Coronavirus pandemic: The Riksbank's measures and financial developments during spring and summer 2020

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The coronavirus pandemic caused a severe and synchronised downturn in economic activity during spring 2020. Many companies were hit hard when societies around the world changed their behaviour and restrictions were introduced to reduce the spread of infection. Investors then rapidly went in search of safer assets, which caused asset prices around the world to fall rapidly. Governments and central banks began to conduct very expansionary economic policy to help households and companies to cope with the decline in economic activity. The Riksbank's measures consisted mainly of providing liquidity support to the banks and purchasing financial assets. In this way it wanted to safeguard the banks' role as supplier of credit, to alleviate frictions in important financial markets and ensure a smooth transmission from policy rate to loan rates for households and companies. The measures taken in Sweden and abroad were sufficiently powerful to turn around developments in the financial markets and avoid an even more severe recession. In this article, we describe the measures taken by the Riksbank to counteract the effects of the pandemic on the economy, the sequence of events on the financial markets during spring and summer 2020 and how lending to households and companies developed.

1 Pandemic creates turmoil in the financial markets

Towards the end of February 2020, it became clear that the novel coronavirus had spread from China to several countries in Europe and to the United States. As it continued to spread rapidly, the WHO declared on March 11 that the illness COVID-19 was a pandemic. This caused unease among many households and companies, and affected their behaviour.[1] The increased spread of infection also meant that governments in many countries introduced different types of restrictions, including travel bans, quarantines, bans on large gatherings and curfews. The restrictions and changes in behaviour affected the real economy in several ways. For example, demand fell substantially when the number of trips and hotel and restaurant visits plummeted. The lower activity in the world economy also led to a decline in world trade, which had a major impact on small open economies like Sweden. Negative effects also arose through a shortage of input goods in production, and considerable sickness

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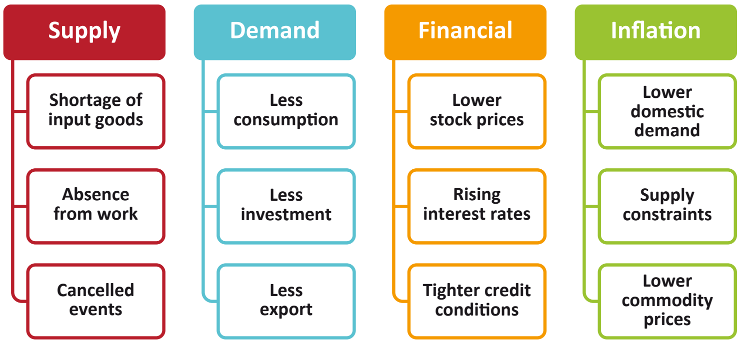
1 For example, people were afraid of being infected and therefore avoided large gatherings of people to a great extent, for instance in shops and restaurants.

absence among employees. Many events were cancelled, partly due to the lack of travel and limits on the size gatherings in public places. A number of companies were hit hard by this, especially those linked to tourism. The most vulnerable were small and medium-sized enterprises, which had less scope to manage the heavy fall in demand. In a very short space of time, a large share of companies' revenue disappeared, at the same time as they also still needed to cover their fixed costs. The situation soon became critical for the companies that lacked the possibility to cover their costs with their own funds, new bank loans or additional market funding.

All in all, this development risked tangibly dampening inflation when, in particular, demand, but also supply, fell heavily.[2] There was also a risk that more long-term effects of the crisis would entail more lasting low inflation. Figure 1 shows how the pandemic affected the global economy through different channels during the more intensive phase of the crisis.

Figure 1. How the coronavirus pandemic affected the economy



When it became clear that a pandemic could not be prevented, unease on the financial markets escalated and investors quickly began to seek safer assets. This led to stock markets plummeting and risk premia on credit instruments rising rapidly. The developments in Sweden is reflected in the Riksbank's index for financial conditions. This shows a rapid shift over the course of around one month, from expansionary financial conditions in February, to clearly tighter conditions in March (see Figure 2).[3] The vulnerable situation for companies during the crisis, and unwillingness among investors to hold risky assets meant that risk premia rose sharply and companies found it much more difficult to finance themselves by issuing commercial paper and corporate bonds. Parallel to this development, both Swedish and foreign banks risked tougher and more expensive funding conditions. Large outflows from certain US money market funds contributed to demand for commercial paper declining substantially.[4] This meant that Swedish banks experienced increasing difficulties securing their short-term funding and meeting their customers' needs of foreign currency. At the same time, there was a decline in demand from investors for the Swedish banks' more long-term debt instruments, which largely consist of bonds with mortgages as collateral; so-called covered bonds.

The Government and the Riksbank took historically extensive measures during spring 2020, as did other governments and central banks around the world. During the most turbulent stage of the crisis, there was a risk that the situation would develop into a financial

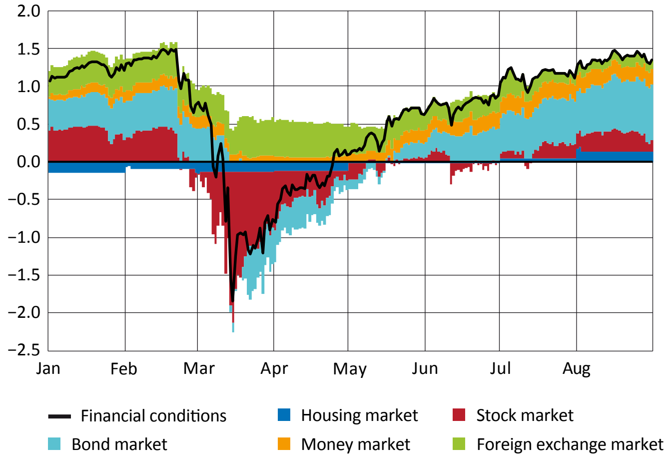
2 Given the assessment that the dampening effects on inflation of a very rapid fall in demand, would outweigh the positive effects on inflation of the lower supply in the economy, inflation in Sweden was expected to be lower in the coming years and it was expected to take longer for inflation to reach the target of 2 per cent more lastingly. See Sveriges Riksbank (2020g).

3 For details regarding the construction of the index, see Alsterlind et al. (2020). The index we show here, unlike the index in Alsterlind et al. (2020), also takes into account the corporate bond market.

4 In the United States, it was the so-called Prime Money Market Funds, which invest in short-term securities issued by banks and companies, that experienced large outflows. The money market funds that primarily invest in government securities instead experienced major inflows over the period.

crisis. If this had happened, the banks could have been forced to substantially tighten credit to households and companies, resulting in an even more severe downturn in economic activity. Such a development could quickly turn into a long-lasting recession, which would have an even greater impact on employees, companies and investors.

Figure 2. Index for financial conditions in Sweden
Standard deviations



Note. A higher value indicates more expansionary financial conditions. The coloured columns show the contributions of the different sub-markets to the index.
Source: The Riksbank

In this article we describe what happened on the financial markets in spring and summer 2020. We focus in particular on the most acute phase of the crisis in March. Further, we describe and discuss the measures taken by the Riksbank and follow up how lending to companies and households developed during the spring and summer. However, we only briefly discuss the measures taken by foreign governments, central banks and the Swedish Government to alleviate the economic consequences of the pandemic. This does not in any way mean that these measures were less important. On the contrary, it is important to have these measures in mind, as in many cases they addressed similar problems. For examples the powerful measures taken by the European Central Bank and the Federal Reserve were most likely crucial in turning around the negative development on the financial markets, and in Sweden the Government took extensive measures to counteract the acute liquidity shortage among many companies. This of course affected the companies' need for loans to survive the crisis.

In the next section we discuss in general terms the problems identified by the Riksbank on the basis of its mandate and the measures taken. In the subsequent section we provide a detailed account of what happened on the financial markets prior to the outbreak of the crisis in February until August. In the fourth section we follow up the development of lending to companies and households, and we conclude with a summary in the fifth section.

2 The Riksbank took many, and far-reaching, measures

The crisis was complex, as the pandemic caused disruptions in both demand and supply. Companies were hit particularly hard and in many cases needed to take out larger loans to survive the crisis.[5] However, the major uncertainty on the financial markets also created problems for the banks. In the middle of March, the Riksbank and many analysts were concerned that the banks would substantially reduce their lending, which would have had

5 Companies refers to non-financial companies throughout this article.

very negative effects on economic activity. In this type of scenario, demand would remain at a lower level for a long time, and ultimately it would have hampered the Riksbank's capacity to meet the inflation target.

The problems the Riksbank identified and considered it could address can be roughly summarised as:

i. many companies suffered substantial liquidity problems, despite being fundamentally robust when demand collapsed
ii. interest rates charged to companies and households risked increasing
iii. companies risked facing more difficulties funding themselves, partly because the markets for commercial paper and corporate bonds were functioning poorly.[6]

The Riksbank therefore took measures to promote the supply of credit and retain the low interest rates on both bank loans and market financing. In Table 1 we summarise the Riksbank's measures during the period from March to the end of August 2020.[7]

6 For a more detailed discussion, see for instance Sveriges Riksbank (2020f).

7 After August 2020 the Riksbank has expanded/extended the measures taken. On 15 September, the Riksbank decided to continue offering loans in USD to the banks up until 30 March 2021. A decision was taken at the monetary policy meeting in November 2020 to extend the Riksbank's asset purchase programme until 31 December 2021 and to expand the envelope for the purchases to SEK 700 billion. The asset purchases were extended to also cover purchases of treasury bills. Moreover, with effect from January 2021, the Riksbank decided with regard to its corporate bonds purchases to only offer to purchase bonds issued by companies deemed to comply with international standards and norms for sustainability, For more information, see Sveriges Riksbank (2020h).

