dealer intermediation (FSB, 2021_[11]). Non-financial companies themselves represent 8% of domestic ownership of non-financial bonds. While direct retail (household) participation in bond markets is very low, retail investors are still exposed to the market through e.g. investment and pension funds. According to several market participants, retail investors represent a substantial share of investment fund ownership.

Figure 1.13. Ownership structure of outstanding Swedish non-financial bonds



Note: In Panel B, the “Other” category includes: the Swedish central bank, public administration, households and other financial intermediaries (original classification in raw data). In Panel A, the “Other” category includes all of these plus those shown in Panel B but not in Panel A (non-financial companies and households). Data refer only to corporate bonds (not short-term securities). All values are as of year-end.

Source: Financial Accounts from Statistics Sweden (SCB).

1.5. Ownership structure of selected Swedish corporate bonds

With the aim of presenting more detailed information on the owners of Swedish non-financial corporate bonds, to gauge the level of ownership data available at the bond-level, and to distinguish who the foreign investors are, the following subsection looks at a sample of 100 of the largest bonds in Sweden. The size of bonds included in the analysis ranges from about USD 100 million to over USD 1 billion, for a sum of around USD 40 billion, representing 52% of total outstanding amounts as of 2021. As part of this analysis, over 300 bonds were reviewed, reflecting the scarce availability of information on the ownership records of individual corporate bonds. Indeed, the available ownership information for the sample of bonds included in the analysis is far from fully comprehensive. Only eight bonds have ownership data covering over 70% of the outstanding amount, and for almost half the coverage is below 20%.

Table 1.1. Ownership coverage, 100 largest outstanding Swedish non-financial corporate bonds

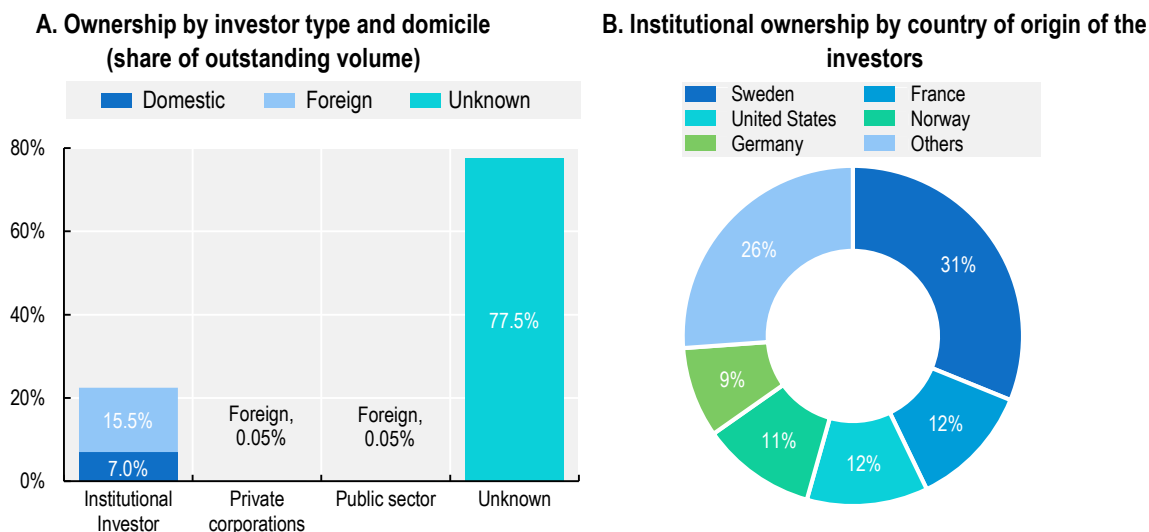
Ownership coverage	Number of bonds
Over 70%	8
[50%, 70%]	13
[20%, 50%]	33
Less than 20%	46
Total number of bonds	100

Source: Bloomberg, Refinitiv.

Panel A of Figure 1.14 shows that institutional investors own 22.5% of the total outstanding amount of bonds, while private corporations and the public sector own below 1%. The lack of publicly available information is evident from the fact that the owners of around 78% of the total outstanding amount are not reported. When classifying owners by domestic and foreign, the share of domestic institutional investors in total ownership is 7.0% and 15.5%, respectively, indicating that foreign institutional investors hold more than twice as much as their domestic counterparts (69% and 31% of total institutional investor ownership,

respectively). Out of the USD 8.9 billion in the hands of institutional investors, 31% is made up by to Swedish investors, 12% by French investors and another 12% by US investors (Panel B of Figure 1.14).

Figure 1.14. Distribution of ownership by investor category

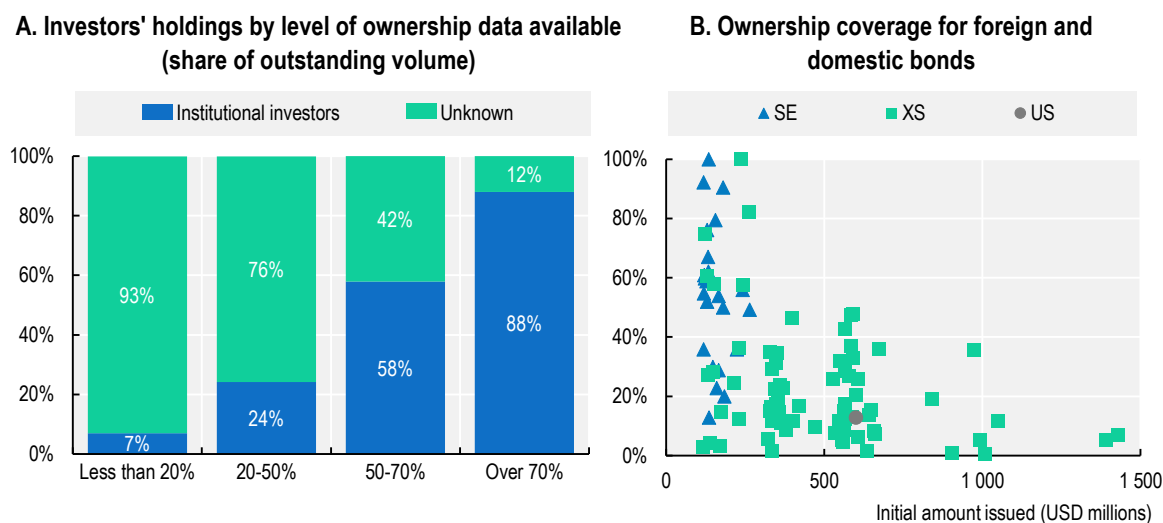


Source: Bloomberg, Refinitiv.

To gauge whether ownership patterns differ depending on data availability, Panel A of Figure 1.15 shows the ownership composition by investor category. The information is heavily skewed towards institutional investors, which is to be expected since they are normally required to disclose their portfolio composition whereas other investors are not. As seen in the figure, the higher the level of available information, the higher the share of institutional investor ownership recorded. For bonds where ownership data are available for less than 20% of the outstanding amount, institutional investors hold 7% of the outstanding amount whereas for bonds with over 70% of ownership information available they hold 88% of the outstanding amount. This suggests that bonds with scarce ownership data have a larger share of non-institutional investors, although this is not possible to say with certainty since the unknown category by definition could include any type of owner, including institutional ones.

The level of ownership information available may also differ between bonds issued in the local market and those issued abroad. Corporate bonds with an ISIN starting with SE are issued locally and those starting with XS issued abroad. Panel B of Figure 1.15 plots the initial issuance amount against the ownership coverage of the outstanding amount. It could be expected that larger bonds would be more attractive to institutional investors which, following the logic above, should result in higher available ownership information given that many of these investors are required to disclose their holdings. However, the Swedish data show no such correlation. For bonds issued in the domestic market, there is no evident relationship between the size of the bond and the available ownership information. For bonds issued on foreign markets (ISIN starting with XS), the smaller the initial issuance amount the higher the level of ownership coverage, although it is naturally not possible to draw any causal conclusions from this (possibly spurious) correlation. Bonds issued on foreign markets are generally larger than domestic ones.

Figure 1.15. Ownership data coverage

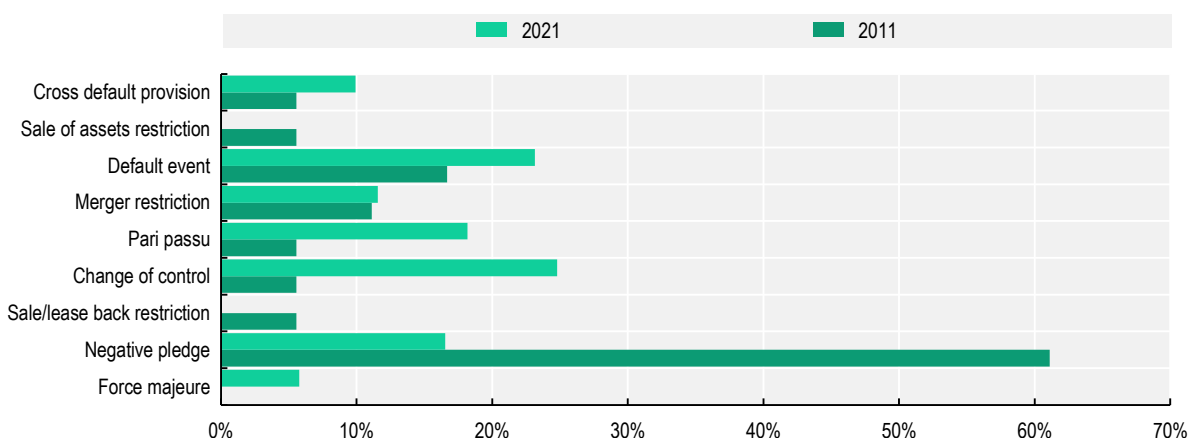


Source: Bloomberg, Refinitiv.

1.6. Covenant protection

Covenants are constraints placed on an issuer and are stipulated in the bond indenture (contract) at the time of issuance. They are bondholders' main corporate governance tool and serve to ensure that issuers do not engage in activities that would reduce creditors' claims or reduce the probability that they are repaid. A breach of covenant results in a so-called technical default (as opposed to a payment default, which occurs when an issuer does not make its interest/principal repayments in line with the contractual agreement). Previous OECD analysis (2021^[4]) has shown a clear decrease in covenant protection over time for non-investment grade bonds issued in the United States. While covenant data are not as accessible nor as accurate for Swedish bonds, Figure 1.16 shows how the prevalence of certain covenants in Swedish bond indentures has changed in the past decade. Certain trends are visible. For example, the prevalence of negative pledge covenants, preventing issuers from using encumbered assets as collateral for new borrowing (which would dilute the existing creditors' protection), has decreased markedly since 2011. Contrarily, change in control covenants – under which a material change in a corporate ownership (definitions may vary) would trigger an obligation to repay the outstanding debt (“acceleration”) – have become much more common. The same is true for *pari passu* covenants, which guarantee that existing creditors are covered by potential additional guarantees the issuer offers to creditors in future borrowing. However, it should be noted that there are substantial differences in the prevalence of different covenants even between consecutive years, making it difficult to determine the exact trends. Many market participants have highlighted the lack of standardised bond terms as a particular challenge on the Swedish corporate bond market, which these differences might be an indication of.

Figure 1.16. Prevalence of different covenants in Swedish non-financial bond indentures



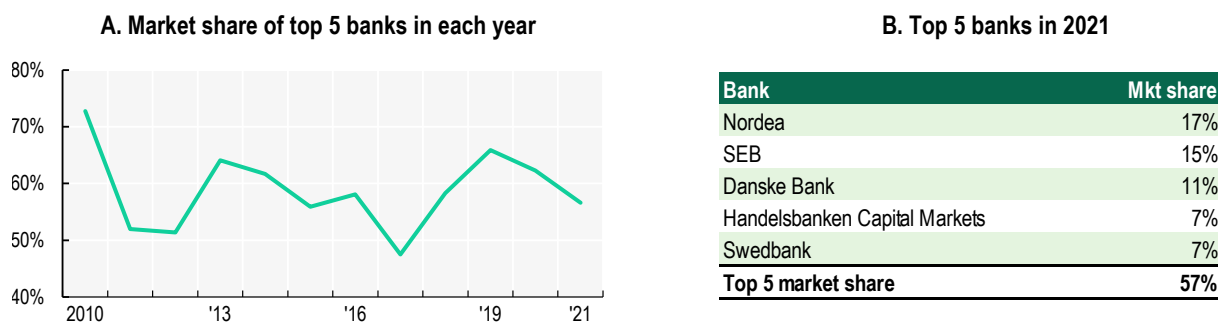
Note: Based on 861 bonds issued by Swedish non-financial companies between 2000 and 2021 with covenant indicators available. Only covenants that are included in at least one bond indenture are displayed.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

1.7. Investment banks and market structure

Investment banks are important players on corporate bond markets, providing underwriting and advisory services. Their tasks are related to e.g. origination, distribution, risk bearing and certification, as well as general advice on pricing, timing of issuance and preparation of relevant documentation. As a general trend, the market concentration of investment banks underwriting non-financial bonds in Sweden has decreased somewhat in the past decade, although the trajectory has been uneven. In 2010, the top five banks had a market share of 73%, which had dropped to 57% in 2021 (Figure 1.17, Panel A). Notably, in 2021 the top five banks by market share were all Swedish or Nordic (Panel B). This is a relatively recent phenomenon. While local banks were always relatively high up in the league tables, up until 2017 the top five always included, and was often dominated by, foreign banks, notably from the United States, the United Kingdom, Germany and France. This increase in the share of local investment banks can also be observed in other regions, notably in a number of Asian jurisdictions (OECD, 2019^[12]).

Figure 1.17. Composition of underwriters of non-financial bonds



Note: Ranked based on gross proceeds. Panel A shows the share of the top five banks in any given year. However, the composition of the top five differs over time, meaning there can be changes in what banks are included.

Source: Refinitiv.

When a bond is issued, the issuer normally assigns an independent trustee to supervise the implementation of the bond indenture (contract). The role of the trustee, typically a bank or a specialised trustee institution, is to ensure the contract is followed, including to review instances of covenant breaches.⁶ In terms of specialised trustee institutions, the Swedish market is dominated by two main players, Nordic Trustee and InterTrust, and by the former in particular. However, specialised trustees are typically only assigned for non-investment grade bonds in Sweden. For the lion's share of investment grade bonds issued in the country, the assigned trustee is a bank. In many markets, the trustee often also plays the role of paying agent, handling collection and disbursements of principal and coupon payments. This is also the case in Nordic markets such as Norway. In Sweden, however, there are no paying agents. Instead, disbursements to bondholders are typically handled by the central securities depository, Euroclear (which only provides settlements in Euros and Swedish krona). It also bears mentioning that the role of the agent is not specifically regulated, which is the case in, for instance, Finland, Denmark and Norway.⁷

1.8. Secondary market liquidity

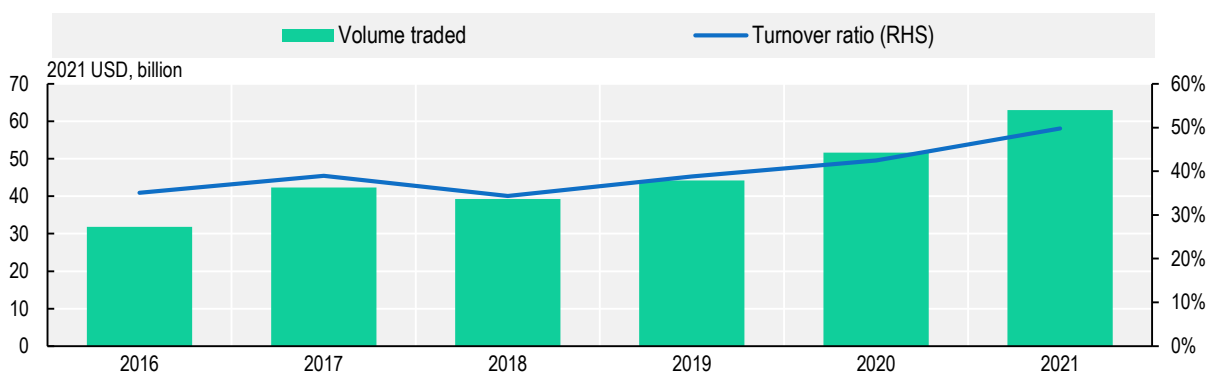
A well-functioning secondary market where investors can trade bonds is an important part of the bond market more broadly, including the primary market. A liquid secondary market ensures that the price-finding mechanism functions properly and that bondholders can exit their investments before maturity as their circumstances change. However, it should be emphasised at the outset that bond markets are very different from equity markets in a number of regards. Firstly, electronic trading, while increasing, makes up a relatively small part of the market. In particular for larger bonds, phone-based negotiations remain dominant (FSB, 2021^[11]). This is contrary to equity markets where electronic trading is ubiquitous. Secondly, liquidity is generally significantly lower in bond markets than in equity markets. Trading is concentrated in the first days after a bond is issued, and then drops significantly. Evidence from the US market suggests that trading is mostly concentrated in the first 90 days after issuance (Mizrach, 2015^[13]). The vast majority of outstanding bonds do not trade on any given day. Even in the United States, where bond markets are large and relatively liquid, and even for the most traded bonds, the number of trades per day is limited (Çelik, Demirtaş and Isaksson, 2015^[14]). For the 1 000 most liquid corporate bonds in the US, only 1% of the issue size traded on a daily basis in 2015, compared to 0.16% for the remaining less-liquid instruments. This means that even for the most liquid corporate bonds, it takes 100 days to trade the full issue size (Mizrach, 2015^[13]).