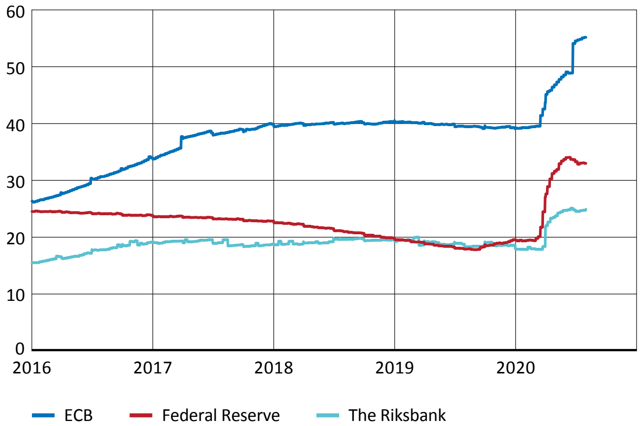
Table 1. The Riksbank's measures during March–August 2020

Measure	Scope	Used up to the end of August	Details
Loans to the banks for onward lending to companies	Up to SEK 500 billion	164.5 billion, of which 145.5 billion in March–April	First decision on 12 March. Initiated 20 March. Initial maturity up to 2 years. Decision on temporary enlargement of eligible counterparties on 26 March. Extended to also cover sole proprietors on 6 April. On 30 June the maturity was extended to up to 4 years, and the interest rate supplement payable if the requirement for onward lending to companies was not met, was cut from 0.20 to 0.10 percentage points above the repo rate.
Envelope for the Riksbank's asset purchases	Up to SEK 500 billion	Purchases: 193 billion, of which 68.4 billion in March–April	First decision on 16 March. Purchase programme extended on 27 March, 27 April, 15 May and 30 June. Programme runs until 30 June 2021. The envelope was expanded from 300 billion to 500 billion on 30 June.
Within the envelope: Purchases of government bonds, municipal bonds and covered bonds		Purchases: 181.5 billion, of which 31.5 billion government bonds, 25 billion municipal bonds and 125 billion covered bonds.	Purchases of government bonds were initiated on 18 March. Purchases of covered bonds began on 25 March. Purchases of municipal bonds were initiated 28 April.
Within the envelope: Purchases of commercial paper	Purchases of commercial paper up to a maximum holding of SEK 32 billion until 31 Dec 2020 and purchases of corporate bonds for SEK 10 billion to 30 June 2021.	Purchases of commercial paper: 11.5 billion and holdings of commercial paper at the end of August: 2.6 billion	First decision on 19 March. Purchases of commercial paper were initiated on 2 April. Decisions to extend the programme on 3 April and 8 May. Purchases of corporate bonds were initiated on 14 September.
Lowered interest rate in lending facility	Cut in two stages from 0.75 to 0.10 percentage points above the repo rate (establishing a symmetric interest rate corridor around the Riksbank's repo rate)		Decisions on 16 March and 30 June.
Weekly market operations at longer maturities in kronor	Unlimited	29 billion, of which 23 billion in March–April	First decision on 16 March. Loans against collateral with a maturity of 3 months. On 30 June the supplement to the repo rate of 0.20 percentage points from these credits was removed and the Riksbank also decided to offer loans with a maturity of 6 months within the same envelope.
Eased collateral requirements when borrowing from the Riksbank	Waive the special limit rules regarding covered bonds up to 30 December 2024.		Decision on 19 March.
Loans to banks in US dollars	Up to USD 60 billion	USD 2 billion, of which USD 2 billion in March–April	Decision on 19 March.

Note. Municipal bonds refers to bonds issued by Swedish municipalities, regions and Kommuninvest i Sverige AB. All of the bases for the decisions on various measures can be found on the Riksbank's website: https://www.riksbank.se/en-gb/press-and-published/updates-on-the-riksbank-and-the-coronavirus-pandemic/the-riksbanks-measures-in-connection-with-the-corona-pandemic/
Source: The Riksbank

In many countries where the policy rate was clearly positive, central banks cut the rate to keep interest rates low and thereby reduce costs for households and companies. In Sweden, however, the repo rate was already at zero, so there was limited scope to cut the rate. A lower policy rate would probably also have been less effective in this situation. Under normal circumstances, a lower interest rate can be expected to stimulate, for instance, household consumption, but during the pandemic the recommendations from authorities and others restricted normal consumption behaviour.[8] Like many other central banks, the Riksbank therefore, in addition to various forms of liquidity support to the banks, began to buy various types of financial asset to a greater extent than before to meet the challenges of the crisis. This made the Riksbank's balance sheet grow significantly during the period February to August, and its balance sheet total increased from around 18 to 27 per cent of GDP (see Figure 3).

Figure 3. The Riksbank's and other central banks' balance sheet totals
Per cent of annual GDP



Note. Annual GDP is calculated as a total of the present quarter and the three previous quarters. For observations after 30 June 2020, annual GDP is the total of GDP for the third quarter of 2019 up to and including the second quarter of 2020.
Sources: Macrobond and the Riksbank

2.1 Liquidity support to the banks to safeguard the supply of credit to companies

An important starting point for the Riksbank's crisis management was to maintain the possibilities for the banks to lend money to households and companies at low interest rates. The banks' capacity to lend money is affected to a large degree by how and at what price they can finance the lending. Since the global financial crisis, various requirements have been tightened with regard to the banks' capital and liquidity and the banks thus were better equipped to manage the disruptions arising during the pandemic. At the same time, developments on the financial markets were very uncertain in March, and there was a clear risk that the banks would tighten their credit terms and reduce their lending. To ensure that the banks had a lasting reliable and cheap source of financing, the Riksbank therefore offered to lend SEK to the banks that they could lend to companies. This measure meant that the banks did not need to rely on market funding and deposits to the same extent during a period of stressed market conditions.

8 There were also arguments against cutting the policy rate below zero again. If negative interest rates were perceived as a more permanent condition, there was a risk that the banks would introduce negative deposit rates for households and that households would react by making substantial withdrawals. This could in turn lead to liquidity problems for the banks, as the deposits are an important part of their funding. See Sveriges Riksbank (2019).

The lending programme to the banks for onward lending to companies could be regarded as an insurance for a smoothly-functioning credit supply. This made it possible to provide support to the banks' lending, but also held down their financing costs and contributed to lower final interest rates to companies.

Moreover, the major Swedish banks are dependent on the international credit markets, partly because their short-term financing is largely in US dollars. During the acute phase of the crisis, global demand for US dollars increased rapidly. This made it more difficult for both Swedish and foreign banks to fund themselves. The Federal Reserve signed swap agreements with several other central banks, including the Riksbank, as a means of increasing liquidity in the dollar market.[9] This agreement meant, in brief, that the Riksbank and the Federal Reserve could swap their respective currencies with one another during a period of time and then swap them back for some interest cost to the Riksbank. The arrangement provided the Riksbank with greater capacity to supply Swedish banks with large volumes of USD if needed. This enabled the banks to continue supplying Swedish agents' demand for USD and that there was good access to dollars in the event the situation were to worsen.[10] At the same time, the Federal Reserve's powerful and more widespread measures calmed the unease on the global dollar markets.

In addition to the lending to the banks, the Riksbank also implemented a number of supplementary measures to facilitate the banks' funding situation (see Table 1). These included weekly market operations at longer maturities, amendments to the overnight interest terms in the lending facility and amendments to regulations to increase the flexibility regarding the collateral the banks could use when borrowing from the Riksbank. The number of counterparties for the Riksbank's transactions was also expanded to broaden the impact of the loan programme to the banks for onward lending to companies.

2.2 Broad and targeted asset purchases to keep interest rates low

The monetary policy discussion and academic literature usually differentiate between two types of asset purchase made by central banks. They can purchase assets to make monetary policy more expansionary. This is often called quantitative easing. But they can also purchase assets to manage frictions on specific markets. This is called credit easing.[11] We will largely follow this division, but to clarify the purpose of the different purchases, we will instead refer to them as broad or targeted.

By broad purchases we mean asset purchases that are largely aimed at lowering or counteracting increases in the general interest rate level. By targeted purchases we mean primarily purchases aimed at lowering or counteracting upturns in risk premia on a specific market.[12] When many investors on a market want to sell assets, for example because the risk is assessed to have increased, risk premia on these assets will rise. Then the price falls and the interest rate rises. By making purchases on such a market, the Riksbank can hold down risk premia and interest rates and thereby make it easier for issuers on the market to issue new paper. More generally, the targeted purchases are thus aimed at maintaining the transmission from the repo rate to the market rates that the issuers meet on specific markets.

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9 For a more detailed discussion of the Riksbank's swap agreement with the Federal Reserve, see Gislén et al. (2021).

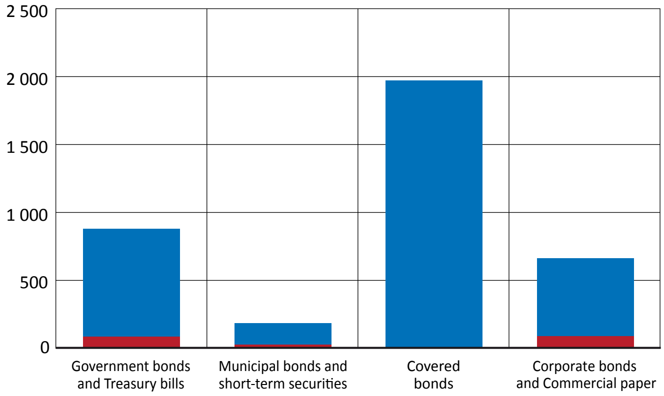
10 For a more in-depth discussion of the banks' short-term funding and its interaction with the need for foreign currency among, for instance, insurance companies and pension funds, see the article 'The interconnectedness of insurance firms, National Pension Insurance Funds and banks via the foreign exchange market' in Sveriges Riksbank (2020c).