Partly, this has to do with the illiquid nature of the instrument. Corporate bonds are very different from equities. For many investors, these instruments serve the purpose of long-term liability matching, while offering the prospect of higher returns compared to other fixed income instruments such as government bonds. This is a reason why institutional investors such as insurance companies and pension funds are significant players in fixed income markets globally. Their long-term portfolio structures also help explain why liquidity is much lower in bond markets than in equity markets – the main investor type is not a liquidity supplier but rather soaks up liquidity through buy-and-hold strategies. However, as shown in Figure 1.13 and as will be discussed further below, the Swedish corporate bond market differs somewhat with respect to institutional investor holdings given that the share of pension funds and insurance companies is relatively low. However, low liquidity also has to do with trading mechanisms. As opposed to equities, bonds are typically traded in large increments, so-called “round-lot” trades of USD 1 million (bond trades below USD 100 000 are sometimes known as “odd lots”). For example, in the United States the average bond trade size from 2014-16 was USD 1.2 million (a decrease from USD 2.0 million in 2006-07). This is compared to an estimated USD 3 000 to 5 000 for equities, less than 0.5% of the size of an average bond trade (Bessembinder, Spatt and Venkataraman, 2020^[15]). This is because most bond markets target large institutional investors, who trade in large minimum sizes. The retail component of the market (at least for direct investments) is typically small.

Finally, bond market trading is dominated by dealer intermediation by banks, which therefore play an important part in creating liquidity. However, in many places the growth in bond dealer balance sheets has not matched the growth of the corporate bond market. In addition, partly following more stringent regulation in the wake of the 2008 financial crisis as well as increased risk aversion, banks hold lower inventories of bonds and have reduced their activities as market makers, further reducing liquidity. Riskless principal trading – where the dealer finds both a buyer and a seller before going ahead with a trade – is a more common business model than regular principal trading (FSB, 2021^[11]). In 2014, 95% of secondary market trading in Sweden was made up by trading between banks and their customers (Riksbanken, 2014^[2]).

The annual volume traded on the Swedish market has outpaced the growth of the market more broadly. Figure 1.18 provides an overview of annual amounts traded in the Swedish market and the turnover ratio (measured as annual traded volume as a share of the outstanding amount at the end of the year). Both measures have increased over time. The turnover ratio is similar to that of other European countries. In the European Economic Area, the turnover ratio in 2020 was 46%, compared to 43% in Sweden (ESMA, 2021^[16]).

Figure 1.18. Volume traded in the secondary corporate bond market



Note: Turnover ratio is calculated as the annual traded volume as a share of the outstanding amount of corporate bonds at the end of the year.
Source: Sveriges Riksbank (SELMA Statistics), OECD Capital Market Series dataset.

Despite the positive evolution in terms of turnover, liquidity remains low when compared to other markets outside the European Economic Area. A lack of transparency in pricing and trading has led to unreliable pricing (Wollert, 2020^[17]). Part of the reduced transparency in Swedish bond markets is an effect of regulation, and more specifically by the implementation of the European Union's directive MiFID II and MiFIR in 2018, as analysis by the Swedish Financial Supervisory Authority has shown. Prior to its implementation, since 2015 there had been national rules in place related to disclosure of price and volume of bond trades. For all bond trades, with the exception of trades exceeding SEK 50 million, this information was to be disclosed at latest by 09:00 (AM) the following day. MiFID II and MiFIR have, on the face of it, more stringent disclosure requirements, mandating such disclosure both pre-trade (orders) and post-trade (transactions) effectively in real time. For pre-trade disclosure, the main rule states that buy and sell bids as well as order depth should be disclosed continuously by market operators and investment firms operating a trading venue during market hours.⁸ However, due to exceptions included in the directive, all investment firms trading in Swedish bonds are exempt from pre-trade disclosure (it should be noted that pre-trade transparency was very low also prior to the implementation of MiFIR). When it comes to post-trade disclosure, MiFIR lists three conditions under which disclosure of non-equity transactions may be deferred. They apply to transactions that are: 1) larger than normal market size; 2) related to instruments for which there is no liquid market; or 3) above an instrument-specific size. For trades subject to deferrals based on these criteria, information is to be disclosed at latest 19:00 (7:00 PM) the second working day after the trade. In practice, since only a handful of Swedish bonds are considered liquid under this

regulation, essentially all trades are eligible for deferrals. In August 2019, only one Swedish ISIN bond was considered liquid. The effect of this has been reduced transparency on the Swedish bond markets. According to a survey of market participants, well above 60% find that MiFID II/MiFIR has decreased transparency, with just under 30% saying it is unchanged (Finansinspektionen, 2019_[18]).⁹

The Financial Supervisory Authority's analysis further shows that the reduction in transparency is due to fragmentation in data provision (such as turnover data, which was previously available in one place), owing to the lack of an entity compiling all published information (a "consolidated tape provider" or CTP). However, in July 2021, ESMA made available the first CTP data, which will be published biannually (ESMA, 2021_[19]). In line with the objectives of MiFIR/MiFID II, trading on regulated venues has increased. Before their implementation in 2018, effectively all Swedish corporate bonds were traded OTC. By 2019 the share had fallen to below 40%, with a substantial increase particularly in systematic internalisers (executing orders against their own books or client orders), but also on trading venues (which includes both regulated markets, MTFs and OTFs).¹⁰ Data show that in practice transactions executed by systematic internalisers are published two days after close. For transactions executed on an MTF, the delay is normally four weeks or more for all types of bonds, although in Sweden this deferral only applies to sovereign and covered bonds and not for corporate bonds. However, most MTF trades in Swedish corporate bonds are executed on platforms that fall under other EU-country regulations. Different jurisdictions apply different exceptions, and the Swedish FSA has found discrepancies between the transaction data it receives and the publicly available data, meaning the latter gives an incomplete view of the market (Finansinspektionen, 2019_[18]).

In response to this, the Financial Supervisory Authority tasked the Swedish Securities Markets Association (SSMA) with investigating how to improve transparency. This resulted in a self-regulatory recommendation on bond market transparency, which applies voluntarily in addition to the mandatory rules set out in MiFID II and MiFIR. The recommendation entails e.g. the daily publication of aggregate transaction information executed on the Swedish market, which is to be made public through a single data provider. Notably, this (self) regulation is more stringent than the national rules applied prior to the implementation of the EU directive (Swedish Securities Markets Association, 2020_[20]).

It bears mentioning that while increased transparency in bond markets is definitely beneficial to liquidity, a balance needs to be struck between transparency and dealer incentives to intermediate. Typically, if a trade leads a dealer to add bonds to its inventory, it will typically want to resell these bonds in the inter-dealer market. Forcing dealers to show their hand may compromise their bargaining position in that market, in turn reducing their incentives to engage in such intermediation. This is particularly pertinent for high-yield, illiquid bonds (Çelik, Demirtaş and Isaksson, 2015_[14]). At the same time, it is difficult to establish which way the causality runs. Limited transparency may be required to maintain dealer incentives for markets with low liquidity, but low liquidity may equally be an effect of low transparency (making pricing difficult).

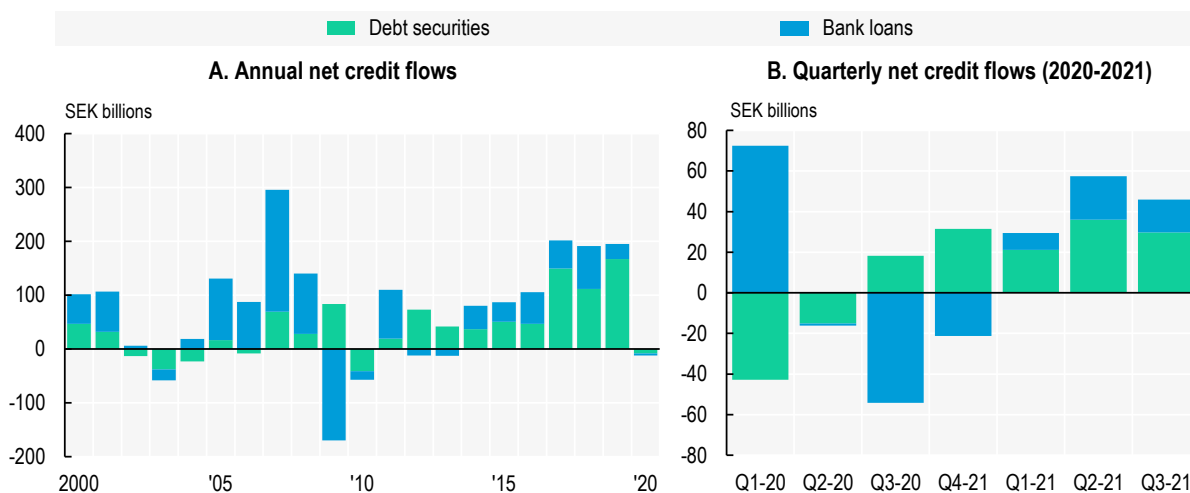
1.8.1. The Swedish corporate bond market during COVID-19

The Swedish corporate bond market's behaviour during the COVID-19 crisis provides a useful case study, highlighting the key challenges still facing the market, notably pertaining to liquidity. This subsection provides an overview of the dynamics as the pandemic unfolded, including subsequent initiatives to improve market functioning, both from regulators and private sector representatives.

Well-functioning capital markets serve to provide an economy with increased resilience in times of crisis, allowing companies to access financing even as risk aversion increases, typically resulting in contractions of both bank credit and consumer demand, simultaneously increasing the need for financing and decreasing the availability of capital. In 2009, non-financial companies globally issued record amounts of bonds, and the same thing happened again in 2020 as the pandemic broke out. The exact same pattern can be seen for equity markets (of particular importance are secondary public offerings, i.e. already listed companies tapping equity markets) (OECD, 2021_[4]). These developments are indicative of the ability of

market-based financing, not least bonds, to help economies overcome periods of financial and general economic distress. However, a prerequisite for this is that markets are sufficiently flexible, liquid and deep. When they are not, they offer little crisis resilience. For this reason, the Swedish corporate bond market did not display the same dynamics as those seen globally during the COVID-19 crisis. Figure 1.19 shows net credit flows to non-financial companies over time in Sweden. Panel A illustrates the same broader Swedish trend seen in previous figures, namely a shift from bank financing towards debt securities around 2011. It also gives an indication of the pro- or counter-cyclicality of different types of borrowing during crises. In 2009, as bank lending contracted sharply, debt securities actually increased. However, two points are critical to consider together with these data. First, the year after, in 2010, credit flows from debt securities contracted more than bank loans in absolute terms, despite being a much smaller market segment. Second, the Swedish bond market of 2009 was very different from the one of today. As illustrated in Figure 1.10, in those years the market was dominated by large, established issuers. The median issue size was significant and the number of issuers low. While market access for such companies is indeed important, it is not necessarily a good indicator of the extent to which a market provides resilience more broadly. The COVID-19 crisis provides a better test of this, since by 2020 the market had expanded significantly to include a larger number of companies. Panel B below shows quarterly net credit flows in 2020 and 2021. This paints a markedly different picture, with debt securities contracting significantly in both the first (while bank lending remained positive and significant) and the second quarter of 2020. These flows only turned positive again in the third quarter, notably as the Riksbank's corporate bond purchasing programme began in September, instilling a degree of trust in the continued functioning of the market.

Figure 1.19. Net credit flows to non-financial companies

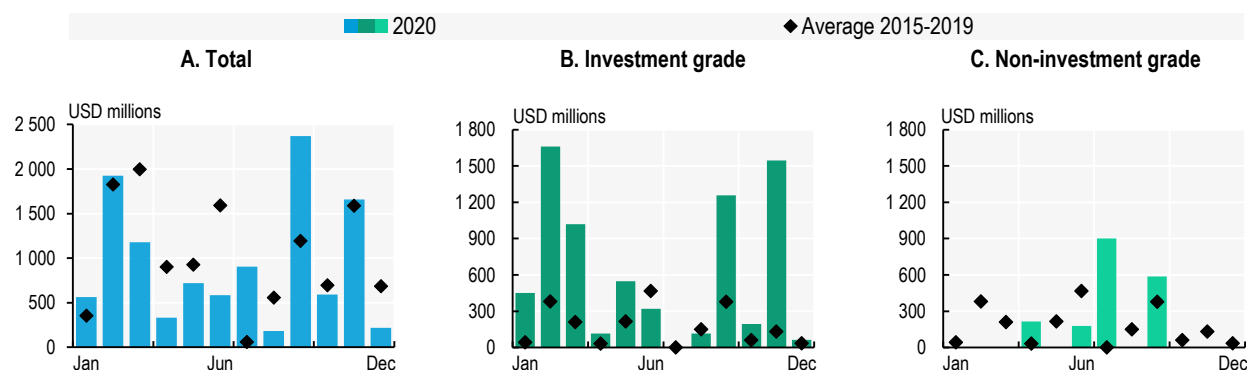


Source: Financial Accounts from Statistics Sweden (SCB).

Figure 1.20 provides a more detailed account of primary market issuance during the COVID-19 crisis. In the early months of the pandemic, issuance was significantly lower than its five-year average for the market as a whole (Panel A). With the exception of July and September (when the central bank's purchasing programme began and issuance increased sharply), this held true for the full year. February and November saw similar numbers as previous years. This is in sharp contrast to global developments, where total issuance markedly exceeded historical averages, in particular in the crucial months of March, April, May and June (OECD, 2021^[41]). However, as Panels B and C reveal, the dynamics differed substantially between the investment grade and non-investment grade segments on the Swedish market. Notably, investment grade issuance was significantly higher than in previous years, in particular in February and March in the early stages of the pandemic and then again in September and November. Contrarily,

non-investment grade issuance was non-existent in the first three months of 2020. It remained below historical averages in every month, with the exception of April, July and September. However, issuance in these months was driven by a handful of large bonds by no more than one issuer per month.¹¹ In total in 2020, there were no more than five non-investment grade bonds issued by Swedish companies.