11 See D'Amico and Kaminska (2019) and Armelius et al. (2020).

12 It is assumed that the risk premiums for a specific bond can be summarised by the spread between the bond in question and a corresponding government bond. In addition, there are forward premiums, which compensate the investors for the risks linked to the bond's maturity.

The Riksbank's asset purchases included both broad and targeted purchases during the spring and summer. The purchases gradually came to include government bonds, municipal bonds, covered bonds, commercial paper and corporate bonds. Figure 4 contains a review of the outstanding volumes of short- and long-term securities denominated in SEK in August 2020.

Figure 4. Outstanding nominal volume of short- and long-term securities denominated in SEK in August 2020
SEK billion



Note. The blue field refers to long-term securities (bonds) and the red field refers to short-term securities (treasury bills, municipal short-term securities and commercial paper).
Sources: Statistics Sweden and the Riksbank

When the asset purchases were announced in March 2020, the financial conditions in the Swedish economy had rapidly tightened (see Figure 2). As inflation was already below the target prior to the pandemic, the Riksbank had clear motives for maintaining an expansionary direction for monetary policy.

Purchases of government bonds and municipal bonds

The Riksbank purchased government bonds primarily to affect the rates on government bonds and in this way lower long-term interest rates in the economy in general – or prevent them from rising.[13] These purchases may thus be characterised as broad. Put simply, they have an impact through two channels. First, they can affect expectations of future short-term rates according to the so-called expectations hypothesis. Second, they can affect the term premium that investors receive as compensation for the risk a longer time to maturity entails: what is known as the term risk.[14] According to the primary channel, the outstanding volume of bonds available for trading in the secondary market declines, and the volume of term risk that can be invested in therefore also declines. This means that the term premium falls, as investors cannot demand the same premium for holding the term risk when the supply has declined. According to the secondary channel, the purchases contribute to reinforcing the signal that the repo rate will be low going forward, which means that the market participants' expectations of future short-term interest rates fall.[15]

13 The Riksbank's purchases of government bonds can also contribute to lowering interest rates with short maturities. In the repo market, government bonds are used as collateral when participants borrow money from one another at short maturities. The Riksbank's purchases mean that the volume of available government bonds, and thereby the volume of collateral, declines. This entails a reduced pressure to borrow money on the repo market, which pushes down interest rates. However, the Swedish National Debt Office's repo facility, where they offer to lend money at the repo rate minus 0.40 percentage points, sets a lower bound for the rates in the repo market. It is also at this level that these interest rates have remained for some years now, just after the Riksbank began its purchases of government bonds in 2015.

14 Term risk refers mainly to the risk that the expected short-term rates will change, and thereby the value of the bond with the longer duration. The longer the maturity of the bond, the more sensitive the bond price is to such changes.

15 See Melander (2021) for a more detailed review of the different channels for the effects of bond purchases and an analysis of the effects of the Riksbank's purchases.

The lower rates on government bonds also contribute to lowering the rates on more risky bonds. To understand how this works, one can similarly decompose the rates on more risky bonds into two parts. One part consists of the rate on a government bond with the same maturity, and the other consists of a risk premium that compensates investors for the extra risk the bond entails in relation to the government bond. The government bond purchases can thus, in addition to lowering rates on government bonds, also contribute to lower rates on more risky bonds. This means they have a broad impact on market rates. How far the rates on risky assets ultimately fall depends on how the risk premium develops.

The announced purchases of municipal bonds can be seen as a complement to the purchases of government bonds to affect longer market rates. Municipal bonds have a different position among investors with regard to risk and liquidity, which is reflected in a somewhat higher interest rate (see Figure 9).

Purchases of covered bonds

During the more acute stage of the crisis, the rate on covered bonds rose clearly, as did the rates on government and municipal bonds. The upturns were at the same time limited in a historical perspective. However, the market for covered bonds is central to ensuring the banks can supply credit, as the major Swedish banks fund most of their lending for housing purchases by issuing covered bonds.[16] If risk premia on this market continued to rise, there was thus a risk that it would lead to the banks reducing their lending volumes and raising interest rates charged to companies and in particular households. The announced purchases of covered bonds can be characterised as targeted, as they were aimed at reducing the risk premia and preventing a further rise in rates on this specific market. If the purchases contribute to reducing the risk premium, they will also directly affect the banks' funding costs. In this way, they ultimately also affect the final interest rates charged to households and companies.

Purchases of commercial paper and corporate bonds

Historically, Swedish companies have primarily obtained funding via bank loans. But in recent years, market funding, that is the issue of corporate bonds and commercial paper, has increased relatively strongly, especially among larger companies. The Riksbank included these assets in its purchases following a period when the risk premium on the market for corporate bonds continued to rise even after the corresponding premia on other bond markets had begun to stabilise. During the third week in March, companies responding to the Riksbank's Business Survey described the primary market for commercial paper as 'dead'. The market participants the Riksbank conducted regular discussions with painted a similar picture. The companies were finding it difficult to issue paper on the primary market, and on the secondary market liquidity and market functioning deteriorated significantly, as many wanted to sell commercial paper at the same as few wanted to buy. Many bond funds also experienced major outflows. To meet these outflows, the funds were forced to sell a disproportionately large amount of their more liquid and easily sold assets, which meant that the pressure to sell even spread to other markets to some extent. Several corporate bond funds also experienced rapidly growing difficulties in valuing individual bonds, and when they could not guarantee fair market pricing, they were temporarily closed for deposits and withdrawals.[17]

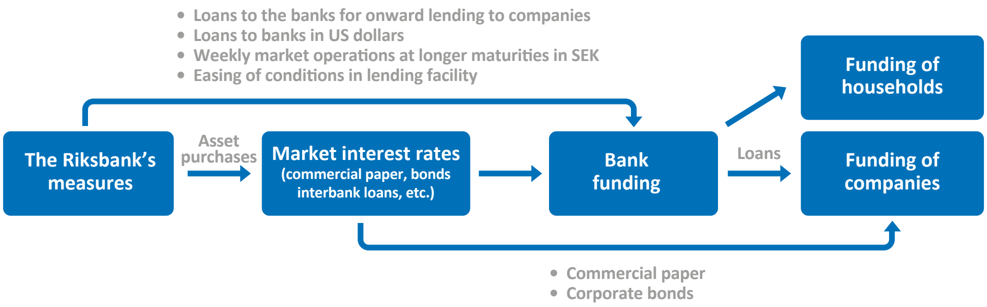
16 The Swedish banks finance mortgages with roughly 70 per cent market financing via covered bonds and the remaining 30 per cent through a mixture of other liabilities and equity capital, see Eidestedt et al. (2020). However, it is difficult to make a corresponding division with regard to the financing of corporate loans.

17 For an in-depth discussion of the development of the Swedish corporate bond market during the turbulent phase of the crisis, see Wollert (2020).

The Riksbank's purchases of commercial paper and corporate bonds can be characterised as targeted measures. The aim was to ensure that the market functioned, and to counteract the risk premium rising. By acting as 'buyer of last resort', that is, acting as buyer on the markets for commercial paper and corporate bonds when most participants wanted to sell, the Riksbank could contribute to companies being able to issue new commercial paper and bonds.[18] Better functioning market funding could also absorb some of the companies' total demand for loans and thereby prevent larger companies with market funding from crowding out small and medium sized enterprises' possibility to obtain bank loans.

Figure 5 outlines how the Riksbank's various measures impacted during the crisis to support the credit supply and prevent a rise in interest rates paid by companies and households.

Figure 5. The Riksbank's measures and their impact on the credit supply



2.3 The Riksbank's various measures have been used to a varying degree

The Riksbank's measures were used to varying degrees by the monetary policy counterparties during the spring and summer (see Table 1). As many of the measures were of an insurance nature in the sense that they were put in place in case developments deteriorated substantially, one cannot measure how effective they were on the basis of how much they were actually used. As an example, only a limited part of the envelope for the Riksbank's loan programme to the banks for onward lending to companies was used. At the same time, some of the banks used the programme to facilitate their financing during the period when alternative sources of financing were relatively expensive (see Figure 13).

The measures with a clear insurance nature, such as the loan programme to the banks, the purchases of commercial paper and several of the supplementary measures aimed at the banks' liquidity supply, were implemented by the bank determining a maximum purchase or lending volume at the same time as setting a price. In this way, the Riksbank wanted to ensure that these measures would only be in demand if the market conditions were 'sufficiently' poor. The demand for them therefore declined apace with the improvement in the financial conditions.

The Riksbank implemented many of the measures described above in a very short space of time. This meant that in several cases both the amounts and the terms and the conditions for the measures needed to be specified and adjusted after the initial announcement. The following section describes the sequence of events during spring and summer 2020 in greater detail, to illustrate the conditions that formed the basis for the Riksbank's actions.