Figure 1.20. Swedish non-financial bond issuances during the COVID-19 pandemic



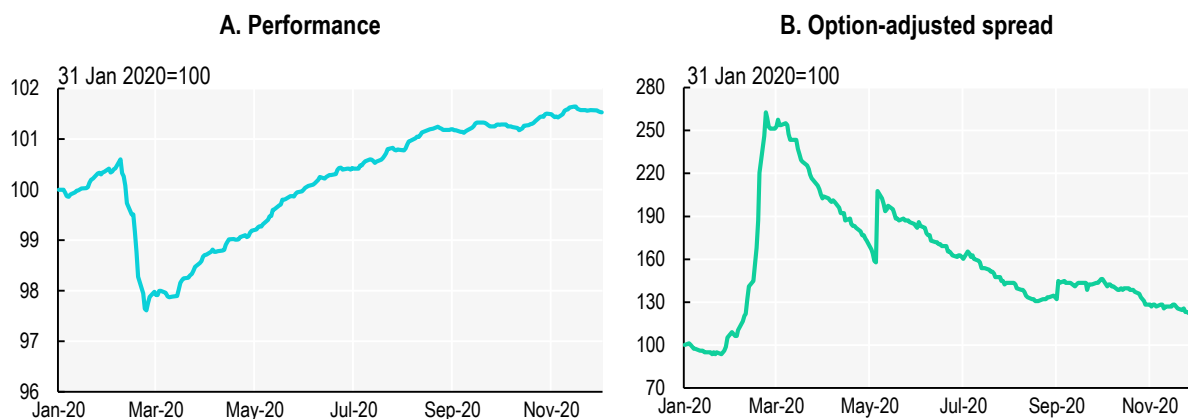
Note: Panel A includes unrated bonds. Not adjusted for inflation.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

The significant impact of the COVID-19 crisis can be seen even more clearly in the secondary market. Figure 1.21 below shows how an index of investment grade bonds issued in SEK developed during 2020. Panel A shows how the index fell very sharply in March, gradually recovering over the year, assisted by significant fiscal and monetary support at the national and supranational levels. Panel B shows the option-adjusted spread, which increased 2.5 times from 31 January to 24 March. These developments are both indicative of a major sell-off and liquidity crunch. These dynamics were not unique to Sweden. The S&P 500 Investment Grade Corporate Bond Index (effectively the United States equivalent of the index presented below) fell even deeper and spreads increased more than for the Swedish index. However, this should be considered with two points in mind. Firstly, substantial parts of the Swedish market are unrated (as seen in Figure 1.3) or rated non-investment grade. Since the index does not reflect these bonds, it gives only a partial picture of the market which is likely skewed towards its strongest part. Secondly, the US index recovered much faster (both in terms of performance and spread) and more strongly after the initial downturn, indicating less uncertainty about the market's continued functioning (again aided by substantial fiscal/monetary support).

A lack of liquidity was arguably the most pressing issue on the Swedish corporate bond market during the COVID-induced crisis. During times of financial distress, supply and demand on capital markets tend to be lopsided as large parts of the market rush to sell riskier assets and to buy very secure ones (a so-called flight-to-safety). These dynamics lead to e.g. the increased spread seen above, typically coupled with a widened bid-ask spread for most corporate bonds. However, in a resilient market, the price formation process should not break down entirely in such a scenario. When it does, it is indicative of a completely one-sided market where prospective sellers are not certain they will be able to find a buyer at all for their investments. These tendencies were visible in the Swedish bond markets in 2020 (and indeed in Europe more generally), as roughly 30 investment funds, with aggregate assets under management equivalent to some SEK 120 billion, temporarily froze owing to lacking information on closing prices and volume trading (Riksbanken, 2021^[5]). In addition to domestic investment funds, foreign investors also offloaded significant holdings of Swedish corporate bonds (Becker et al., 2020^[10]).

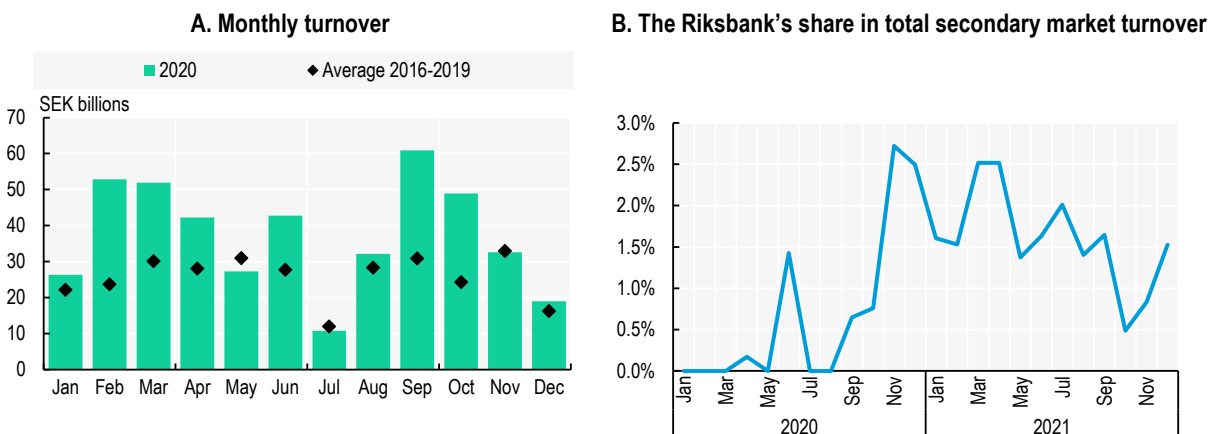
Figure 1.21. S&P Sweden 1+ Year Investment Grade Corporate Bond Index



Note: The index includes investment grade bonds (as determined by ratings from S&P, Moody's or Fitch) denominated in SEK with a minimum notional outstanding amount of SEK 250 million and a maturity of more than one year.
Source: S&P Global.

Notably, these adverse developments were to an extent an effect of the ownership structure on the Swedish market. As shown in Figure 1.13, investment funds represent a very large share of domestic ownership. Similar to banks, open-ended investment funds engage in liquidity transformation, since they offer essentially daily liquidity to investors on the basis of underlying assets that do not in fact have that level of liquidity. For this reason, they are often considered parts of the so-called “shadow banking” system (or “non-bank financial intermediation” in an EU context). There is evidence that in the EU as a whole, the share of non-liquid assets in bond funds’ total assets has increased substantially over time (ESRB, 2019^[21]). The potential threat of this type of activity to financial stability is typically not visible as long as there is not a significant demand from investors to liquidate their assets simultaneously. This is, however, precisely what happened during the COVID-19 crisis. Panel A of Figure 1.22 shows how market turnover increased over historical averages, roughly doubling in February and March of 2020. Panel B shows the Riksbank’s share in total secondary market turnover, following its intervention in the markets.

Figure 1.22. Turnover in the Swedish corporate bond market during the COVID-19 pandemic



Note: Refers to spot contracts. Monthly figures are sums of daily data. In Panel B, secondary market trading is calculated as total turnover subtracted by transactions identified as primary market trading.
Source: Sveriges Riksbank (SELMA Statistics).

The FSA's (*Finansinspektionen*) analysis concludes that corporate bond markets have not offered more flexible financing than banks in times of crises in Sweden, meaning they do not provide the same type of counter-cyclical financing as in the EU and US markets. However, issuers who could access bond markets in foreign currencies were able to benefit from greater flexibility. Over the past decade, the vast majority of SEK denominated bonds issued by Swedish companies (in the order of 90%) were not traded on any given day, compared to a figure of about 60% for foreign currency denominated bonds. The lack of resilience, in particular in the domestic currency market, can partly be explained by the underdeveloped market and in particular the lack of liquidity. However, it bears mentioning that Sweden has a stable and profitable banking system that exited the 2008 financial crisis (and the subsequent euro crisis) in a comparatively strong position. Notably, while bank lending was below trend in Sweden both following 2008 and the euro crisis, this was driven by a decrease in foreign currency lending, whereas domestic currency bank loans remained remarkably stable (Becker et al., 2020^[10]).

Shortcomings in the Swedish bond market during the COVID-19 crisis has prompted several regulators and public bodies to undertake initiatives to reform the market and make it more resilient, decreasing the degree of credit concentration in the banking sector. Notably, in 2021 the government tasked the FSA with investigating the need for additional liquidity management tools to deal with liquidity risk for investment funds. It reviewed three such tools: *swing pricing* (adjusting the fund unit value or sales and redemption price of the units up/down depending on the costs associated with the fund's net flows); *anti-dilution levies* (a fee levied on investors when they sell/redeem fund units); and *redemption gates* (allowing funds to postpone redemptions above pre-defined thresholds). Its assessment is that the application of anti-dilutions levies is possible within the existing legal framework, along with a certain type of swing pricing.¹² It also believes that the use of redemption gates should be allowed. The FSA's position is that the conditions for applying these tools should be regulated "in legislation and related regulations". Swing pricing has been identified as a priority area. It also recommends that a requirement that investment funds be open for redemption at least twice per month should be reflected in law, along with the longest allowed redemption time (Finansinspektionen, 2021^[22]). In an article in the financial press, the Director General of the FSA has also urged market participants to improve their conduct, notably with respect to disclosure and transparency, and encourages the development of a self-regulatory regime by the SSMA. The article also stresses the need for investment funds to improve their liquidity management by designing their portfolios with scenarios of market pressure in mind, for example increasing the share of liquid assets or making clear to investors that they do not offer daily redemptions (Finansinspektionen, 2021^[23]). These discussions are reminiscent of those that took place in the United States during the so-called "taper tantrum" in mid-2013 when the substantial selling pressure had large effects on corporate bond prices and officials considered imposing exit fees on bond funds (Çelik, Demirtaş and Isaksson, 2015^[14]).

Further, the Riksbank, the Swedish National Debt Office and the FSA have jointly called for the introduction of a Swedish standard for benchmark bonds. Their proposed standard for a benchmark bond includes: a minimum issuance of SEK 1 billion (roughly USD 100 million – as shown in Figure 1.10, in 2021 68% of the number of bonds issued were below this amount); a minimum of two bookrunners to broaden the investor base; and issued through syndicated public transactions in line with the Eurobond market standard. By increasing liquidity in the market, this would help diversify the investor base, notably to long-term investors such as insurance companies and pension funds that contribute less to liquidity crunches in times of financial distress compared to the currently dominant investment funds (Finansinspektionen, 2022^[24]). In addition to encouraging the development of such a standard, the central bank has outlined a number of recommendations of measures that can be taken by different market participants, which are summarised in Box 1.1.

Box 1.1. The Riksbank's action proposals for a better functioning corporate bond market

In its 2021 report *Towards a better functioning corporate bond market*, the Swedish Riksbank outlines a number of possible action points for different market participants (issuers, investors and banks). The nine recommendations are briefly summarised below.

Issuers

Companies issuing bonds may contribute to market development and liquidity by: issuing fewer but larger bonds, thus establishing a credit curve; involving more banks (bookrunners/arrangers) in the issue process, thereby expanding the investor base; obtaining credit ratings for more issues.

Investors

Investors, most notably investment funds, may: communicate more clearly to retail investors the liquidity risk and limitations of investing in fixed income funds (notably by reporting spread exposure¹ in fact sheets, on websites, etc.); limiting the offering of daily redemptions (exchanges/fund platforms can play an important role in this regard); and by ensuring they are adequately managing liquidity risk, e.g. by increasing the share of liquid assets and possibly applying liquidity management tools such as swing pricing (see above).

Banks

As advisors and dealers, banks can: encourage issuers to e.g. obtain a credit rating and discourage the issuance of a large number of smaller bonds; publish price data in a timely manner (including for private placements); and finally possibly enter into resale agreements whereby issuers pay them to be more active in the markets, although the report notes that this may also bring disadvantages such as increased borrowing costs, since the pricing of such services may be difficult.

Note: ¹. The value reduction of the fund as a share of its current value in a scenario where the interest rate spread between its holdings and government bonds doubles.

Source: Riksbanken (2021_[5]), *Towards a better functioning corporate bond market*,

<https://www.riksbank.se/globalassets/media/rapporter/riksbanksstudie/engelska/2021/towards-a-better-functioning-corporate-bond-market.pdf>.

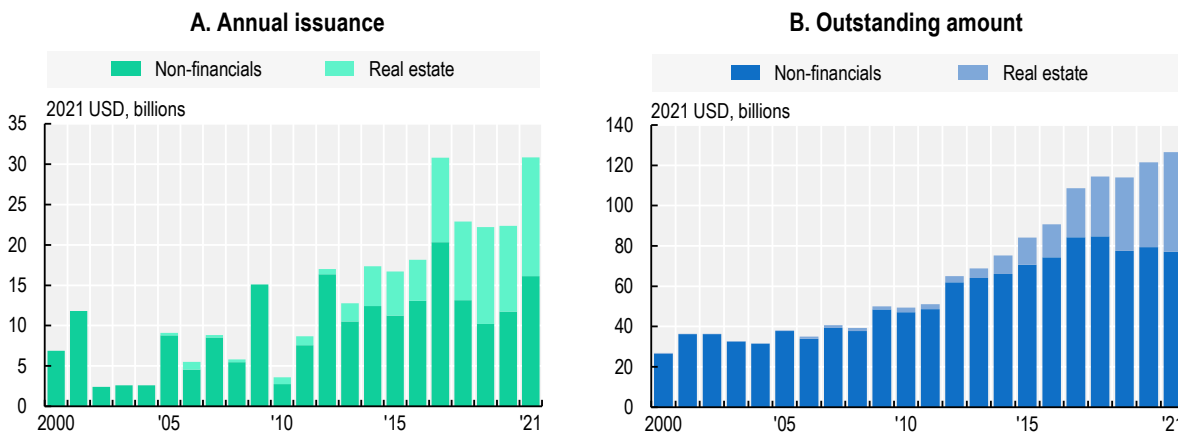
1.9. The role of real estate companies in the Swedish corporate bond markets

The real estate sector represents an important part of the Swedish corporate bond market, accounting for almost half of total outstanding bonds issued in domestic currency by amount (Wollert, 2020_[17]). This has raised concerns that a fall in real estate prices could reverberate through other sectors of the corporate bond market, threatening financial stability more generally (Riksbanken, 2021_[5]). This is particularly relevant given the very steep growth in property valuations in Sweden since the mid-1990s. Work within the OECD Capital Market Series, which is focused on non-financial companies, typically does not include the real estate sector. Real estate companies are instead classified as financials, given that they are effectively investment firms whose portfolios consist primarily of tangible assets. However, given the size, concentration and importance of real estate companies in Swedish bond markets, this subsection provides an overview of the sector's use of corporate bond financing and how it compares to that of non-financial companies. The Annex provides details on the types of companies that are included in this analysis.

Real estate companies have gone from representing a negligible share of the Swedish bond market to becoming very substantial, accounting for 48% of total issuance and 39%¹³ of outstanding amounts in

2021 (Figure 1.23, Panels A and B).¹⁴ Issuance has been particularly high since 2017, averaging USD 11.5 billion annually between 2017 and 2021, up from an average of USD 2.9 billion from 2010 to 2016.

Figure 1.23. The real estate sector's role in the Swedish corporate bond market

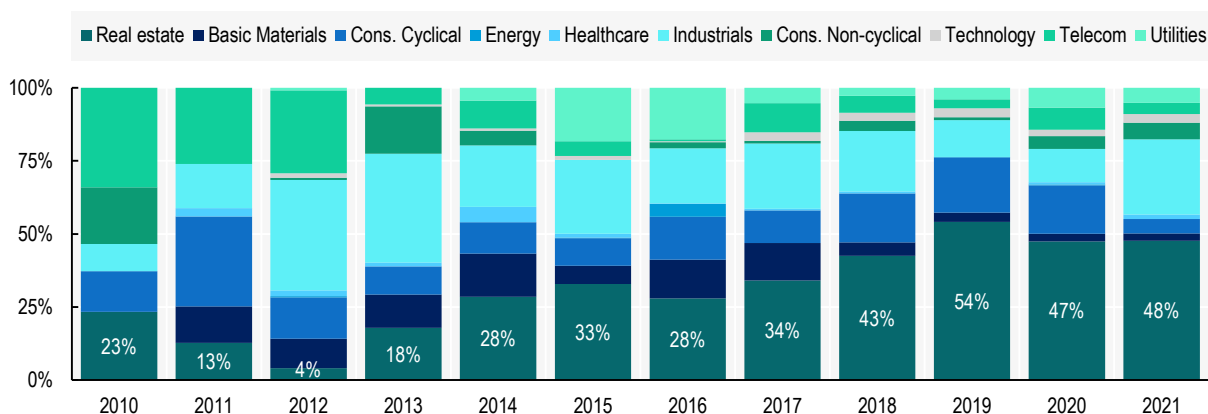


Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

Including real estate companies in the analysis significantly changes the industry composition showed in Figure 1.12. As shown in Figure 1.24, since 2019 real estate companies have made up roughly half of annual issuance, up from 20% on average between 2010 and 2015. This degree of concentration exposes the bond market as a whole to fluctuations within the dominant industry. Given the real estate sector's particularly strong link to the financial sector (e.g. because of the amount of real estate collateral held by banks), this lack of diversification is a financial stability concern, especially when considering the prospect of significantly higher interest rates going forward and its likely impact on real estate prices.