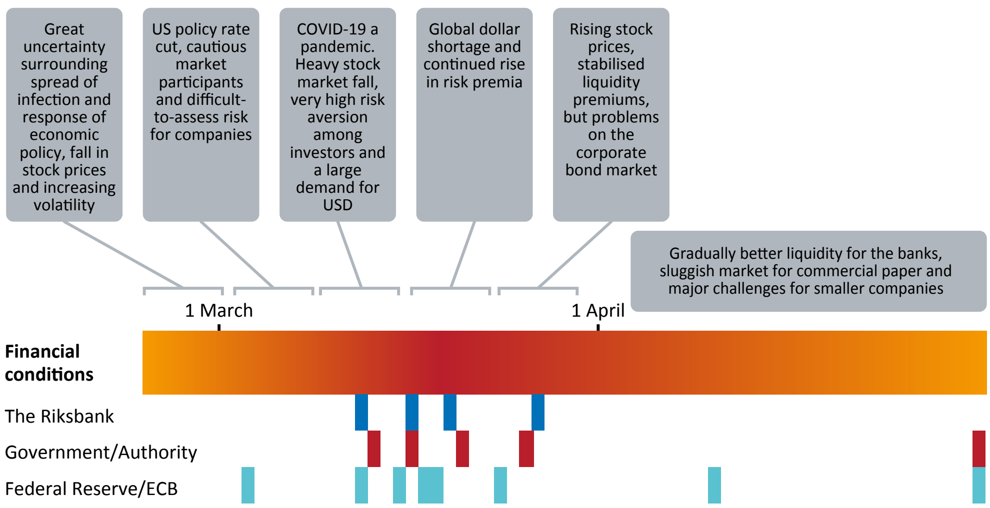
18 The Riksbank's purchases on the secondary market did not affect companies' funding capacity directly, as the terms for the security issued remained unchanged. However, they could be significant when companies needed to refinance securities that matured by issuing new securities. If investors knew that the secondary market was functioning well, they may have been more inclined to purchase securities on the primary market. However, the Riksbank's legal mandate did not allow it to make purchases on the primary market.

3 Development of the crisis on the financial markets

The Riksbank announced many of its measures in March 2020, when the turmoil in the financial markets was at its worst. During the ensuing months, the situation on the markets gradually improved, and after the summer many rates and prices were once again at around their pre-crisis levels. It is still too early to evaluate what effect the measures have had. It is probably also very difficult to determine the causality between individual measures and the ensuing development on the financial markets, as well as for the credit supply. The Riksbank, like governments and central banks in most parts of the world, took many different measures simultaneously over a short period of time, and there are good reasons to believe that this mitigated the course of the crisis.

The Riksbank intensified its contacts with both companies and agents on the financial markets to be able to better understand and follow developments, as the course of events at the beginning of the crisis was so rapid. For instance, the Riksbank carried out business surveys every second week and had regular discussions with banks and other market participants.[19] We provide below a more detailed account of developments on the financial markets in the spring and summer, based on the Riksbank's contacts with companies, banks and market participants and the statistics from the financial markets the Riksbank regularly monitors. The overall development during the more turbulent phase in February to April is summarised in Figure 6.

Figure 6. Financial conditions 24 February to 30 April 2020



Note. The figure reproduces, in addition to weekly summaries, a heat map of the Riksbank's index for financial conditions, where a stronger shade of red implies tighter financial conditions. Blue, red and turquoise fields mark the dates of the measures taken by the respective decision-maker. Dated measures taken by governments or public authorities and the Federal Reserve or the ECB constitute a sample and include the central measures mentioned in this article.
Sources: The ECB, the Federal Reserve, the Swedish Government Offices and the Riksbank

19 The Riksbank regularly interviews the largest companies in industry, construction, trade and parts of the service sector. This normally happens three times a year but, as a result of the pandemic, the Riksbank performed a number of extra interviews by telephone. The surveys referred to in this article took place during the periods 12–28 February, 4–6 March, 16–19 March, 30 March to 2 April, 14–17 April, 6–11 May an 5–9 June, see Sveriges Riksbank (2020b, 2020d and 2020e). Contacts with banks and other market participants intensified, for instance in the regular monitoring of the stability of the financial system, but also through the Riksbank's trading desk that is connected to the banks treasury and market analysis departments.

3.1 February and March: Increasing uncertainty develops into turmoil

At the end of February, it became clear that the coronavirus had spread to Europe. The spread of infection was particularly visible in Italy. The Italian authorities reported around 200 new confirmed cases every day. A week or so later, this figure had soared to more than 1,500 new cases per day. At the same time, the spread of infection in Sweden and most other parts of the world was so far moderate. At the end of February, Sweden had a total of around 10 confirmed cases of COVID-19.[20] However, there was considerable uncertainty as to how the disease would continue to spread, what effects it might have on economic activity and how the Government and central authorities would deal with it.

In the financial markets, investors became less willing to hold risky assets, especially assets with exposures to the corporate sector. Stock market volatility increased (see Figure 7), as reflected in the VIX-index which increased to levels comparable to those that prevailed during the worst periods of the financial crisis.[21] Several stock market indices, including the US S&P500 and the Swedish OMX, fell by around 10 per cent during the last week in February (see Figure 8).[22] The increased demand for safer assets contributed to rates on government bonds falling, which also caused other bond rates to fall (see Figure 9). Risk premia on the Swedish market for corporate bonds rose, however, which was reflected in a larger difference between rates on corporate bonds and government bonds (see Figure 10). This development also marked the financial markets in the rest of Europe and the United States.

During this period the Swedish banks were still facing markets that functioned efficiently with regard to their short-term funding, but they found investors to be rather more hesitant. Additionally, activity on the primary market for covered bonds was low during the winter sports break in Stockholm (end of February/early March). This made it difficult for the banks to assess market conditions with regard to their more long-term funding.

2–8 March: US policy rate cut, cautious market participants and difficult-to-assess risks for companies

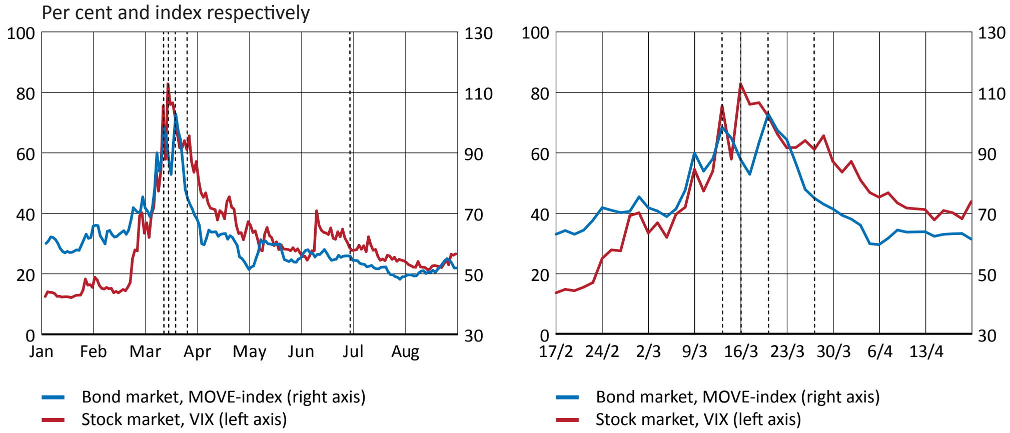
During the first week in March, the total number of confirmed Swedish cases of COVID-19 rose to over 200. There was still considerable concern both on the global and Swedish financial markets. However, the price movements were somewhat smaller than during the previous week, with a marginal fall in stock prices and stable spreads on both the corporate bond market and the covered bond market. One reason for this was probably that the Federal Reserve had signalled on 3 March that it was prepared to meet the crisis by cutting its policy rate by 0.5 percentage points between ordinary meetings. The financial markets responded immediately by incorporating expectations of further measures by the Federal Reserve into their pricing.

The Swedish banks' long-term funding had gradually become somewhat more expensive, and investors still appeared less willing to hold risky assets. According to the Riksbank's Business Survey in that week, companies were still only experiencing minor effects, and the outbreak of the virus was mainly regarded as a risk that was difficult to assess. At the same time, there was broad concern within the Riksbank and among other economic analysts that the information was not fully capturing the increasing seriousness of the situation. The uncertainty also gave rise to concern that the situation would worsen.

20 For further information, see Public Health Agency of Sweden: https://www.folkhalsomyndigheten.se/the-public-health-agency-of-sweden/communicable-disease-control/covid-19/.
21 The VIX-index is a measure of the expected volatility in the US stock market S&P500, and is computed from option prices.
22 OMX refers to OMXSPI (all-share), which includes all companies listed on the OMX Nordic Exchange Stockholm.

Figure 7. Volatility index for US equity and bond markets

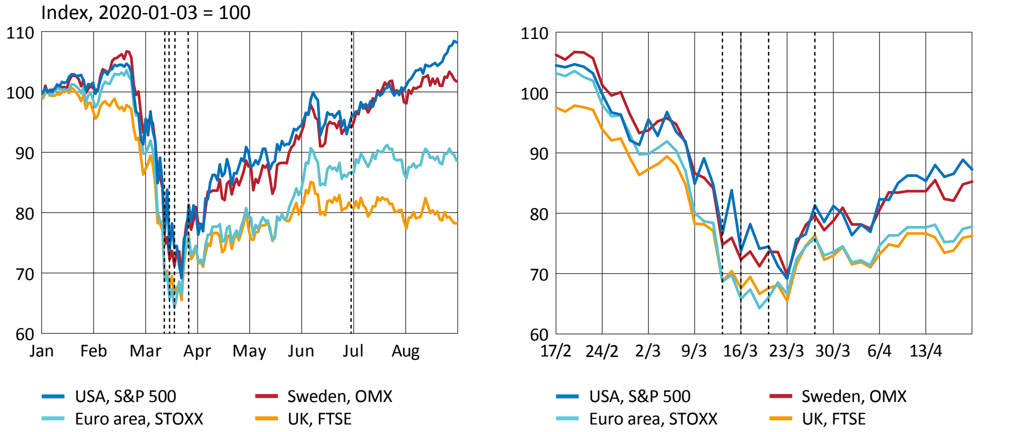
Per cent and index respectively



Note. The VIX index shows the expected volatility on the US stock market, based on options prices. The Merrill Lynch Option Volatility Estimate (MOVE) Index is a measure of the expected volatility of US government bonds on the bases of options prices. Broken lines mark the Riksbank's decisions on 12, 16, 19 and 26 March and the decision on 30 June.
Sources: Chicago Board Options Exchange and Merrill Lynch