It bears noting that real estate companies do not seem to issue foreign currency denominated bonds to a greater extent than non-financial companies. In fact, they have issued a larger share of SEK-denominated bonds in the last decade.

Figure 1.24. Industry composition of the Swedish corporate bond market

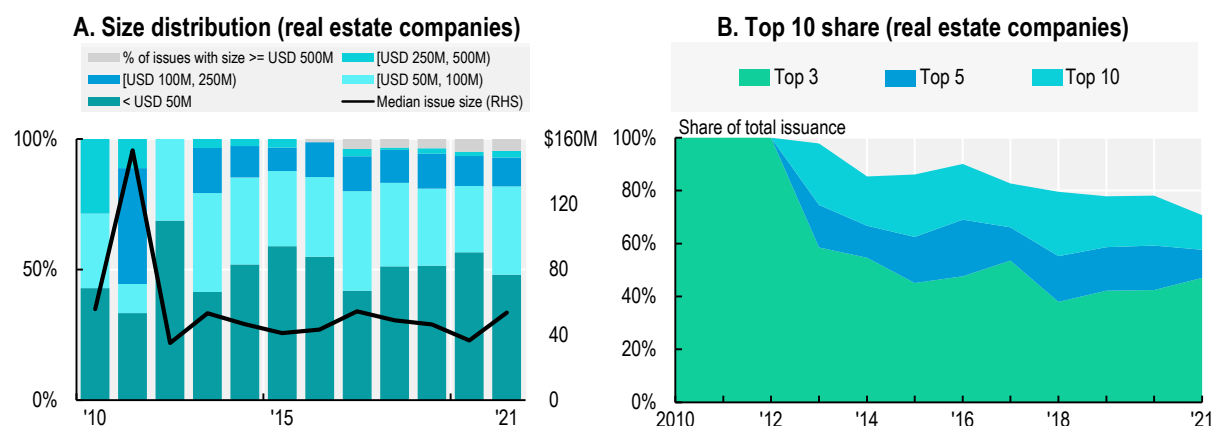


Note: The figure includes real estate companies.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

The median issue size by real estate companies has remained relatively constant since 2012, averaging USD 46 million between 2012 and 2020, and reaching USD 54 million in 2021 (Figure 1.25, Panel A). This is similar to the figure for non-financial companies at USD 60 million (Figure 1.10, Panel B). However, the distribution of issue sizes is weighted more towards smaller issues among real estate companies than is the case for non-financial firms. While the two smallest size categories (below USD 100 million) made up 68% of the total number of issues by non-financial companies in 2021, for real estate companies it was as high as 82%. In spite of this, the concentration of total issue amounts by the top ten real estate issuers (71% in 2021) is higher than for non-financial companies (51%) (Figure 1.25, Panel B; Figure 1.11). The difference is even starker when looking at the top three companies, which represented 47% of total issuance by the real estate sector in 2021, compared to 25% for the top three non-financial companies. This is partly a natural effect of a smaller sample of real estate companies, but it is also because many of the largest real estate companies issue several smaller bonds in any given year rather than issuing larger bonds. This can be seen when comparing the share of the three largest bonds in total issuance in a year with the share of the total amount issued by the three largest issuers. For example, between 2015 and 2021, the three largest real estate bonds made up an average of 19% of total issuance annually. However, the three largest issuers made up an average of 45% of annual issuance, meaning their total issuance is made up by a set of smaller bonds. This happens because companies want to issue bonds with different profiles (e.g. with respect to maturities to smooth their repayment schedule or in different currencies to attract different investors), and is not limited to the real estate sector. However, Swedish real estate companies issue a larger number of bonds per issuer than non-financial companies do. Between 2015 and 2021, non-financial companies (those issuing bonds) issued an average of 2.2 bonds per year. The corresponding figure for real estate companies was more than twice as high at 4.5 bonds per issuer and year, indicating it is composed of active issuers to a greater extent than the broader non-financial group. Similarly, when looking at the median issue size (the bond) as a percentage of the median issuer size (the company) between 2015 and 2021, the average figure for real estate companies is lower (1.4%) than for non-financial companies (1.8%), meaning the former group of companies tends to issue smaller individual bonds relative to their size.

Figure 1.25. Size distribution and concentration of real estate issuers

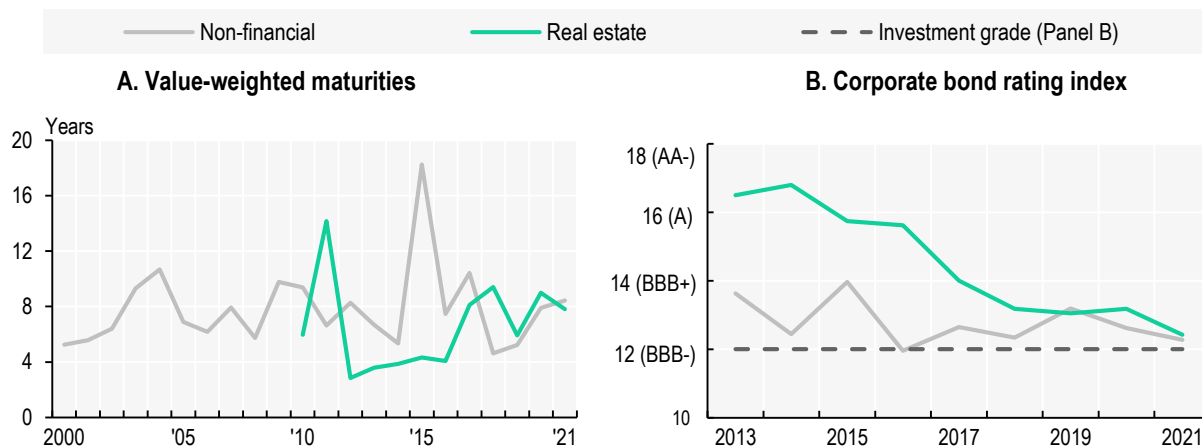


Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

The real estate sector has converged with the non-financial sector over time both in terms of credit ratings and maturity profile. In 2021, the value-weighted average maturity of real estate bonds was 7.8 years, compared to 8.4 years for the non-financial sector (Figure 1.26, Panel A). The groups are even closer in terms of credit ratings, with the average value-weighted rating for real estate company bonds at 12.4 (about half a notch above BBB-) in 2021 compared to 12.3 for non-financial companies. Historically, the real estate

sector had substantially higher ratings than the non-financial sector, in the order of three full notches on average between 2013 to 2016 (real estate company bonds had an average rating corresponding to A, compared to BBB for non-financial company bonds) (Figure 1.26, Panel B).

Figure 1.26. Maturity and credit rating profile of the real estate sector



Note: Real estate time series starts in 2010 in Panel A because issuance before that year was very small. The same applies for rated bonds in Panel B (from 2013). The peak for non-financial companies in 2015 in Panel A is driven by a set of four large bonds (between USD 344 million to USD 1.05 billion) issued by state-owned power company Vattenfall with maturities between 62 and 63 years.

Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

2 Regulation of the Swedish corporate bond market

This chapter offers a brief summary of the core parts of the regulation of the Swedish bond market. Specifically, it considers regulatory aspects of the bond issuance process; market transparency and issuers' information disclosure; and equal treatment of bondholders.

2.1. Transparency in the issuance process

The information given in relation to bond issuances is first and foremost regulated in Regulation (EU) 2017/1129 of the European Parliament and of the Council of 14 June 2017 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market, and repealing Directive 2003/71/EC (the "Prospectus regulation").¹⁵ The purpose of the Prospectus regulation is to ensure investor protection, efficiency and trust in the internal capital market.¹⁶ According to Article 3 in the Prospectus regulation, a prospectus should be published before a security is offered to the public or is admitted to trading on a regulated market in the Union. According to Article 6.1, a prospectus shall contain the necessary information which is material to an investor when making an informed assessment of the issuer's and any guarantors' current and future financial positions, the rights attaching to the securities, and the reasons for the issuance and its impact on the issuer. According to the same article, the information may vary depending on the nature of the issuer, the type of security issued, the circumstances of the issuer, and whether or not the bonds have a denomination per unit of at least EUR 100 000 or are to be traded only on a regulated market (or a specific segment thereof, to which only qualified investors have access to trading). According to Article 6.2, the information in a prospectus shall be written and presented in an easily analysable, concise and comprehensible form.

However, the Prospectus regulation contains a number of exemptions from the duty to produce a prospectus. According to Article 1.4, a prospectus is for instance not required when offering securities

(i) solely to qualified investors, (ii) to fewer than 150 natural or legal persons per Member State (other than qualified investors), (iii) where the denomination per unit amounts to at least EUR 100 000, or (iv) to investors who acquire securities for a total consideration of at least EUR 100 000 per investor, for each separate offer. However, it is important to note that the exemptions in Article 1.4 apply to offers of securities, not admittance to trading on a regulated market. The exemptions from the duty to produce a prospectus before admittance to trading according to Article 1.5 is rarely relevant when admitting corporate bonds to trading.

Market practice in Sweden is for corporate bonds to have a unit value of at least EUR 100 000, with offers typically directed only to qualified investors, which is why the Prospectus regulation's exemption from the obligation to produce a prospectus under Article 1.4 will generally apply. However, when listing corporate bonds on one of the regulated marketplaces for corporate bonds (the main one being Nasdaq Stockholm), a prospectus must generally be published in connection with admission to trading. Nevertheless, since the issue is normally fully subscribed and the books are closed before the bonds are admitted to trading (and before the application for admission to trading is submitted), the prospectus is not typically included in the investment basis for those investing in the bond on the primary market. Instead, investors make their decisions based on an investment memorandum, which is not a regulated document in the same sense as a prospectus and therefore does not include all material information provided in the latter. Since the secondary market is very limited in Sweden, the consequence is that the Prospectus regulation has little practical significance for corporate bond investors.

2.2. Market transparency and issuers' disclosure of information

The Swedish regulation of trading in corporate bonds is based on Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU ("MiFID 2") and Regulation 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012 ("MiFIR"), as well as delegated regulations and directives. MiFID 2 has been transposed into Swedish law through the Securities Market Act (2007:528). Some rules that are relevant to trading in corporate bonds can also be found in the Act on Trading in Financial Instruments (1991:980) as well as in the FSA's regulation. In addition, issuers of listed corporate bonds are regulated by the exchanges' rulebooks, most notably *Nasdaq's Rule Book for Issuers of Fixed Income Instruments* (the "Rulebook").

Transparency requirements regarding trading in corporate bonds are found in Chapter 2 and Articles 8 and 10 of MiFIR; Chapter 15, 16 and 17 of the Securities Market Act; and the FSA regulations FFFS 2007:17 and FFFS 2017:5. The Swedish Securities Markets Association has also produced a recommendation on transparency in the Swedish corporate bond market.

Article 8 (1) of MiFIR regulates the obligation to publish information *before* trading in bonds. According to the article, market operators and investment firms operating a trading venue must, during normal market opening hours, continuously publish current bid and ask orders as well as order depths for bond transactions. Article 8 effectively seeks publication of trading information in real time. However, under MiFIR Article 9, competent authorities have the possibility to grant exemptions from the disclosure requirement under Article 8. Exemptions may be granted for transactions that either: are larger than normal on the market; exceed a size specific to the financial instrument in question, which would expose liquidity providers to undue risk and which take into account whether the market participants concerned are retail or wholesale investors; and/or relate to instruments for which there is no liquid market. The Swedish FSA has decided that exemptions shall be granted when the conditions according to MiFIR Article 9 are met.¹⁷ Such exemptions are used to a very high degree, and the FSA describes pre-trade transparency as "very limited".¹⁸

Article 10 of MiFIR regulates the obligation to publish post-trade information. According to the article, market operators and investment firms operating a trading venue shall disclose the price, volume and timing of bond transactions as close to real time as technically possible. However, under Article 11, competent authorities also have the possibility to authorise the suspension of the publication of transactions. As noted under section 1.8, authorisation shall be granted “in particular” in respect of transactions which: are larger than normal on the market; relate to an instrument, or category of instruments, traded on a trading venue, for which there is no liquid market; exceed a size specific to an instrument, or category of instruments, traded on a trading venue, for which there is no liquid market, which would expose liquidity providers to undue risk and which take into account whether the market participants concerned are non-professional or professional investors. As previously mentioned, only a few Swedish bonds are judged to be liquid according to MiFIR definitions. Deferred publication after trading in accordance with Article 11 can therefore be applied to almost all trading on the Swedish market.¹⁹ The conclusion is that the transparency in the Swedish corporate bond market has, in general, decreased as a result of MiFID 2 and MiFIR.²⁰

To increase transparency in the Swedish bond market, the Swedish Securities Markets Association has produced a self-regulatory recommendation on transparency in the Swedish bond market.²¹ It is intended to be applied by all Swedish securities institutions and foreign counterparts that trade in bonds denominated in Swedish krona which are admitted to trading on a regulated market in Sweden or traded on a trading venue in Sweden, and thus does not apply to securities admitted to trading on a foreign market. The disclosure should include the following closing information: (i) weighted average of traded volume during the trading day, (ii) maximum closing price during the trading day, (iii) minimum closing price during the trading day, and (iv) total volume of all trading during the trading day. Transactions carried out until 17.00 must be published no later than 19.00 on the same business day. The publication of trading information may be postponed when a securities institution has traded on its own behalf and the transaction exceeds SEK 50 million. Deferred publication shall take place no later than seven business days after the transaction date.

MiFIR’s rules on the disclosure of trading information are supplemented by disclosure requirements in accordance with MiFID 2, transposed into Swedish law through the Securities Market Act. When corporate bonds are admitted to trading on a regulated market, the issuer is obliged to provide information to the stock exchange on an ongoing basis. The issuer is obliged to continuously inform the stock exchange about its activities, and to provide it with the information needed for the exchange to be able to fulfil its constitutional obligations. When corporate bonds are traded on a regulated market, the issuer is also obliged to immediately publish all changes in the rights attached to the securities. In the case of corporate bonds, typical changes that require immediate publication are, for example, changes in interest rates or other loan terms.²²

An issuer domiciled in Sweden and whose transferable securities are admitted to trading on a regulated market shall publish regular financial information in accordance with Chapter 16 of the Securities Market Act. However, for bonds or other transferable debt obligations that each have a nominal value corresponding to at least EUR 100 000, the rules in Chapter 16 do not apply as a main rule. As corporate bonds usually have a nominal value of at least EUR 100 000 this exemption often applies to these securities in particular. The Securities Markets Act’s requirement for regular disclosure of financial information thus often does not apply to corporate bond issuers.

Information shall be published to be available to the public within the European Economic Area (EEA) quickly and in a non-discriminatory manner. According to Chapter 10, Section 5 of the FSA’s regulation FFFS 2007:17 (which complements ch. 17, sec. 2 of the Securities Market Act and specifies the requirement for non-discrimination), the issuer is obliged to publish information in such a way that the information can be disseminated to the public in Sweden and the EEA as soon as possible. The information must also be published on the issuer’s website as soon as possible, and significant changes to previously

published information shall be published as soon as possible after the change has occurred via the same channels that were used in the publication of the original information.