Figure 8. Stock market movements in domestic currency

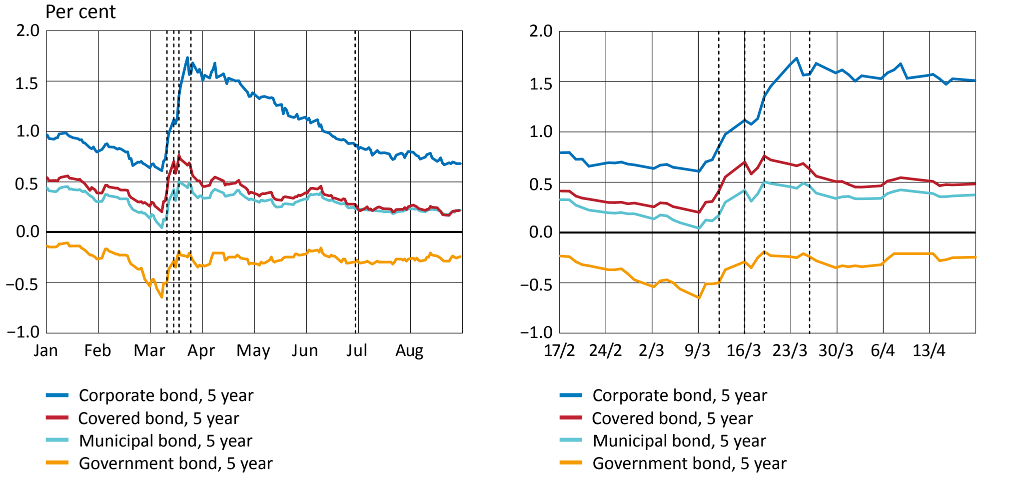
Index, 2020-01-03 = 100



Note. Broken lines mark the Riksbank's decisions on 12, 16, 19 and 26 March and the decision on 30 June.
Source: Macrobond

Figure 9. Bond yields, 5 year maturity

Per cent



Note. Covered bonds and corporate bonds are zero coupon rates calculated using the Nelson-Siegel method, bonds for companies with credit ratings equivalent to BBB or better. Municipal bonds are benchmark bonds issued by Kommuninvest i Sverige AB. Broken lines mark the Riksbank's decisions on 12, 16, 19 and 26 March and the decision on 30 June.
Sources: Bloomberg, Macrobond, Refinitiv and the Riksbank

9–15 March: Heavy stock market fall, very high risk aversion among investors and a large demand for USD

In the second week in March, the number of confirmed cases of COVID-19 in Sweden rose substantially. The total number amounted to around 1,000 cases in the middle of the week and the first death in Sweden was confirmed on 11 March. The spread of infection was also tangible in a large number of other countries and on the same day the WHO declared the coronavirus outbreak to be a global pandemic. At the same time, a conflict was escalating between Russia and Saudi Arabia regarding production levels for oil, which caused the oil price to fall more than 20 per cent.

This further aggravated the unease on the financial markets. The flight from risky assets increased again and the OMX fell by almost 20 per cent during the week. This was on a par with the stock market falls in other countries (see Figure 8). Risk aversion increased to such an extent that investors also began selling government bonds with long maturities in favour of government securities with short maturities and other safe assets.[23] This 'dash for cash' contributed to rates on government bonds with longer maturities rising by around 0.3 percentage points (see Figure 9).[24] In connection with this, there were major problems on the market for US government securities, which is normally regarded as one of the world's best functioning markets. Liquidity deteriorated markedly when many of the investors wanted to sell government bonds with longer maturities. One sign of this was that participants in the US market for government bonds reported historically large differences between ask and bid prices.

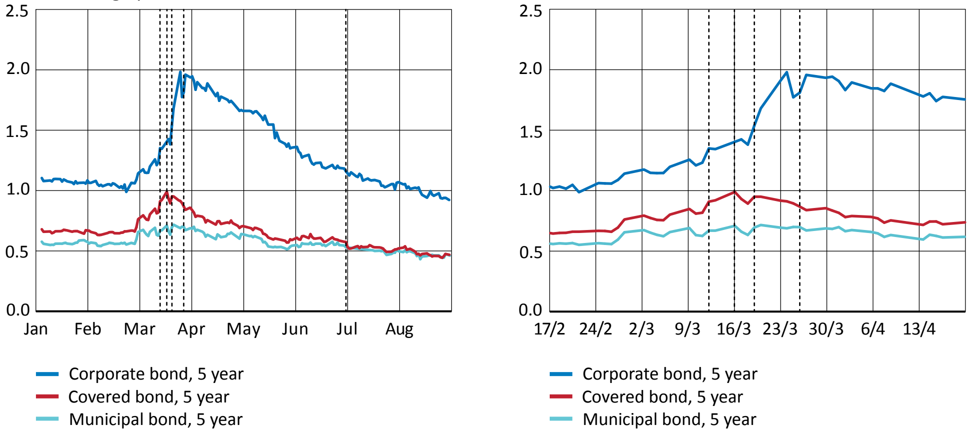
Intermediaries on the bond markets, who normally act as market makers by offering to both buy and sell bonds, had difficulty managing the enormous pressure to sell risky bonds. They rapidly reached the limit as to how much they could offload investors, and hold these bonds on their own balance sheets, both with regard to their internal risk mandate and the regulations. This mainly occurred in the corporate bond market, but also in the covered bond market and to some extent with regard to government bonds.

Rates on covered bonds and corporate bonds rose a few basis points further, compared with the rates on government bonds with equivalent maturities. This meant that the rate spreads which reflect risk premia on these markets, increased (see Figure 10). But despite the companies appearing to be much more exposed to the economic consequences of the pandemic than both banks and households, risk premia for corporate bonds did not increase more than those for covered bonds.

23 In the United States, the flight from government bonds with longer maturities was particularly clear, partly because highly-leveraged investors were forced to sell government bonds to meet their liquidity requirements. For further details, see Schrimpf et al. (2020).

24 There are several economic models that decompose government bond rates in expected future short-term rates and forward premiums. In a model based on Adrian et al. (2013), the rate rise during the second week in March can be largely explained by an increase in the forward premium. This is in line with the impression that risk aversion increased substantially and gave rise to a 'dash-for-cash' behaviour among investors.

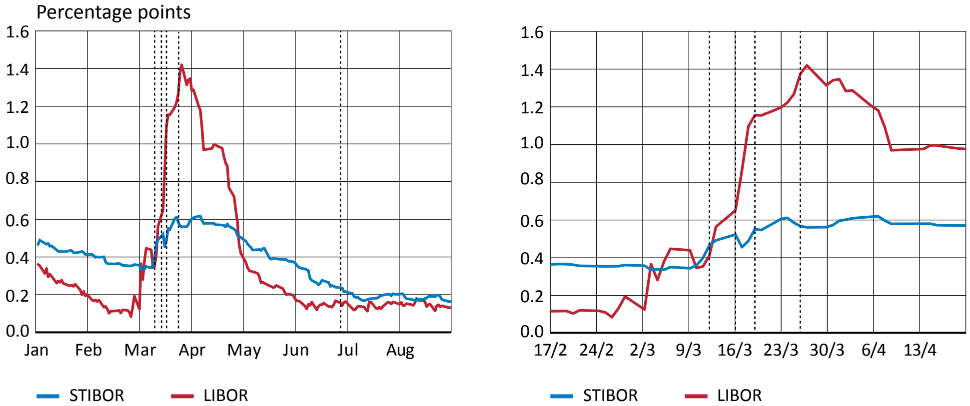
Figure 10. Yield spread between different types of bond and government bonds in Sweden
Percentage points



Note. Covered bonds, corporate and government bonds are zero coupon rates calculated using the Nelson-Siegel method, bonds for companies with credit ratings equivalent to BBB or better. Municipal bonds are benchmark bonds, issued by Kommuninvest i Sverige AB. Broken lines mark the Riksbank's decisions on 12, 16, 19 and 26 March and the decision on 30 June.
Sources: Bloomberg, Macrobond, Refinitiv and the Riksbank

The even lower demand for risky assets had also contributed to large outflows from, in particular, certain US money market funds that invested in riskier, short-term assets. These funds demanded less commercial paper and thus ceased providing the global money markets with dollar funding to the same extent as before.[25] Banks in need of short-term funding in USD had to turn to the interbank market instead. This contributed to the rate on this market, USD LIBOR, rising clearly in relation to the rate on US government securities (see Figure 11).[26]

Figure 11. Rate spread between interbank rates and treasury bills, 3-month maturity
Percentage points



Note. For LIBOR and STIBOR the spreads are calculated in relation to the rates on a US and a Swedish treasury bill respectively. The US treasury bill is a benchmark treasury bill, while the Swedish one is a zero coupon calculated using the Nelson-Siegel method. Broken lines mark the Riksbank's decisions on 12, 16, 19 and 26 March and the decision on 30 June.
Sources: Macrobond and the Riksbank

25 For detailed reasoning on this, see Sveriges Riksbank (2020c), Avdjiev et al. (2020), and Eren et al. (2020).
26 As many non-US agents, such as companies and financial institutions, use US dollars in their day-to-day operations, there is a large market for dollar loans outside of the United States. International banks therefore have both deposits and outstanding loans in USD, and to manage surpluses and deficits, they use the interbank market, where USD Libor is the reported rate. As US banks also have access to this market, USD Libor tends to follow the interbank rates in the United States, such as the federal funds rate. For longer maturities, of a few months, the difference between USD Libor and the rate on US government securities, the so-called TED spread, is usually small and stable. In times of heightened unease, however, it can rise significantly, and then often reflects an increased demand for USD and at the same time a reduced willingness among investors to hold risky assets.