Another information issue of potential relevance to the functioning of the corporate bond market concerns the list of bondholders and others with rights linked to the bonds, which can be generated via Euroclear's system (control account). Information on existing holders is not public or available to potential investors or existing bondholders, but could nevertheless be relevant information for potential acquirers of corporate bonds. According to ch. 8 sec. 1 of the Act on Central Securities Depositories and the Accounting of Financial Instruments (1998: 1 479), the transparency of a control account is limited to those who are registered in the account in question. Owners, mortgagees and any other data subject have the right to receive information about the contents of the account to the extent that the content concerns the data subject's rights. Thus, the information on the bondholders is available only to a limited extent.

Issuers of listed corporate bonds are also required to publish inside information in accordance with Regulation No. 596/2014 of the European Parliament and of the Council of 16 April 2014 on market abuse and repealing Directive 2003/6/EC of the European Parliament and of the Council and Commission Directives 2003/124/EC, 2003/125/EC and 2004/72/EC ("MAR"). According to Article 7 and 17 in MAR, an issuer is required to disclose inside information as soon as possible after the inside information arises (subject to certain exemptions). It is, however, not entirely clear what type of information constitutes inside information according to Article 7 in MAR for a bond issuer, since most of the legal discussion around the MAR regime as well as the case law has been focused on what constitutes inside information for issuers of shares.²³ To date, there is neither any guidance nor case law in Sweden. Taken together, there is some legal uncertainty with regard to what information an issuer of corporate bonds is required to disclose.

Finally, issuers of listed corporate bonds are regulated by the exchanges' own rules. According to the Nasdaq Rulebook, issuers of bond listed on the exchange are obliged to continuously disclose certain information. Section 3 in the Rulebook contains several specific disclosure requirements, for instance regarding annual and bi-annual reports, forecasts and forward-looking statements, information on resolutions adopted by the Annual General Meeting and changes in the terms of the securities. Issuers must also, well before the admission to trading, have procedures, controls and financial reporting systems in place that provide the market with reliable and accurate information in a timely manner in accordance with Nasdaq's issuer rules (Section 2.4). The issuer shall also have the capacity to publish information in accordance with MAR. According to Section 3.3.2, the issuer must publish all financial reports that it is required to prepare. An issuer whose debt instruments are primarily admitted to trading on Nasdaq Stockholm must publish an annual financial statement as well as a bi-annual financial statement. Publication shall take place in the manner prescribed in Article 17 of MAR. According to Section 3.2 of Nasdaq's issuer rules, the issuer must have its own website where published information should be available for at least five years.

2.3. Equal treatment of bondholders

The extent to which Swedish law requires equal treatment of bondholders is not entirely clear. According to ch. 18 sec. 3 of the Swedish Securities Markets Act, a bond issuer shall ensure that all bondholders of instruments that have been issued at the same time and on the same terms are treated equally with respect to the rights attached to the security. The rule was enacted as a step in the incorporation of the Transparency Directive in Swedish law (Article 18.1). Article 18.1 states that "[t]he issuer of debt securities admitted to trading on a regulated market shall ensure that all holders of debt securities ranking *pari passu* are given equal treatment in respect of all the rights attaching to those debt securities". In reason 22 in the preamble to the Directive, it is also stated that (*italics added*):

Ongoing information to holders of securities admitted to trading on a regulated market should [...] be based on the principle of equal treatment. Such equal treatment only relates to shareholders in the same position and

does not therefore prejudice the issue of how many voting rights may be attached to a particular share. *By the same token, holders of debt securities ranking pari passu should continue to benefit from equal treatment [...].* Information to holders of shares and/or debt securities in general meetings should be facilitated. [...] For the same reasons, it should be decided in a general meeting of holders of shares and/or debt securities whether the use of modern information and communication technologies should become a reality. In that case, issuers should put in place arrangements in order effectively to inform holders of their shares and/or debt securities, insofar as it is possible for them to identify those holders.

As apparent by reason 22 as well as the headline for Article 18 (*Information requirements for issuers whose debt securities are admitted to trading on a regulated market*), the requirement on equal treatment is first and foremost aimed towards equal treatment with respect to information. For this reason, it is unclear how broadly ch. 18 sec. 3 in the Swedish Securities Markets Act should be interpreted. While a literal interpretation of the rule can be broad, an interpretation conforming to the Directive would stipulate that the rule in ch. 18 sec. 3 is limited to equal treatment with respect to information.²⁴ While the first interpretation is supported by the letter of the law, and perhaps also by the general tendency for securities to be governed by principles of equal treatment, the later interpretation is supported by the fact that the preparatory works to the rule only states that it is an implementation of Article 18.1.²⁵

3

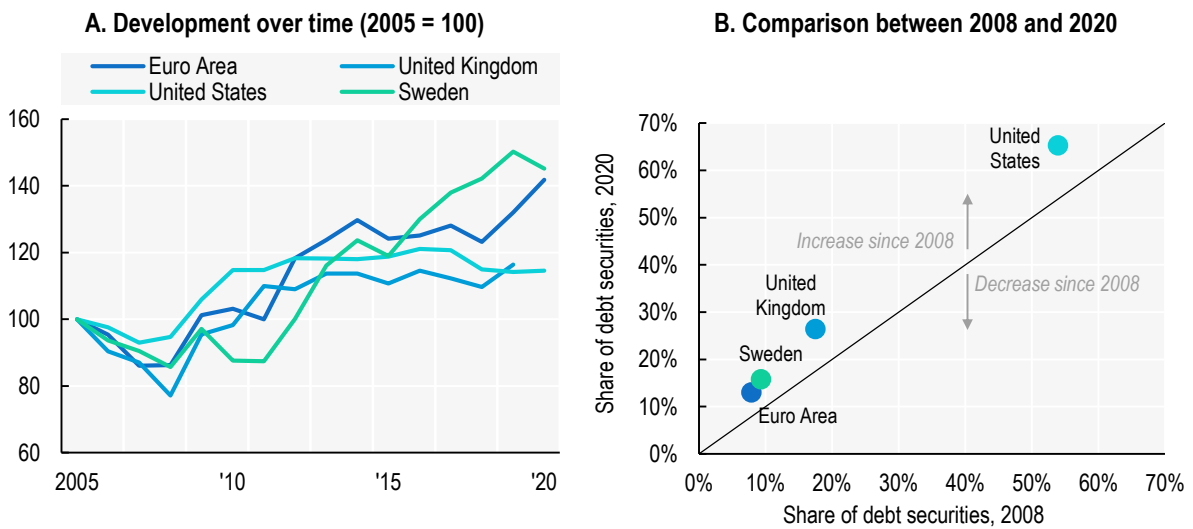
The Swedish corporate bond market in an international comparison

This chapter compares the Swedish corporate market with selected European and non-European markets. It also discusses some of the regulatory aspects that affect the secondary corporate bond market and its functioning, such as transparency rules in trading and pricing.

To fully understand the developments that have taken place in the Swedish corporate bond market as it has grown, it is useful to consider it in an international context. This chapter provides a comparison of the Swedish market with a number of peer countries/regions with respect to both the primary and secondary markets.²⁶ Note that the quantitative analysis in this section does not include real estate companies.

3.1. Market size and characteristics

Testament to the sharp growth in Swedish bond markets, since 2005 the share of debt securities in non-financial companies' total financial debt has grown faster in Sweden than in any of the peer regions shown below. Between 2005 and 2020, the share increased by 45% in Sweden, compared to 16% in the United Kingdom, 15% in the United States and 42% in the Euro Area (Figure 3.1, Panel A). However, as Panel B shows, this sharp increase comes from a comparatively low initial share, which remains substantially lower than those in the United States and the United Kingdom. In 2020, the share of debt securities in total financial debt for Swedish non-financial companies was 16%, compared to 13% in the Euro Area, 26% in the United Kingdom (2019) and as much as 65% in the United States.

Figure 3.1. Debt securities' share in total financial debt

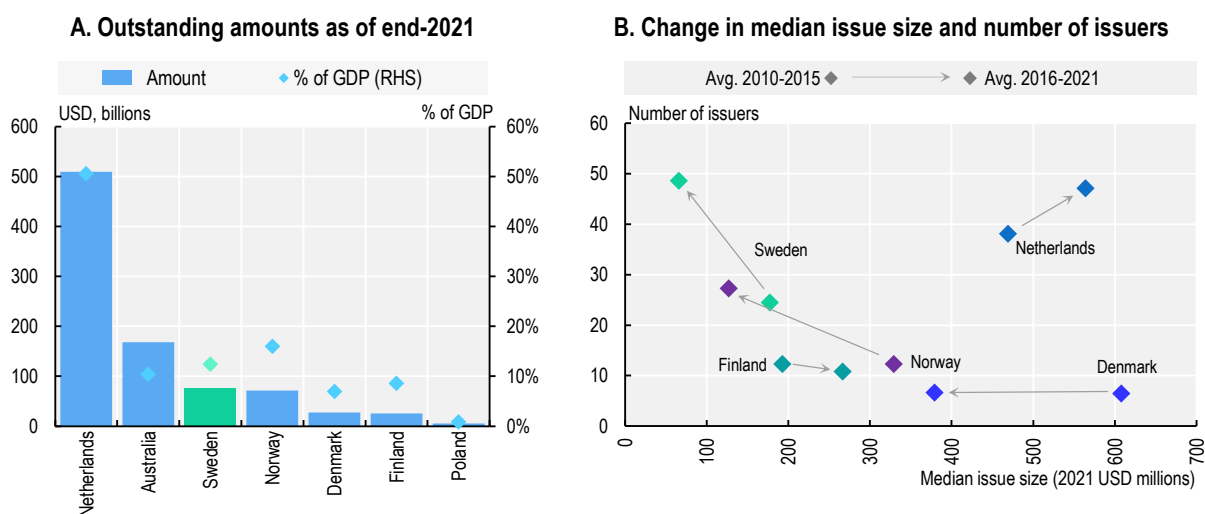
Note: Panel A shows the share of debt securities (long-term and short-term) in total debt financing (the sum of total loans and total debt securities) for non-financial companies. In Panel B, due to limited data availability the UK y-axis value is for 2019.

Source: ECB; Swedish Financial Accounts from Statistics Sweden (SCB); UK Office for National Statistics; US Federal Reserve.

In term of outstanding amounts, Sweden has the largest non-financial corporate bond market in the Nordics. At the end of 2021, the total outstanding amount was USD 77 billion, slightly higher than in Norway (USD 71 billion), and roughly three times those of Denmark (USD 28 billion) and Finland (USD 25 billion). However, it is still significantly smaller than certain European peers, notably the Netherlands, where the total outstanding amount is 6.6 times higher than that in Sweden (for reference, Dutch GDP is roughly 1.7 times higher than Sweden's) (Figure 3.2, Panel A).

The Swedish market's development over time differs from many of its peers. Panel B below shows how the number of issuers and median issue size have changed between the period 2010-15 and 2016-21 (averages for both periods). A movement upwards (downwards) indicates an increase (decrease) in the number of issuers, whereas a move to the left (right) indicates a decrease (increase) in the median issue size. Notably, Sweden has moved upwards to the left, almost doubling the number of unique issuers while decreasing the median issue size by more than 60%. As mentioned when discussing Figure 1.10, this shows how the market has expanded to include a larger number of smaller companies. In fact, in 2021 Sweden had about 1.5 times as many issuers as the (much larger) Dutch market. Norway has followed a similar trajectory. Contrarily, in the Netherlands both the number of issuers and the median issue size have increased. The Danish and Finnish markets remain limited in size, with no more than 8 and 13 issuers in 2021, respectively.

Figure 3.2. Non-financial corporate bond markets, international comparison

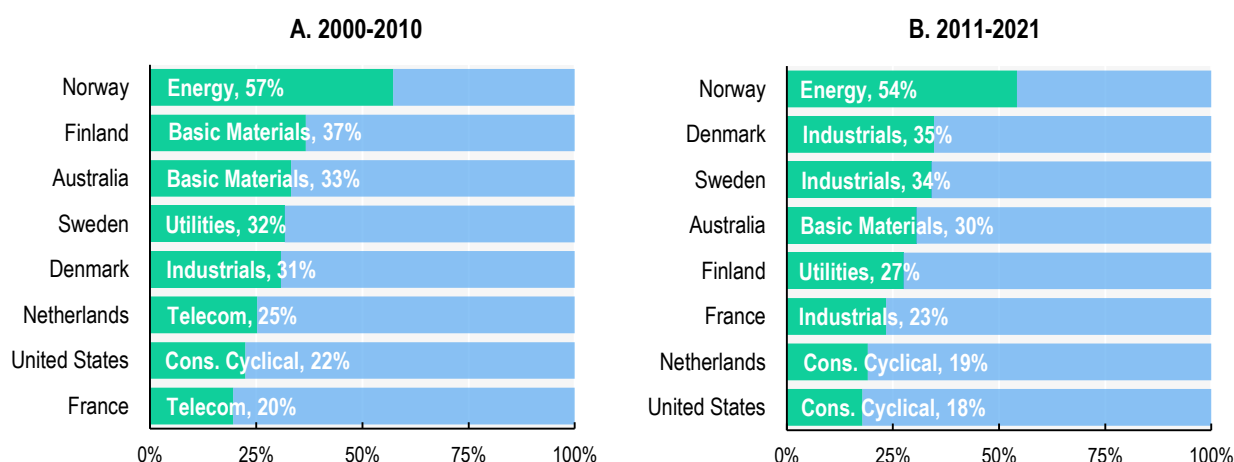


Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

While the industry composition of corporate bond issuances in Sweden has changed substantially, as shown in Figure 1.12, the degree of concentration has not. As shown in Figure 3.3, while the dominant industry changed (from utilities to industrials) between 2000-10 and 2011-21, the share of the top industry in total issuance barely did (from 32% to 34%).²⁷ This level of concentration places Sweden around the middle among its peers. Norway has the highest degree of concentration, with the energy sector representing 54% (57%) of total issuance in 2011-21 (2000-10). In the past decade, the country with the lowest industry concentration was the United States (consumer cyclicals, 18%), which has large and very active bond markets used by a wide array of industries (Panel B).

Figure 3.3. Industry concentration, total non-financial issuance

Not including real estate

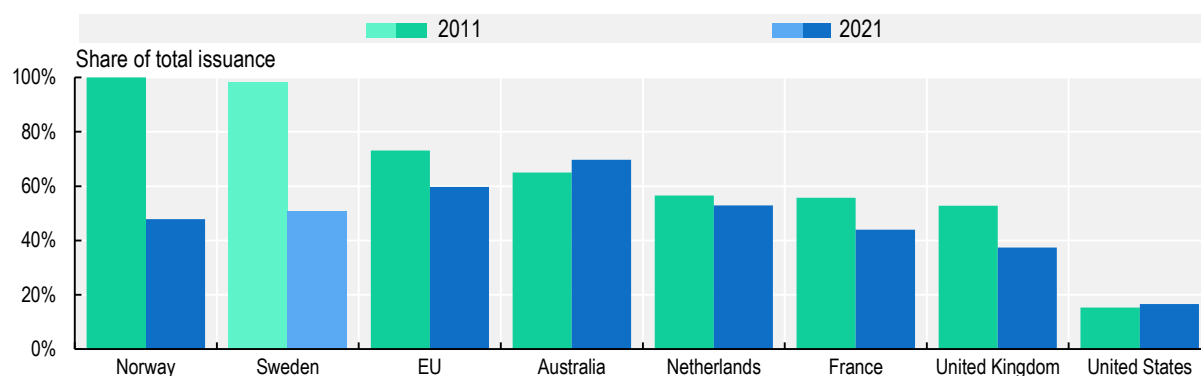


Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

Looking at the share of the top ten issuers in total issuance offers another measure of market concentration as well as an indication of how the market has changed over time. Figure 3.4 below provides an

international comparison of how that share changed in the decade from 2011 to 2021. Concentration (measured as the share of the top ten issuers) decreased in six out of the eight countries/regions shown below, by an average of 29%. Concentration increased marginally in the United States (although from a much lower level than its peers) and in Australia. In Sweden the decrease was as much as 48%, indicating how much the market has broadened in the past decade. The country has gone from having the second-most concentrated market among the peers below in 2011 to the fourth least concentrated, after the United States, the United Kingdom and France.