The severe deterioration in market conditions caused both the ECB and the Federal Reserve to launch extensive measures programmes this week.[27] On 12 March, the ECB announced a temporary lending programme to the banks with no total limit and adjusted the terms and conditions in the coming TLTRO programme planned for June.[28] Moreover, they announced an extensive asset purchase programme of up to EUR 120 billion during 2020. Towards the end of the week, on 15 March, the Federal Reserve announced that they were cutting the policy rate by one percentage point to almost zero and intended to purchase government and mortgage bonds for at least USD 700 billion. These very extensive asset purchases were primarily aimed at holding interest rates and risk premia down, and easing the situation for the hard pressed financial intermediaries, thereby improving market functioning.

The major Swedish banks did not experience any problems in meeting their liquidity coverage ratios. On the other hand, they reported that funding at shorter maturities, which is mainly in USD, was increasingly problematic and that liquidity in instruments with a maturity of longer than one day was very low. The market climate for long-term borrowing was also considered to have deteriorated.

The widespread unease on the financial markets and the rapidly deteriorated prospects for Swedish companies made the Riksbank take a number of measures. The first was announced on 12 March, and entailed a loan programme to the banks for onward lending to companies. The Riksbank thereby undertook to lend up to SEK 500 billion to credit institutions that were monetary policy counterparties. The programme had clear similarities to programmes launched earlier by other central banks, such as the Bank of England's Funding for Lending scheme and the ECB's TLTRO programme. The loans were offered at a variable interest rate corresponding to the repo rate with a maturity of two years. If the counterparties wanted to borrow via the programme, but did not at the same time increase their lending to companies, there was an additional cost for the loan.[29]

As a safeguard for smooth functioning of the credit supply, Finansinspektionen (FI, the Swedish Financial Supervisory Authority) reduced the countercyclical capital buffer requirement applied to banks from 2.5 to zero per cent on 13 March. In this way, FI assessed that they could free up to SEK 900 billion for the banks in new bank lending.[30]

16–22 March: Global dollar shortage and continued rise in risk premia

In the third week of March, the coronavirus continued to spread rapidly in Sweden. The number of patients requiring intensive care increased substantially, from around 5 new patients per day at the start of the week to more than 30 new patients per day towards the end of the week. The total number of deceased also increased significantly and amounted to almost 50 people at the end of the week.

This week, too, the larger central banks were very active. The Federal Reserve implemented several measures to improve liquidity, and on 17 March it launched the Commercial Paper Funding Facility (CPFF). As part of this, the Federal Reserve undertook to support the companies' short-term market funding, with the support of state credit guarantees. On the following day, 18 March, they established the Money Market Mutual Fund Liquidity Facility (MMLF), which offered banks funding for up to one year for the purchase of assets from money market funds. This facility was aimed at helping money market funds meet the outflows without having to sell assets at heavily reduced prices. If

27 See https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.mp200312~8d3aec3ff2.en.html and https://www.federalreserve.gov/newsevents/pressreleases/monetary20200315a.htm.

28 Targeted Long Term Refinancing Operations (TLTRO) is a programme first launched in June 2014, where the ECB offers long-term loans to banks and gives them incentives to increase their lending to companies and consumers in the euro area.

29 The Riksbank follows up and evaluates the counterparties' lending to non-financial corporations with the aid of financial market statistics and data the counterparties are encouraged to provide to the Riksbank. If the counterparty's lending to Swedish non-financial corporations has not increased at the time of the valuation by at least one fifth of the amount the counterparties have borrowed from the Riksbank, the cost of the loan increases somewhat (see Table 1 for details).

30 See https://www.fi.se/en/published/press-releases/2020/fi-lowers-the-countercyclical-capital-buffer-to-zero/.

this were to happen, there would have been a risk that the functioning of important funding markets would have deteriorated further. On the same day, the ECB presented new asset purchases via the so-called Pandemic Emergency Purchasing Programme (PEPP) with an envelope equivalent to EUR 750 billion.[31]

The Swedish Government presented proposals for measures aimed at companies on 16 March. In addition to a system for so-called short-term layoffs, the companies were given the opportunity to apply to defer their tax payments. Companies could thereby apply to postpone a maximum of three months' employers social security contributions, preliminary tax on salaries and VAT, for a maximum of 12 months. Short-term layoffs meant that during the remainder of 2020, employees could reduce their working hours while the government provided economic support to the employer. In practice, this meant that the employee could retain a large share of his or her salary, at the same time as the company's payroll costs declined significantly.

As the unease on the financial markets had been so large at the end of the previous week, the Riksbank announced on Monday 16 March a further package of measures to counteract the negative development. This package included, in addition to an extensive asset purchase programme, measures to make it easier for banks to obtain funding. The asset purchases on this occasion included government, municipal and covered bonds. The Riksbank also made it clear that within a total envelope of up to SEK 300 billion it was intending to purchase nominal government bonds to a value of SEK 40 billion and real government bonds equivalent to SEK 5 billion, evenly distributed over the rest of 2020. At this point, the Riksbank did not communicate any amounts relating to how much municipal bonds or covered bonds it intended to buy. To increase the flexibility regarding eligible collateral for banks to borrow from the Riksbank, it also announced that a larger share of covered bonds than before could now be used as collateral. Covered bonds issued by the banks themselves were also accepted as eligible collateral. This measure meant that the banks could borrow more from the Riksbank than they were otherwise able to. The Riksbank also announced that it intended to implement weekly market operations with longer duration to increase the liquidity in the banking system. This would be done by offering the counterparties unlimited loans with three-month maturities at a cost of 0.2 percentage points above the repo rate. Finally, the Riksbank cut the rate on the lending facility from 0.75 to 0.2 percentage points above the repo rate. This meant that the banks could borrow more cheaply from the Riksbank overnight against collateral. All in all, these measures contributed to the banks being given access to very large amounts of liquidity and a ceiling for their funding costs was established at equivalent to 0.2 percentage points above the repo rate. The Riksbank began purchasing government bonds within two days over and above the bond purchases decided on earlier. The same week, the programme for lending to banks and the weekly market operations were also initiated.

Investors on the financial markets were becoming ever less inclined to hold risky assets. Volatility on the stock markets reached its highest level during the crisis on 16 March, according to the VIX, although it declined again during the week. At the same time, the stock market decline came to a halt and stayed at a few per cent. It was now mainly the market for commercial paper that was functioning poorly, when many wanted to sell at the same time as there were few buyers. The sellers included corporate bond funds that were experiencing large outflows and were therefore forced to sell bonds to a corresponding volume. Liquidity on the market thus deteriorated significantly, which was shown in the rapid increase of spreads between the prices that buyers and sellers were offering (see Figure 12). The price uncertainty also contributed to a number of bond funds not considering they could guarantee a correct valuation. They therefore closed temporarily for withdrawals

31 See https://www.federalreserve.gov/newsevents/pressreleases/monetary20200317a.htm and https://www.ecb.europa.eu/press/pr/date/2020/html/ecb.pr200318_1~3949d6f266.en.html.

and deposits, although most funds opened for trade a banking day or two later. Risk premia on the market for corporate bonds rose further and activity on the primary market for commercial paper and corporate bonds was at the same time very low, which further reinforced the picture of the companies' market funding functioning poorly. The rising risk premium probably reflected an increase in both credit and liquidity risk. Credit risk increased because the companies' ability to repay according to the conditions for the bonds became increasingly questioned. At the same time, the liquidity risk increased as investors perceived the functioning of the market to be deteriorating, and difficulties arose in selling bonds at a reasonable market price.

When the Riksbank early this week announced purchases of covered bonds, rates on these bonds stabilised over the course of the week. Banks, whose ability to fulfil their payment obligations is what the rates on covered bonds primarily reflect, were not exposed to the crisis as clearly as companies.

Towards the end of the week, the Riksbank on Thursday 19 March supplemented its earlier announcement of asset purchases, saying it also intended to buy commercial paper and corporate bonds. On the same day, the Riksbank and several other central banks also entered into swap agreements with the Federal Reserve to manage the strained situation on the markets for short-term borrowing in dollars.[32] The Riksbank announced that it would offer the banks loans in USD against collateral. The loans could amount to a total of USD 60 billion during the period from 19 March to 18 September 2020.

The day after, on 20 March, the Government announced it was intending to allocate resources to state-owned Almi Företagspartner, which offers loans and business development to companies. In this way, they wanted to increase lending to small and medium-sized enterprises. The Government also extended the loan scope for the Swedish Export Credit Corporation and the Swedish Export Credits Guarantee Board's ceiling for credit guarantees.[33] On the same day, the Riksbank specified that it intended to purchase covered bonds issued in SEK to a value of 10 billion in the first auction to be held on 25 March.

This week the Riksbank carried out both business surveys and interviews with participants in the financial markets. These confirmed that the situation was more acute. Many companies experienced the main problem to be a shortage of liquidity resulting from reduced income and that the conditions for external funding had deteriorated. As an example, several companies considered market funding to be 'dead', at the same time as they perceived the banks to be overwhelmed with loan applications, that the response times were long and that interest rates were higher. Larger industrial companies considered themselves to be well-equipped, but nevertheless intended to build up buffers to be prepared to manage a potential deterioration in the situation. At the same time, the banks perceived their short-term funding to be functioning poorly, both via the dollar and foreign exchange swap markets. With regard to long-term funding, the banks considered that the Riksbank's measures had had a direct impact on the covered bond market via somewhat lower risk premia and that interest among investors had increased. However, several banks indicated that they were postponing issuing covered bonds.

23–29 March: Rising stock prices, stabilised liquidity premia, but problems on the corporate bond market

Towards the end of March, the spread of infection stabilised at a high level, with around 30–40 new cases that needed intensive care every day. The total number of fatalities was almost five times as high as in the previous week, from 49 to 239.

32 The Riksbank's swap facility was originally established for a six-month period, but in August it was extended until 31 March 2021.

33 Almi received a capital injection of SEK 3 billion. The Swedish Export Credit Corporation's loan scope was extended from SEK 125 to 200 billion and the Swedish Export Credits Guarantee Board's ceiling for credit guarantees was expanded to a total of SEK 500 billion.

Many of the large stock indices, including the Swedish OMX, reached their lowest listing during the crisis on Monday 23 March. On the same day, the Federal Reserve launched a number of new measures.[34] The Federal Reserve declared that it was ready to purchase government bonds and mortgage bonds to the extent needed to ensure the markets functioned properly and monetary policy transmission was effective. Further, they launched two new facilities to support larger companies' market funding: one to supply companies with funding by buying corporate bonds on the primary market and the other to reinforce liquidity on the secondary market for corporate bonds. Moreover, they established a facility to support the funding of smaller companies and households.[35] This also included state guarantees that could cover parts of any losses the Federal Reserve might incur. During the remainder of the week, stock prices rose and the OMX increased by around 10 per cent. However, developments on the Swedish corporate bond market continued to deteriorate. Corporate bond rates continued to rise and the spread against government bonds reached its highest point so far during the crisis (see Figure 10).

The historical covariation between changes in stock prices and in the interest rate spread between corporate and government bonds is low and there are several possible explanations as to why the corporate bond market continued to be weak even after the stock market situation stabilised.[36] The Swedish corporate bond market is characterised, for instance, by low liquidity and relatively few speculative investors, which means it can take longer for prices on the market to reflect the fundamental value of the bonds.[37] Another explanation could be that the bonds reflect the companies' debt-servicing ability up to the maturity of the respective bond, while stock prices reflect how the company will perform over a longer time horizon.[38] Price setting might also have been hampered by several funds being temporarily closed down the previous week.

The rising corporate bond rates also stabilised in connection with the Riksbank announcing at the end of the week that the purchases of commercial paper were being initiated. In a preliminary stage the Riksbank would purchase commercial paper with a remaining maturity of up to three months, that is, companies' more short-term market financing. This was to alleviate the most acute problems for the companies needing to refinance loans maturing in the coming months. The purchases were to begin with an auction the following week, on 2 April, where the Riksbank intended to purchase commercial paper issued in Swedish krona with a credit rating equivalent to at least 'investment grade' for SEK 4 billion.[39]

To reinforce companies' liquidity, the Government presented the corporate loan guarantee on 25 March. This entailed the state guaranteeing, through the Swedish National Debt Office, 70 per cent of the banks' new loans to companies experiencing difficulties as a result of the pandemic, against a risk-based fee. The corporate loan guarantee thus meant that the banks were not exposed to the same extent to the credit risk entailed in providing companies with new loans. The Riksbank's lending programme here filled a complementary function by giving the banks access to cheap financing.

The Riksbank began its purchases of covered bonds and lending in dollars this week. On 27 March, it also extended the scope of these purchases and specified its plans for them.

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34 See https://www.federalreserve.gov/newsevents/pressreleases/monetary20200323b.htm.

35 These three facilities were the Primary Market Corporate Credit Facility (PMCCF), the Secondary Market Corporate Credit Facility (SMCCF) and the Term Asset-Backed Securities Loan Facility (TALF).

36 The correlation between the daily, percentage change in stock prices and the change in the interest spread between corporate and government bonds is only −0.15, measured over the period July 2013 to August 2020. The covariation between global stock markets is well-documented, however, and tends to be particularly great in times of market turbulence, see Ang and Bekaert (2002).

37 For a more detailed discussion of why the corporate bond market was so hard hit during the crisis, see Wollert (2020).

38 Chen et al. (2020) show that the substantial recovery in stock prices on the US stock exchange S&P 500 during the spring and summer was largely explained by the explanations of companies' dividend payments on horizons longer than five years, while the expected dividends at shorter horizons were much lower.

39 'Investment grade' refers to issuers/securities with a credit rating equivalent to at least BBB–.

The Riksbank was intending to purchase covered bonds for a total value of SEK 50 billion between 30 March and 30 April, and offered to buy for SEK 20 billion in the following auction on 1 April.[40] To attain a broader impact in the loan programme to the banks, the Riksbank moreover decided during this week to temporarily extend its circle of counterparties. Now a number of smaller savings banks, whose customers largely consist of small and medium-sized enterprises, were also given the opportunity to apply for loans through this programme.[41]

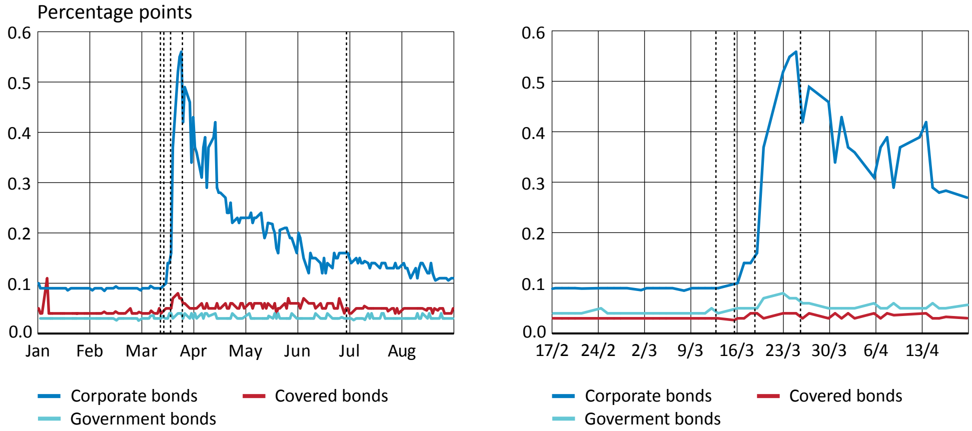
The turnover on the market for FX swaps remained poor, but the banks were able to issue smaller volumes of short-term debt at higher interest rates.

3.2 April: Gradually better liquidity for the banks, sluggish market for commercial paper and major challenges for smaller companies

In the middle of April, the spread of infection was still high but reached its peak during the first wave of the pandemic according to different measures. The number of new cases needing intensive care fell during the month, from almost 40 to around 30 per day. The number of fatalities amounted to around 100 people per day in the middle of April, but declined to around 80 people per day towards the end of the month.

April was marked by some recovery on the financial markets. The Federal Reserve launched new measures on 9 April, including loan programmes aimed at companies (MSLP) and at state and local governments (MLF).[42] The measures taken by the Riksbank and other agents had begun to be implemented, at the same time as investors to some extent became more inclined to take risks. The OMX rose by just over 8 per cent in April, and the rates on covered bonds were already back at the same level as at the start of the year in early April (see Figure 9). However, the spread between rates on covered bonds and government bonds did not fall back to the corresponding levels until the end of the month (see Figure 10). The spread between corporate and government bonds, on the other hand, remained at high levels although it showed a declining trend. The same development could be seen for liquidity on the market for corporate bonds, where the spreads between bid and ask prices were considerable, but declined (see Figure 12).

Figure 12. Spread between ask and bid rates on bonds
Percentage points



Note. Average listed rates, based on all available nominal government bonds, and just over 50 corporate bonds with varying maturities and with credit ratings equivalent to BBB or higher. Broken lines mark the Riksbank's decisions on 12, 16, 19 and 26 March and the decision on 30 June.
Sources: Refinitiv and the Riksbank

40 In August 2020, the outstanding nominal volume of covered bonds amounted to almost SEK 2,000 billion, see further Figure 4.

41 At the end of August the temporary monetary policy counterparties comprised Sparbanken Alingsås AB, Sparbanken Skåne AB (publ), Sparbanken Skaraborg AB (publ), Tjustbygdens Sparbank Bankaktiebolag and Volvofinans Bank AB.

42 See https://www.federalreserve.gov/newsevents/pressreleases/monetary20200409a.htm.

During April, the Riksbank continued to specify details and make minor adjustments to the measures already announced. On 3 April the Riksbank offered to purchase commercial paper for SEK 4 billion in the next auction on 8 April and commercial paper for up to SEK 32 billion between 8 April and 31 May. A few days later, the lending programme to the banks was also extended, to also include onward lending to sole proprietors. Later in the month, on 22 April, the Riksbank announced that it intended to initiate purchases of bonds issued by Swedish municipalities and regions and by Kommuninvest i Sverige AB. These purchases would amount to a nominal total of SEK 15 billion between 27 April and 30 June 2020. On 27 April the Riksbank announced further purchases of covered bonds for SEK 80 billion from May until the end of September.

In April, the Riksbank carried out two business surveys. At the beginning of April, large industrial companies stated that it had become much more expensive to fund their operations than prior to the crisis and that the authorities' measures had not tangibly eased the situation. Moreover, the companies stated that the short-term borrowing via the commercial paper market had ceased at the same time as it was more expensive than before to issue bonds with longer maturities. They could to some extent finance themselves through agreements with banks that had been reached earlier. However, the negotiations with the banks had also become more complicated. In the same survey, trade associations representing the manufacturing sector, the retail sector and the service sectors stated that smaller companies had a more difficult funding situation, as they to a greater extent lacked collateral. The banks were also considered to have had difficulty assessing the debt-servicing ability of companies and managing to process applications in time.

In the Riksbank's business surveys in mid-April, large export companies stated that they had found it easier to fund themselves in recent weeks and that export funding had been secured on reasonable terms thanks to guarantees and loan frameworks from the Export Credit Guarantee Board and the Swedish Export Credit Corporation. These companies at the same time experienced activity on the commercial paper and bond markets to be much lower than prior to the crisis. Instead the companies turned to the banks to obtain new loans and strengthen their liquidity. They stated that the loan conditions were still characterised by short maturities and high costs. The banks' credit assessments were not perceived to have changed significantly, but the negotiations were long and complicated. Property companies and larger manufacturing companies shared the picture of companies using credit lines at the banks as a result of reduced market funding. They also saw a risk that this behaviour pushed out smaller companies with a need to borrow, as they had less access to collateral. Among the property companies there was also some criticism of the Riksbank's purchases of commercial paper not also applying to the primary market. They therefore benefited investors rather than companies, and the banks' credit lines were not considered to suffice to compensate for the loss of market funding.