Figure 3.4. Top ten issuers' share in total issuance

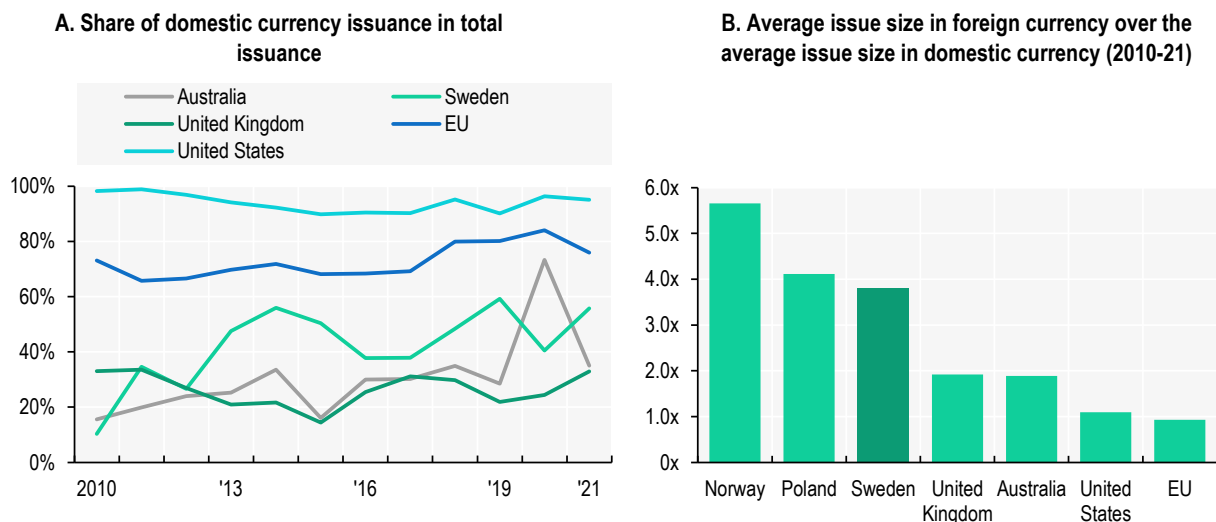


Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

Many companies are active internationally and have revenues in several different currencies, making foreign currency borrowing a useful tool for matching payments and revenues and reducing exchange rate risk exposure. It may also be a strategy for obtaining lower financing costs, as illustrated through the fact that between 2015 to 2017, when US and Euro Area interest rates diverged as the Federal Reserve began tightening monetarily policy while the ECB maintained an expansionary position, US companies issued record levels of euro-denominated debt (8% of total issuance during the period) (Çelik, Demirtaş and Isaksson, 2019^[25]). Companies issuing exclusively in the domestic currency presumably do not have significant foreign operations, and may be known primarily by domestic investors. Panel A below shows the share of domestic currency issuance since 2010. The increase in domestic currency issuance in Sweden shown in Figure 1.6 is clearly visible. Unsurprisingly, companies in the United States (95% in 2021) and the EU (76%) predominantly finance themselves through domestic currencies, given their globally dominant currencies and the significant size of their internal markets. In 2021, 56% of Swedish non-financial bonds by amount were issued in the domestic currency, higher than companies in the UK (which issue significant amounts in both EUR and USD) and Australia (primarily USD).

Panel B shows the average (between 2010-21) foreign currency-denominated issuance as a multiple of the average domestic-currency issuance across countries. A higher multiple indicates a larger difference between average amounts raised in foreign currency and domestic currency. As expected, smaller countries (with smaller capital markets) show higher multiples, suggesting that companies that issue in foreign markets issue larger amounts compared to those issuing domestically. In Sweden, the average foreign-currency denominated bond is 3.8 times larger than the average SEK-denominated bond. In Norway, which has a smaller non-financial corporate bond market than Sweden but a set of very large companies (notably in the energy sector), the multiple is as high as 5.7x.

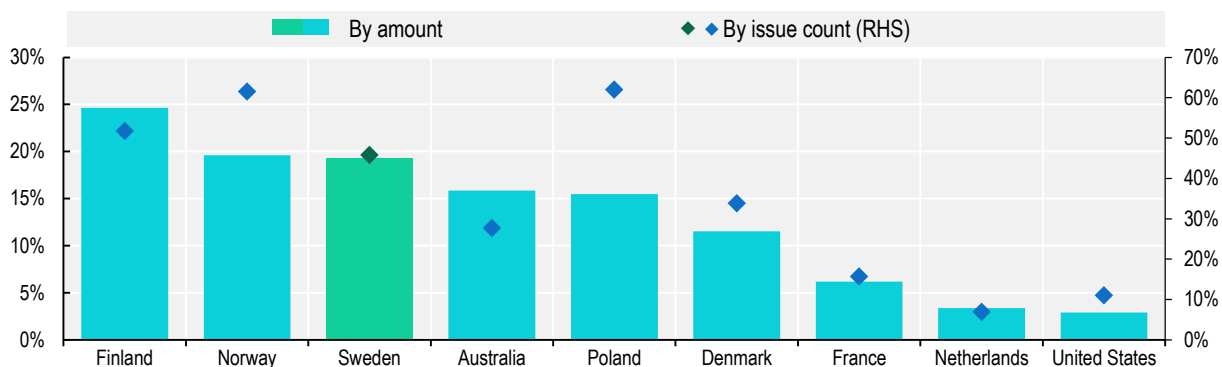
Figure 3.5. Foreign/domestic currency issuance across regions



Note: Foreign issuances within the EU could for example be an EU country outside of the euro zone issuing a bond in euros.
 Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

As discussed in Chapter 1 (and shown in Panel C of Figure 1.3), Sweden has a high share of bonds without credit ratings. As is evident from Figure 3.6, this is true also relative to peer countries. In terms of amounts, Sweden had the third highest share of unrated bonds among peers in the two decades from 2000 to 2021. At 19%, it is three times higher than the share in France and almost six times higher than the share in the Netherlands. The figures are similar when looking at the number of unrated bonds instead (which is generally higher since larger issues are more likely to have credit ratings). In addition, unrated issuers in Sweden include smaller companies as well as large well-known companies (Wollert, 2020_[17]).

Figure 3.6. Share of unrated corporate bonds in total non-financial issuance, 2000-21



Note: Refers to bonds not rated by either S&P, Moody's or Fitch.
 Source: OECD Capital Market Series dataset, Thomson Reuters Datastream, see Annex for details.

Issuing a bond involves a number of costs that can be significant to smaller companies. The issuance cost varies across regions. For example, in the United States the cost is estimated to be around 0.6% of the total proceeds, whereas in Europe the median cost is approximately 0.4% (OECD, 2017_[26]). In addition to the more substantial fees paid to the underwriting bank and other advisors as well as the cost of obtaining a possible credit rating, if bonds are to be listed on an exchange, issuers must also pay listing fees.

Table 3.1 below provides a comparison of the fees charged by the four most common exchanges used by Swedish non-financial companies that list their bonds: Nasdaq Stockholm, Luxembourg, London and Dublin (see also Figure 1.7). The figures are calculated for two different principal amounts, EUR 50 million and EUR 500 million, and assumes a five-year maturity. All fees refer to the full five-year period. Notably, the Stockholm exchange has no registration fees, only annual maintenance fees. The opposite model applies on the London Stock Exchange, which only charges fees at the time of listing but not afterwards. For both a smaller bond with a face value of EUR 50 million and a larger one of EUR 500 million, the Luxembourg exchange charges the lowest fees, although the differences are relatively marginal, especially compared to the London and Stockholm exchanges.

Table 3.1. Cost of listing a bond with maturity of five years, by exchange

EUR	Stockholm	Luxembourg	London	Dublin
Principal: EUR 50m				
Approval fee (one-off)	-	2 750	2 420	4 500
Listing fee (one-off)	-	1 500	6 988	440
Maintenance fee (annual)	10 091	2500	-	15 000
Total (5 years)	10 091	6 750	9 408	19 940
Principal: EUR 500m				
Approval fee (one-off)	-	2 750	2 420	4 500
Listing fee (one-off)	-	1 500	7 260	440
Maintenance fee (annual)	10 091	3500	-	15 000
Total (5 years)	10 091	7 750	9 680	19 940

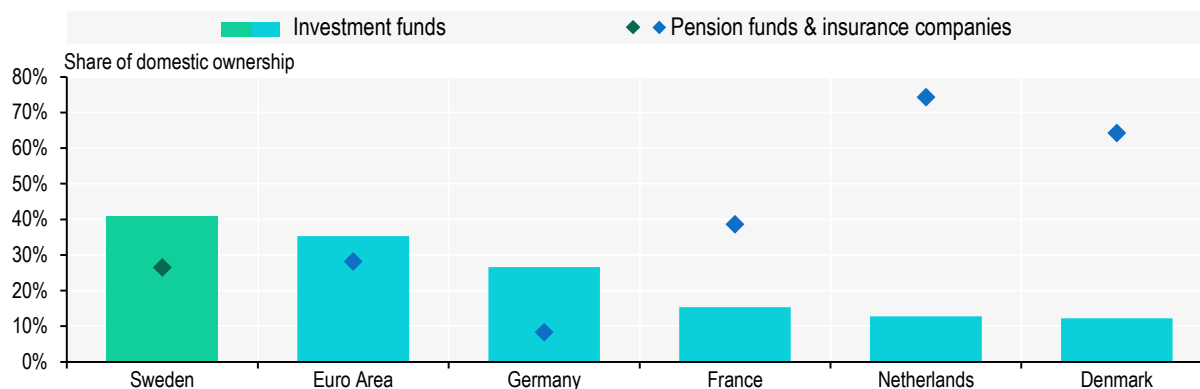
Note: Assumes listing on the Standard/Regulated Tier of each market. Includes approval fees paid to regulators. Excludes VAT. Maturity is assumed to be five years, and costs refer to the full cost over that period. It is assumed that it is the issuer's first bond listing – discounts are sometimes given for subsequent listings. For Euronext Dublin, approval fee includes: Euronext Document Fee and Central Bank of Ireland Document Fee, while listing fee refers to the formal notice fee.

Source: Nasdaq Stockholm, Bourse de Luxembourg, London Stock Exchange and Euronext Dublin.

As noted in Section 1.4, investment funds make up a substantial share of domestic ownership of Swedish corporate bonds. Figure 3.7 below shows that it is also higher than in peer countries, most notably Denmark, the Netherlands and France where levels are about one-third of that in Sweden. That has financial stability implications, because investment funds, most notably open-ended ones, need to trade actively in the secondary market in response to fund in- and outflows. Open-ended corporate bond funds effectively offer short-term liquidity on the basis of mostly illiquid instruments. When the share of total ownership by such funds is high, it exposes the market to significant selling pressure in times of financial turmoil. The regulatory measures taken with respect to investment fund redemptions in response to the COVID-19 crisis discussed under Section 1.8.1 seek to mitigate that risk. Contrarily, long-term investors such as pension funds and insurance companies trade in the secondary market to a much lesser extent, if at all, typically holding bonds to maturity. As also shown in the graph below, the share of such investors is low in Sweden compared to many peers. In the Netherlands, for example, the share is almost three times higher than in Sweden. However, while long-term investors tend to offer more stability, the tool through which they do so – holding until maturity – has detrimental impacts on secondary market liquidity. Nevertheless, the reverse is not necessarily true, i.e. having a large share of active investors in secondary market trading does not necessarily create more liquidity. If active secondary market investors' demand is highly correlated (for example selling in a downturn in response to increased redemptions), the market will be one-sided, with no beneficial effects on liquidity. Indeed, the fact that Sweden has a high share of investment fund investors does not seem to have had any significant positive impact on secondary market liquidity.

It is worth noting that increasing ownership of corporate bonds by open-ended funds is a Euro Area wide trend. Over the past ten years, their corporate bond holdings have increased two and a half times (AMF, 2022^[27]).

Figure 3.7. Domestic ownership of non-financial corporate bonds by investor, end-2021



Note: 2021 data are from ECB Financial Accounts, meaning there may be minor differences compared to Figure 1.13, showing detailed end-2020 data from Statistics Sweden.

Source: ECB.

3.2. Transparency and disclosure rules for corporate bond trading

An important aspect of the functioning of a corporate bond market is the rules that apply with respect to transparency and disclosure. These affect the liquidity and price finding mechanism of the market as well as investor confidence. Transparency rules, when properly functioning, can also help regulators detect potential misconduct and unfair pricing. However, a fine balance needs to be struck to ensure adequate transparency without discouraging dealer intermediation, in particular for illiquid bonds. As discussed under Sections 1.8 and 2.2, the exceptions applicable for these reasons under the MiFIR/D II framework has actually led to a decrease in transparency in the Swedish bond market. In order to put the Swedish and European frameworks into context, this subsection offers an international comparison of how transparency and disclosure rules apply on other bond markets, notably in the United States.

Since different rules typically apply depending on the listing status of a bond, it is useful to first clarify the terminology used. Table 3.2 below provides a summary, in line with IOSCO (2017^[28]). Note that, according to the IOSCO definitions, a bond that is only admitted to trading on a non-exchange trading venue such as an alternative trading system (ATS), an organised trading facility (OTF) or, most notably in Sweden, a multi-lateral trading facility (MTF), is considered *unlisted*, which thus differs from the national understanding of what it means to be “listed”.

There are substantial cross-country differences in transparency and reporting requirements, both in terms of design and application. In addition, there are differences with respect to pre- and post-trade transparency rules (as mentioned in Chapter 1, due to exceptions in MiFIR/D II, all investment firms trading in Swedish bonds are exempt from pre-trade disclosure). For example, for regulatory reasons, most corporate bonds in the EU are listed, while trading is primarily done OTC. However, under MiFIR/D II transparency rules apply based on listing status rather than mode of trading, meaning that any trade – including OTC – in a listed bond is subject to the rules under the MiFIR/D II framework. In the United States and Canada, where most bonds are unlisted and traded OTC, there are elaborate transparency rules applicable to trading in these securities. Listed bonds usually have to comply with the rules set by the exchange on which they are listed (IOSCO, 2017^[28]).

Table 3.2. Terminology – bond types

Status	Description	Possible trading venues
Listed	Bonds listed or admitted to trading on a regulated exchange	<ul style="list-style-type: none"> • Regulated exchange • Non-exchange trading venues (e.g. ATS, MTF or OTF) • OTC
Unlisted	Any bond not listed on a regulated exchange. Includes bonds admitted to non-exchange trading venues.	<ul style="list-style-type: none"> • Non-exchange trading venues (e.g. ATS, MTF or OTF) • OTC

Source: IOSCO (2017^[28]), Regulatory Reporting and Public Transparency in the Secondary Corporate Bond Markets, <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD578.pdf>.

The United States has a particularly developed system for OTC trading called the Trade Reporting and Compliance Engine (TRACE), which has been in place since 2002. TRACE is operated by the Financial Industry Regulatory Authority (FINRA), a self-regulatory organisation authorised by the US Congress to oversee broker-dealer operations.²⁸ All broker-dealer member firms are obliged to report OTC transactions in TRACE-eligible securities under rules approved by the Securities and Exchange Commission (SEC) (FINRA, n.d.^[29]). Through this system, prices and trade volumes are disseminated to market participants in near real time for OTC trading. In addition to intra-day data, the system also provides aggregate trading statistics (e.g. most active bonds, total volume traded, etc.) at the end of each day (at 19.00 Eastern Time). As discussed above, due to their specific characteristics, the impact of increased transparency on the liquidity of corporate bond markets is not entirely clear-cut. For this reason, TRACE was phased in gradually, allowing for a continuous study of its effect on liquidity. In the first years, the reporting window was successively shortened from 75 minutes after a transaction was completed, down to within 15 minutes since early January 2006. The scope of securities was also gradually expanded, initially including primarily large (USD 1 billion or above) bonds with high credit ratings. By early 2005, it had been expanded to cover 99% of all public transactions in eligible securities. After a transaction has been reported, it is immediately disseminated through TRACE. These data are then accessible through all major data vendors and to retail investors on the FINRA website (CFA Institute, 2011^[30]).

Contrary to some expectations, TRACE has not led to a greater concentration in dealers (see discussion on dealer incentives under section 1.80). Dealer activity has instead remained rather high and no significant detrimental effects on dealer-provided liquidity have been observed. More generally, a meta-study of the effect of transparency on liquidity (including other markets and systems than the US and TRACE), found that a majority of studies indicated that higher transparency is at least somewhat beneficial (CFA Institute, 2011^[30]). As discussed in Sections 1.8 and 2.2, despite the intentions of MiFIR/D II regulations to increase transparency in the corporate bond market, the exceptions included in have *de facto* led to less transparency. This experience is not unique to the Swedish market; in a late 2019 survey regarding MiFID II the International Capital Market Association (ICMA) found that a number of challenges remained to be addressed, most notably a continued lack of post-trade transparency even two years after the implementation of the new rules. The report also points out that certain rules on the primary market have led to greater administrative burdens for companies without much benefit, in particular the allocation justification recording (where firms providing placing services to issuers need to keep an audit trail, a non-public written record of the justification for each investor allocation made). Several respondents also indicated that it is difficult to identify whether a counterparty is a systematic internaliser (SI), which is important to know since it has implications for the post-trade reporting requirements for OTC transactions. Finally, the report highlights the difficulty of accessing post-trade data published through Approved Publication Arrangements (APAs), and the fact that many respondent firms consider the vast majority of such data to be unusable due to low quality. However, it bears mentioning that while 60% of respondents in 2019 said price discovery had not improved following the implementation of MiFIR/D II, this was a decrease from 70% in 2018 and almost a third said it had improved somewhat. Further, the regulation has likely been a driver of the observed increase in electronic trade flows (ICMA, 2019^[31]).

In order to contextualise the transparency and disclosure framework in Sweden and the EU, Table 3.3 below provides a comparison between the reporting delays applied under the MiFIR/D II framework and those that apply in a selected number of peer countries, drawing from a comparative study conducted by IOSCO (2017^[28]). The table shows how the rules apply depending on 1) the trading venue (exchange, non-exchange trading venue or OTC) and 2) whether disclosure is pre- or post-trading. Rules for listed and unlisted bonds (in line with the definition given in Table 3.2) are shown separately. Please refer to the notes for an explanation of the symbols used.

It should be noted that while the table shows that the EU rules require near real-time transparency both pre- and post-trade, the many exceptions applicable significantly affect how these rules work in practice, in particular in smaller markets where liquidity is low, as discussed in Sections 1.8 and 2.2. As the table illustrates, many jurisdictions make data available for listed bonds in real-time to the public only against a fee, releasing it for free after a delay (often 15-20 minutes). Self-regulatory organisations (SROs) play an important role on many markets, notably in the United States (FINRA), Korea (KOIFA) and Canada (IIROC), as well as in Japan (JSDA, not shown above).

Before any trading takes place, an important part of the bond issuance process is the allocation of bonds. In order to find a consensus price, the lead manager(s) (the bank(s) mandated to manage the issuance process) will seek to gather a sufficiently large number of possible investors. Consequently, bond issues are often oversubscribed. In response to this, certain investors will inflate their orders so as to receive a larger share of bonds in the allocation process, to the detriment of investors that are constrained by internal rules forbidding them to place orders in excess of what they actually want to invest. The allocation is supposed to be carried out according to rules agreed with the issuer, and lead managers are to keep records of the process. However, the process tends to be less transparent for high-yield bonds (European Commission, 2017^[32]). Under the European Union's MiFIR/D II framework, firms providing placing services to issuers are obliged to keep an audit trail justifying each investor allocation.

Table 3.3. Regulatory reporting in selected jurisdictions

Listed bonds										
	Trading venue									
	Exchange				Non-exchange trading venue				OTC	
	Pre-trade: real time disclosure to...		Post-trade: real-time disclosure to...		Pre-trade: real time disclosure to...		Post-trade: real-time disclosure to...		Dissemination	
	Exchange users	Public	Exchange users	Public	Exchange users	Public	Exchange users	Public	Pre-trade	Post-trade
Australia	✓	✓ _{\$}	✓	✓ _{\$} (20 min)	n/a*	n/a*	n/a*	n/a*	Operates under exchange markets, so real-time just like on exchange	
Canada	✓	✓ _{\$}	✓	✓ _{\$}	✓	✓ _{\$}	✓	✓ _{\$}	n/a	
Korea	✓	✓	✓	✓ _{\$}	n/a	n/a	n/a	n/a	Self-regulatory organisation and information vendors	
Sweden/EU	✓	✓	✓	✓	✓	✓	✓	✓	SIs must make public firm quotes, subject to conditions	Through APAs for bonds admitted to trading
Switzerland	✓	✓ _{\$} (15 min)	✓	✓ _{\$} (15 min)	✗	✗	✗ (T+3)	✗ (T+3)	Exchange Market Data Systems, Market, Data Vendors, Internet	
United States	✓	✓	✓	✓ _{\$}	Depends**	✗	15 min	15 min	TRACE system (FINRA)	

Unlisted bonds						
	Trading venue					
	Non-exchange trading venue				OTC	
	Pre-trade data available to ...		Post-trade data available		Dissemination	
	Exchange	Public	Exchange	Public	Pre-trade	Post-trade
Australia	n/a	n/a	n/a	n/a	n/a	Summary information by trade association
Canada	✓***	✗	✓	✓	n/a	T+2 by self-regulatory organisation
Korea	n/a	n/a	n/a	n/a	✓	Within 15 mins by self-regulatory association
Sweden/EU	✓ (Continuous basis)	✓ (Continuous basis)	✓ (Real-time/close to)	✓ (Real-time/close to)	SIs must make public firm quotes, subject to conditions	Through APAs for bonds admitted to trading
Switzerland	n/a	n/a	n/a	n/a	n/a	n/a
United States					TRACE system (FINRA)	

Note: For listed bonds, real-time data are often made available to the public against a fee. This is indicated by the ✓\$ symbol. Cases where the information is available in real-time for a fee, but made publicly available for free after a certain time period are indicated by ✓\$ (x min), where the brackets indicate the delay before information is made available for free.

* Australia has no alternative market license framework.

** Available in real time if the venue in question maintains an order book or displays quotations.

*** Displayed to users in real time if in an order book and otherwise displayed.

Source: IOSCO (2017^[28]), Regulatory Reporting and Public Transparency in the Secondary Corporate Bond Markets, <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD578.pdf>.

3.3. On-exchange secondary corporate bond markets

Secondary corporate bond trading normally takes place over-the-counter (OTC). This is also true for Sweden, as discussed under Section 1.2. However, in some markets corporate bonds trade on-exchange. In order to provide an example of different trading models, which can help contextualise the OTC trading model, two such cases are presented here, the Israeli and Chilean markets.

3.3.1. The Israeli corporate bond market

In Israel, most corporate bonds are traded on the Tel Aviv Stock Exchange (TASE) rather than OTC. Corporate bonds listed on the exchange are traded in the same manner as other financial instruments such as stocks, and follow the exchange's listing rules and information disclosure requirements. Some research has found that these features of the Israeli corporate bond market encourage retail investors²⁹ to participate more actively in corporate bond trading and contribute to increased liquidity.

In addition to ordinary bonds, structured bonds, bonds that are paid in shares³⁰ and hybrid bonds³¹ are listed and traded on TASE. Table 3.4 summarises the listing rules that companies must follow when listing their bonds on the exchange. A company's post-listing equity shall not be less than NIS 24 million (USD 7.7 million), alternatively post-listing equity shall not be less than NIS 16 million (USD 5.1 million) subject to the issuer having a local bond rating of at least BBB- or Baa3 before the prospectus publication. However, companies can be exempted from these requirements by either having a local rating of A-, A3 or Baa3, or an international rating of BBB-. Companies are also exempted from the equity requirements if the value of the bonds series is at least NIS 200 million (USD 64.3 million) or if the company also trade its shares and the value of all traded securities is at least NIS 200 million. In addition, public holdings shall be at least NIS 36 million (USD 11.5 million) and a bond shall be held by at least 35 investors, each with at

least NIS 200 000 (USD 64 300). Other detailed regulations, such as conditions for early redemption, are set forth in the TASE regulations (TASE, 2022^[33])

Table 3.4. Summary of listing rules

Equity	Equity requirements:		Exemptions to the equity requirements:		
	Alternative A	Alternative B	Alternative A	Alternative B	Alternative C
	Equity of NIS 24 million	Equity of NIS 16 million before the prospectus publication and local rating of BBB- or Baa3	Local rating of A- or A3/Baa3 or BBB- international rating	≥ NIS 200 million value of a bonds series	Company shares are listed on TASE and the value of all traded securities is ≥ NIS 200 million
Public holding	<ul style="list-style-type: none"> • Minimum value of cumulative public holdings in the series of NIS 36 million 				
Holders	<ul style="list-style-type: none"> • At least 35 holders • Holding value of at least NIS 200 000 per holder 				

Source: TASE (2022^[33]), Company Guide, Listing of Securities for Trade, Regulations pursuant of the second part of the TASE rules, https://info.tase.co.il/Eng/about_tase/rulesandregulations/Pages/Companies_L.aspx.

TASE has 24 members, consisting of banks and brokers, who can connect directly to the TASE trading system. An investor, i.e. TASE member clients, can submit orders online and check the status and the order book. Unlike OTC trading, the accessibility and transparency offered by the exchange allows retail investors with small investments to participate in the corporate bond market, which in most countries is accessible only to institutional and qualified investors. Trades are conducted from Sunday through Thursday, just as with shares. The phases of trading are pre-opening, opening, continuous trading, pre-closing, and the closing auction trading phase. TASE also has another platform, TASE UP, which is designed for private companies and does not include the requirement to publish a prospectus when listing securities. On TASE UP companies can list warrants, shares, bonds, convertible bonds and participation units. However, the market is dedicated to accredited and institutional investors.

In terms of market conditions, the number of companies issuing bonds listed on TASE as of end 2021 was 92 and the number of TASE UP companies was 21, for a total of 740 bonds traded on TASE and TASE UP. In 2021 alone, the number of bonds issued to the public was 244 (Table 3.5). Figure 3.8 shows the annual traded volume and the turnover ratio – measured as annual traded volume over market value at the end of the year – of corporate bonds traded on the TASE and on the TASE UP markets. Between 2007 and 2021, the annual traded volume on TASE averaged USD 60 billion. In 2021, the traded volume was USD 56 billion on-exchange, compared to USD 1 billion off-exchange, meaning 98% of the volume traded of corporate bonds took place on-exchange in Israel. The turnover ratio has fluctuated around 50% over the analysed period, and stood at 42% in 2021. This level of liquidity is in line with other markets, such as the European Economic Area where the turnover ratio in 2020 was 46% (ESMA, 2021^[16]). The figure also shows the liquidity of the TASE UP market. Since this market is dedicated to smaller companies, the issuance sizes are smaller and therefore the traded volume is relatively small when compared to the TASE market. In 2021 the traded volume in this market was USD 284 million, with a turnover ratio of 2.9% (TASE, 2022^[34]).

The fact that most of the trading take place on the exchange increases both pre-trade and post-trade transparency. Despite not showing significant differences in terms of liquidity compared to other markets, there may be large differences in terms of spreads. Evidence suggest that corporate bond spreads tend to be narrower in Israel compared to those in the US market. One possible explanation for this is the higher pre-trade transparency on-exchange trading offers compared to OTC trading. Another factor driving lower spreads is the fact that corporate bond trading in Israel is not concentrated in a few brokers, but rather

open to the public or directly offered to qualified investors. Notably, retail investors account for 8.8% of the double-sided volume traded in Israel. In addition, the cost of trading on-exchange is low and the minimum denomination is also lower compared to other markets (Menachem Meni Abudym, 2018^[35]).

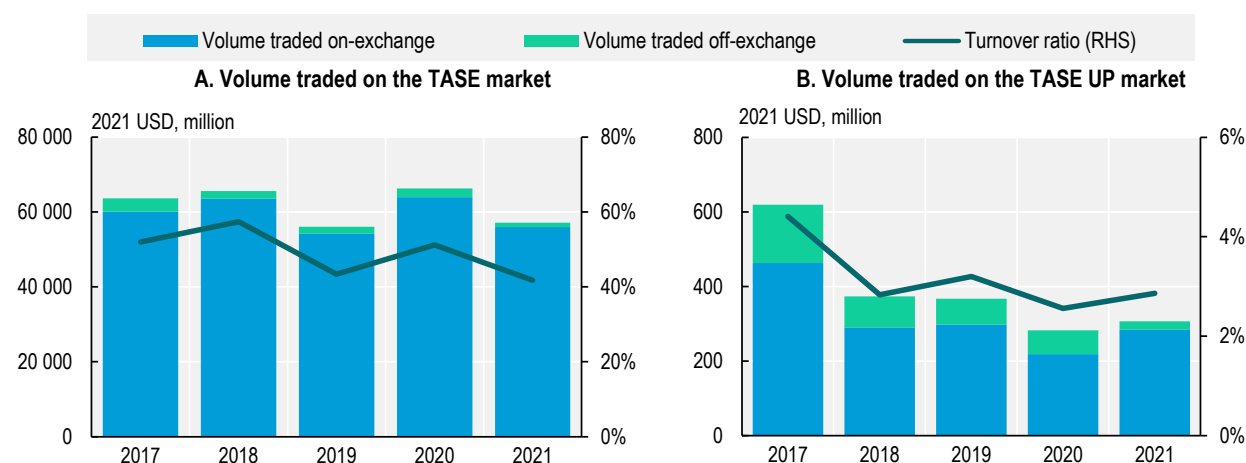
Table 3.5. Indicators of the Israeli corporate bond market in 2021

Indicators	No.
No. companies issuing corporate bonds	92
No. TASE UP companies issuing corporate bonds	21
No. listed bonds	740
No. TASE UP bonds	52
No. issues to public	244
Average daily number of corporate bond transactions	48 376

Note: No. listed companies includes the companies that issue structured bonds. No. listed bonds includes TASE UP bonds and structured bonds.

Source: TASE (2022^[36]), Trading Statistics, <https://info.tase.co.il/Eng/Statistics/TradingStatistics>.

Figure 3.8. The secondary market for corporate bonds in Israel



Source: TASE, IMF, U.S. Bureau of Labor Statistics.

3.3.2. The Chilean corporate bond market

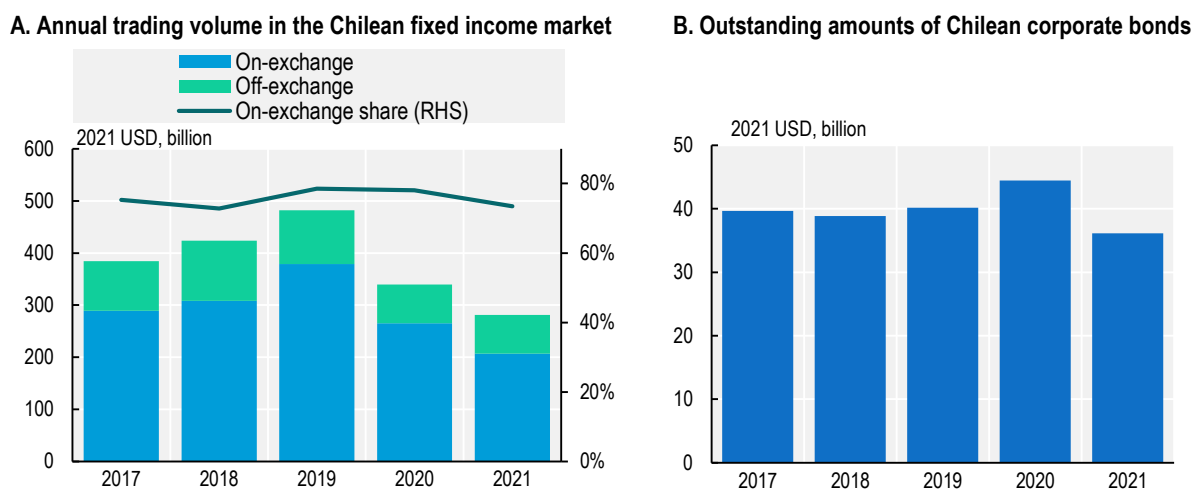
In Chile, the corporate bond market is only accessible to qualified investors. However, contrary to most other corporate bond markets, in addition to OTC trading, bonds trade through the Santiago Stock Exchange (BCS) via two open systems. Instruments such as treasury bonds, central bank bonds, corporate bonds, bank bonds, mortgage notes, securitised bonds, commercial paper and certificates of deposit can be traded on these systems. The first system automatically matches buy and sell orders through a continuous order book (BCS, 2016^[37]). This system, called TELERENTA, matches orders on a given instrument based on price and timing, giving priority to the lowest market-clearing price. The other one, also operated by the exchange, is a periodic English Auction system. This system operates in three phases: in the first one offered instruments are entered into the system, including quantity and interest rate; during the second phase buyers can select the instruments they want to invest in; and during the last phase investors submit their bids. This phase allows bidders to increase the price, in response to which the system automatically adjusts to the new price. While phase 3 is ongoing, new orders with a higher price can always be submitted. If another investor submits a bid offer at higher price, the current price is

changed; if no one offers a higher price before the auction closes, the bidder at the current price wins the auction. Note that each offer is cleared at its specific closing price (differentiated price for each offer).

The Financial Market Commission (CMF) is the supervisory authority for securities issued and traded on the Chilean market. Corporate bond issuers have to register with the CMF and with the BCS for each bond. However, the information requested by the BCS will depend of the type of security and issuer. Issuers registered with the CMF whose corporate bonds are already traded on the exchange are required to submit the same information requested by the CMF for the registration process. Issuers are also required to submit on a continuous basis all the information requested by the regulator following the same deadlines. In addition, issuers must submit additional information requested by the stock exchange board (BCS, 2022^[38]).

Figure 3.9 looks at the secondary market for fixed income in Chile and shows that there has been a downward trend in the traded volume, with on-exchange trading falling from USD 379 billion in 2019 to USD 207 billion in 2021. On-exchange transactions make up the lion's share of trading, accounting for 73% of all traded volume in 2021. Traded volume is not reported broken down by instrument type, so the reported traded volume includes not only corporate bonds but also other financial instruments such as treasury and central bank bonds. By the end of 2021 there were 168 companies with outstanding corporate bonds, up from 126 in 2017. The outstanding amount of corporate bonds in 2021 was USD 36 billion (BCS, 2021^[39]).

Figure 3.9. The Chilean fixed-income market



Note: The data collected in Chilean Pesos were converted to USD and adjusted by 2021 US Consumer Price Index. Due to lack of disaggregated data, Panel B includes financial companies.

Source: BCS, CMF, IMF, U.S. Bureau of Labor Statistics.

The main investors in corporate bonds are pension funds and insurance companies (Miranda, 2018^[40]). Looking at the actual holdings of corporate bonds (excluding bonds issued by banks), pension funds held approximately USD 12.3 billion in corporate bonds by the end of 2021 (SP, 2021^[41]) and life insurance companies held another USD 21 billion by the end of 2020 (CMF, 2022^[42]). Notably, pension funds in Chile are required to trade on the exchange, which has been a large driver of the development of on-exchange trading (IOSCO, 2011^[43]).

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Annex A. Methodology for data collection and classification

Corporate bond data

Data presented on corporate bond issuances are based on OECD calculations using data obtained from Thomson Reuters Eikon that provides international deal-level data on new issues of corporate bonds that are underwritten by an investment bank. The database provides a detailed set of information for each corporate bond issue, including the identity, nationality and sector of the issuer; the type, interest rate structure, maturity date and rating category of the bond, the amount of and use of proceeds obtained from the issue.

Convertible bonds, deals that were registered but not consummated, preferred shares, sukuk bonds, bonds with an original maturity less than or equal to one year or an issue size less than USD 1 million are excluded from the dataset. The analyses in the report are limited to bond issues by non-financial companies. The industry classification is carried out based on Thomson Reuters Business Classification (TRBC). First-level industry groups (TRBC Economic Sector) are used for all analyses except for those involving real estate companies. These companies are included in the financials first-level group, so to identify them a second-level industry group (TRBC Industry Group) is used. Only companies classified as active within real estate operations are included. REITs are excluded. The country breakdown is carried out based on the issuer's country of domicile. Yearly issuance amounts initially collected in USD were adjusted by 2020 US Consumer Price Index (CPI). Information provided in monthly frequency is collected and presented in USD.

Given that a significant portion of bonds are issued internationally, it is not possible to assign such issues to a certain country of issue. For this reason, the country breakdown is carried out based on the country of domicile of the issuer. The advanced/emerging market classification is based on IMF country classification.

Rating data

Thomson Reuters Eikon provides rating information from three leading rating agencies: S&P, Fitch and Moody's. For each bond that has rating information in the dataset, a value of 1 to the lowest credit quality rating (C) and 21 to the highest credit quality rating (AAA for S&P and Fitch and Aaa for Moody's) is assigned. There are 11 non-investment grade categories: five from C (C to CCC+); and six from B (B- to BB+). There are ten investment grade categories: three from B (BBB- to BBB+); and seven from A (A- to AAA).

If ratings from multiple rating agencies are available for a given issue, their average is used. Some issues in the dataset, on the other hand, do not have rating information available. For such issues, the average rating of all bonds issued by the same issuer in the same year (t) is assigned. If the issuer has no rated bonds in year t, year t-1 and year t-2 are also considered, respectively. This procedure increases the number of rated bonds in the dataset and hence improves the representativeness of rating-based analyses. When differentiating between investment and non-investment grade bonds, the final rating is rounded to the closest integer and issues with a rounded rating less than or equal to 11 are classified as non-investment grade.

Early redemption data

When calculating the outstanding amount of corporate bonds in a given year, issues that are no longer outstanding due to being redeemed earlier than their maturity should also be deducted. The early redemption data are obtained from Thomson Reuters Eikon and cover bonds that have been redeemed early due to being repaid via final default distribution, called, liquidated, put or repurchased. The early redemption data are merged with the primary corporate bond market data via international securities identification numbers (i.e. ISINs).

Covenant data

Covenant data are collected from Thomson Reuters Eikon. The Eikon screen provides different flags indicating whether or not the instrument in question has a certain type of covenant. The below flags were collected for all available Swedish bonds. Their descriptions, as provided by Thomson Reuters Eikon, are included.

- *Collective Action Clauses flag*: A yes/no (y/n) flag indicating whether the bond includes Collective Action Clauses (examples: LATAM global issues or Model CAC introduced on 1 January 2013 for all Eurozone Government bond issuance). A collective action clause allows a supermajority of bondholders to agree to a debt restructuring that is legally binding on all holders of the bond, including those who vote against the restructuring.
- *Force Majeure flag*: A y/n flag indicating if the offering document of the debt instrument contains events that constitute 'events of defaults'. Force majeure events are usually defined as certain acts, events or circumstances beyond the control of the parties, for example, natural disasters or the outbreak of hostilities. A force majeure clause typically excuses one or both parties from performance of the contract in some way following the occurrence of such events. Its underlying principle is that on the occurrence of certain events which are outside a party's control, that party is excused from, or entitled to suspend performance of all or part of its obligations. That party will not be liable for its failure to perform the obligations, in accordance with the clause.
- *Negative Pledge flag*: A y/n flag indicating that the issuer would not issue another bond of the same type in the future that would have a higher priority in case the issuer defaults.
- *Sale Leaseback flag*: A y/n flag where a 'y' means the issuer may not, and may not permit any (restricted) subsidiary to, enter into any sale and leaseback transaction, subject to exceptions.
- *Change of Control Put flag*: A y/n flag indicating whether there is a provision in the indenture or agreement that allows investors to put the asset, if there are specified changes in ownership control of the entity responsible for the servicing of the debt.
- *Pari Passu flag*: A y/n flag indicating that a debt instrument carries the same degree of ranking without any preference among other debt securities with similar ranking.
- *Merger flag*: A y/n flag indicating where 'y' would mean that the issuer may not consolidate or merge with or wind up into, or sell, assign, transfer, lease, convey or otherwise dispose of all or substantially all of its properties or assets in one or more related transactions, to any person or entities.
- *Default Events flag*: A y/n flag indicating if the parties are freed from their obligations in the event of an act of God (flooding, hurricanes, etc.). For example, if the Issuer loses all of their assets in an earthquake rendering them unable to pay back investors.
- *Sale of Assets flag*: A y/n flag indicating if the issuer is prohibited from sale of assets which would cause the issuer to cease to exist or which could reduce the creditworthiness of the issuer.
- *Keepwell Agreement flag*: A y/n flag indicating if the instrument is backed by a keep-well agreement between the issuer and another entity, most often the parent of the issuer. A keep-well agreement

is not an explicit guarantee, but benefits from the agreement provider in case of insolvency of the issuer.

- *Cross Default flag*: A y/n flag indicating if the issuer or guarantor or parent defaults on any of its debt instruments and the default continues beyond the grace period, then such event shall constitute a default on all of its debt instruments, which have equal priority of payment.
- *Debt Incurrence Limitation flag*: A y/n flag where 'y' means the issuer will not, and will not permit any of its (restricted) subsidiaries to incur any indebtedness except permitted indebtedness, if any.

Consultations

During the spring of 2022, the OECD carried out fact-finding missions where the team conducted consultations with representatives of both government institutions and high-level market participants, including the Swedish Riksbank, the Swedish Financial Supervisory Authority (Finansinspektionen), Nasdaq Stockholm, leading legal and financial advisors, as well as banks, issuers and trustees (in total around 40 experts). The experts offered their insights on the developments, strengths and weaknesses of the Swedish corporate bond market, and in many cases offered comments on a draft working version of this report. The results of the consultations have benefited the report greatly. The team gratefully acknowledges these important contributions.

Notes

¹ Note that in the corresponding Swedish financial accounts reported by the ECB, intercompany loans are not reflected separately and are fully considered within the long-term loans category.

² These figures are based on transactions involving US companies.

³ The spike in 2015 is driven by a series of large issuances maturing in 2077 and 2078 by state-owned power company Vattenfall.

⁴ There were a number of sizeable domestic currency denominated bonds issued in 2007 and 2008, notably by manufacturing company Scania and state-owned power company Vattenfall.

⁵ Notable USD denominated issues (>USD 500 million) without listing include Ellevio (2016), Atlas Copco (2007) and Stena (2014).

⁶ In practice, the incentives of the trustee to conduct any significant covenant compliance due diligence is rather weak, owing to a fixed fee structure and potential professional liability concerns. Their tasks are therefore often limited to administrative procedures. See e.g. (Çelik, Demirtaş and Isaksson, 2015_[14]) for a more thorough review.

⁷ See Finish law 25.8.2017/574, and the regulation pertaining to the “repræsentant” in Danish law LBK nr 1 229 af 07 September 2016.

⁸ These requirements normally do not apply to investment firms trading only bilaterally. However, for so-called systematic internalisers (executing orders against their own books), it is mandatory to quote bids and offers. Such trading has increased since 2018, with corresponding reductions in OTC trading.

⁹ The survey includes market participants dealing in government bonds and covered bonds, in addition to corporate bonds.

¹⁰ An OTF is an Organised Trading Facility. MiFID II introduced OTFs as a new trading venue category, a multilateral system in which multiple third-party buying and selling interests in bonds, structured finance product, emissions allowances or derivatives are able to interact. An OTF is neither a regulated market (RM) nor a multilateral trading facility (MTF).

¹¹ April and September: Verisure; June: Ellevio (two bonds); September: Volvo Cars.

¹² The FSA calls this “adjusted sale and redemption price”, a method whereby the price of the fund units is adjusted up or down depending on net flows. Another type of swing pricing, which it calls “adjusted net asset value”, involves adjusting the value of the fund, which is not allowed in current fund-related legislation.

¹³ This share differs from that shown in the central bank’s staff memo (Wollert, 2020_[17]). This is due to the following differences in methodology: 1) the central bank’s figures refer only to outstanding bonds issued in the domestic currency, while the present report also includes bond issued in foreign currency; and 2) possible differences in the industry classification used.

¹⁴ Throughout this subsection, “total issuance/outstanding amounts” refer to the sum of issuance/outstanding bonds by non-financial companies and real estate companies.

¹⁵ Supplemented by the Commission’s delegated regulations 2019/980 and 2019/979.

¹⁶ Reason 7 in the preamble.

¹⁷ See FI-tillsyn no. 15, 17 October 2019 p. 5-6 (in Swedish only).

¹⁸ See FI-tillsyn no. 15, 17 October 2019 p. 7 (in Swedish only).

¹⁹ See FI-tillsyn no. 15, 17 October 2019 p. 9 (in Swedish only).

²⁰ See FI-tillsyn no. 15, 17 October 2019 p. 13 (in Swedish only).

²¹ See The Swedish Securities Markets Association's recommendation regarding transparency on the Swedish bond market of 2020, available at: <https://svenskvardepappersmarknad.se/wp-content/uploads/2020/11/SSMA-Recommendation-on-bond-market-transparency-Nov-2020.pdf>

²² See preparatory work 2006/07:65 p. 336.

²³ See for instance the two major commentaries in English MAR, Marco Ventoruzzo & Sebastian Mock (2022), *Market Abuse Regulation: Commentary and Annotated Guide*, Oxford University Press, and Susanne Kalss, Martin Oppitz, Ulrich Torggler & Martin Winner (2021), *EU Market Abuse Regulation: A Commentary on Regulation (EU) No 596/2014*, Edward Elgar Publishing.

²⁴ See Andreasson & Lidman, *Transparens och likabehandling på företagsobligationsmarknaden*, *Nordisk Tidsskrift för Selskabsret*, no. 2 of 2022, p. 69.

²⁵ See preparatory work 2006/08:65.

²⁶ Depending on their relevance to the particular area discussed as well as on data availability, the peer countries used for comparison may differ.

²⁷ When including real estate companies in this analysis, that becomes the dominant sector in Sweden from 2011-21, but the top issuer's share in total issuance does not change much (35%). The top industry does not change for any other country.

²⁸ FINRA was previously known as the National Association of Securities Dealers (NASD).

²⁹ Menachem Meni Abudym, 2018, defined Retail Investor as a low-volume investor with less than NIS 2 million (USD 559 000) in all TASE securities excluding options. The same definition is used here.

³⁰ A company whose shares are included in the TA-125 index may decide, in the terms and conditions of its bonds, that the redemption and/or the interest payment may be paid in its shares in addition to cash.

³¹ Hybrid bonds are long-term bonds for which interest payments may be deferred by the issuing corporation for a period of up to six years without such action being treated as a default (TASE, 2019^[44]).

The Swedish Corporate Bond Market and Bondholder Rights

This report provides a detailed account of the Swedish corporate bond market. Based on original data, it offers an overview of how the market has developed in the past two decades with respect to, among other things, size, issuer characteristics, risk profile and liquidity. In particular, it documents how the market has changed since the 2008 financial crisis and explores the increasingly important role of real estate companies in the local bond market. It also offers a comparison of the Swedish market with selected peer countries (European and non-European), both in terms of market structure and relevant regulation.