As a result of the Easter holidays and the fact that banks were publishing their interim reports, there was little market activity. However, the banks considered that the FX swap market was functioning better in USD, EUR and GBP. They also observed that companies were using their credit lines a lot in March, but less in April. Later in the month, conditions for the banks' short-term funding improved in that the dollar market was functioning better, with increased activity on both the primary and secondary market. The banks further observed that a strong development on the stock market reduced investors' need for liquidity and thereby the risk of 'fire sales', and that the conditions for the banks' long-term funding had improved.[43]

43 The expression 'fire sales' is closely linked to so-called liquidity spirals. These arise when many investors want to sell certain assets at the same time. This pushes down prices of assets, which means that balance sheets for the investors holding these assets are weakened, which in turn increases the need to sell the assets. In this way, a spiral is created where pressure to sell leads to increased pressure to sell, and so on. For further details regarding this channels, see Brunnermeier and Pedersen (2009).

At the end of the month, on 30 April, the ECB presented new measures to maintain the supply of credit. In addition to cutting the interest rates in lending to banks within the TLTRO III programme they also intended to extend their loan programme to the banks through seven new long-term market operations market operations, known as Pandemic Emergency Long-Term Refinancing Operations (PELTRO).

On the same day, the Swedish government presented a proposal for reorientation support to companies whose turnover had declined substantially in March and April.[44]

3.3 May – August: Expanded measures and calmer situation on the markets

The downward trend in the spread of infection seen in April continued over the next few months. At the start of May, the number of new cases requiring intensive care was about 30 per day. Towards the end of June, this figure fell to 5 and, two months later, it was down to about 1. The number of fatalities fell in May and June from about 80 to 40 per day, reaching about 2 by the end of August.

The situation on the financial markets continued gradually to improve over the period May to August. Unease over the development of the economy also started to fall slightly as the spread of infection slowed down and the Riksbank and other actors implemented their measures. Uncertainty over companies' future debt-servicing ability thereby decreased. This contributed to yields for corporate bonds returning to the same levels as before the crisis by the end of August (see Figure 9). The yield spread against government bond yields and liquidity on the corporate bond market also returned to earlier levels (see Figure 10 and 12). Investors became more willing to hold high-risk assets and, from the start of May until the end of August, major stock market indices around the world rose, including the OMX index, which rose by about 16 per cent (see Figure 8). However, at the end of August, uncertainty was still greater than before the crisis, which was reflected in the VIX index remaining on slightly elevated levels (see Figure 7).

Over the period May to August, the Riksbank announced further measures and changes to previously announced measures. For example, on 8 May, it announced that purchases of commercial paper would now also include paper with a remaining time to maturity of up to six months, compared with the previous three. Purchases between 1 June and 30 September would take place in such a way that the Riksbank's holdings of commercial paper, acquired under the framework of the current purchase programme running until 30 September 2020, would not exceed a value of SEK 32 billion. On 15 May, the Riksbank also announced that purchases of municipal bonds for the period July to September would amount to SEK 15 billion.

In conjunction with the monetary policy meeting of 30 June, the Riksbank decided to expand the envelope for asset purchases to a maximum of SEK 500 billion until the middle of 2021. At the same time, purchases within this framework to be carried out between 1 October and 31 December 2020 were announced. In addition to the previously announced purchases, the Riksbank intended to purchase:

i. Swedish nominal and real government bonds to a total nominal amount of SEK 20 billion in addition to the previously decided purchases of government bonds over the period July 2019 until December 2020

ii. bonds issued by Swedish municipalities and regions and by Kommuninvest i Sweden AB for a nominal amount of SEK 15 billion

iii. covered bonds issued by Swedish institutions to a nominal amount of SEK 65 billion

44 To receive this support the company was required to have had a turnover of at least SEK 250,000 during the past financial year and a loss of turnover of at least 30 per cent.

iv. commercial paper so that the Riksbank's holdings of commercial paper over the new purchase period would not exceed SEK 32 billion but also so that, upon each purchase, the Riksbank would not own more than 70 per cent of any individual issuer's total outstanding volume of commercial paper in Swedish kronor

v. corporate bonds issued in Swedish kronor from monetary policy counterparties in a nominal amount of SEK 10 billion between 1 September 2020 and 30 June 2021.

At the same time, the Riksbank lowered the banks' cost for borrowing via weekly market operations at longer maturities by removing the mark-up on the repo rate, and also introduced the possibility for the counterparties to take loans at a maturity of six months. The terms of the lending programme to the banks were also modified by an extension of the maturity of the loans from two to four years. In addition, the interest supplement applicable if the bank failed to fulfil the condition on onward lending was cut from 0.20 to 0.10 percentage points above the repo rate.

The Riksbank announced the more specific details of amounts and timings for purchases of corporate bonds after a period of clear recovery on this market. By the end of June, yields were only about 10 basis points above the levels prevailing at the start of the year (see Figure 9), and the yield differential between corporate and government bonds was about 25 basis points higher (see Figure 10). Liquidity had also shown a clear improvement and the bid-ask spread had fallen from just over 50 basis points in mid-March to about 20 basis points (see Figure 12). By this point, there was good reason to believe that market pricing had incorporated the Riksbank's future purchases of corporate bonds. If the Riksbank no longer intended to realise its announced purchases, this could increase uncertainty on the market and risk making future signals on asset purchases less effective. It was also important to fulfil the purchases due to the need to set up operational preparedness to allow purchases to be scaled up rapidly if the situation on the market were to deteriorate.

At the end of April and start of March, the banks considered that the costs for the short-term funding in dollars were continuing to fall but that the corresponding market in euros was still working less efficiently than normal. Concerning their long-term funding, the banks did not consider there to be any problems with issuing covered bonds in Swedish kronor. The Riksbank's measures were cited as a strong contributory cause for this. Furthermore, the banks reported that it was still more expensive for Swedish banks to issue in euros than in Swedish kronor. They also considered that the funding need had decreased due to central bank measures, the deposits that followed withdrawals from funds and increasing household saving. During the rest of May, conditions remained good for the banks' short-term funding and interest rates stabilised. However, it remained relatively expensive to obtain funding in euros, even if interest rates were decreasing. The banks stated that the market for covered bonds was continuing to function well, with falling risk premia.

In June and July, developments continued in the same path, with good liquidity and falling risk premia. Once again, the banks reported that the relatively moderate funding need was contributing to low activity. In August, the banks considered that there was plenty of liquidity on the dollar market for all maturities and that the challenge instead lay in getting rid of their liquidity. The funding need remained low and long-term funding could, in some cases, be secured at a historically low cost.

4 Stable credit supply after massive measures

The rapidly worsened outlook during the spring of 2020 created an acute liquidity crisis for many companies, even those that were fundamentally viable. Revenues fell rapidly at the same time as a significant part of the costs remained. Even if measures such as the Government's short-term layoff scheme, for example, helped companies to reduce their costs, both small and large companies increased their borrowing very strongly between February and August.

Large companies turned to banks to a greater degree when conditions for market funding deteriorated. In the business surveys over the spring, large companies also stated that they wished to build up liquidity buffers in case the situation was to worsen further. Smaller companies found it more difficult to bear the loss of income and therefore also very heavily increased their short-term borrowing. In contrast to the large companies, the smaller companies reduced their outstanding long-term credits between February and March. This can probably be explained partly by the companies demanding less long-term credit and partly by a certain unwillingness among the banks to lend for longer maturities, which finds some support in the Riksbank's business survey, the Economic Tendency Survey and Almi's loan indicator.

While interest rates on the companies market funding increased slightly, interest rates on the companies' bank loans were not affected to any greater extent for either small or large companies. However, these statistics only include interest rates on granted loans. Consequently, actual interest rates faced by companies may have increased more than the statistics suggest.

Below, we briefly discuss the banks' funding situation before moving on to review data and indicators for lending to companies and households.

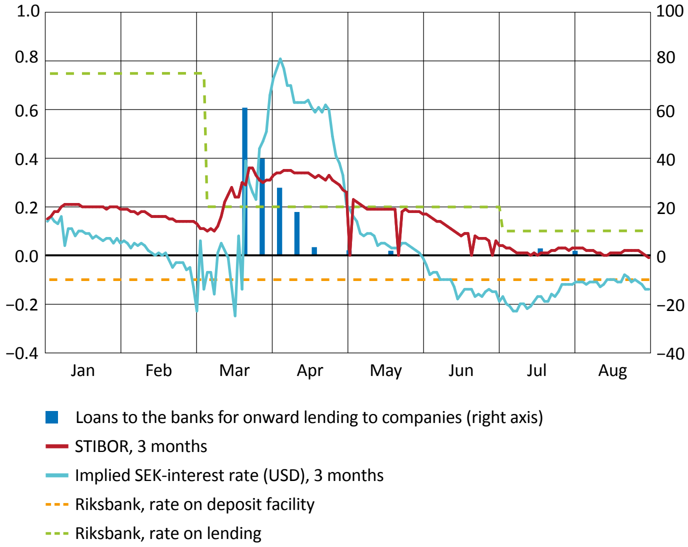
4.1 The banks' funding situation improved gradually

The banks' willingness and ability to issue loans is vital to economic activity. However, the loans that the banks issue must somehow be funded. To some extent, Swedish banks are funded using the deposits made by the general public but the financial markets are also an important source of funding. The banks issue large volumes of bonds, both covered and unsecured, as part of their long-term funding, and are dependent on the global money market for their short-term funding. If the situation on the markets rapidly deteriorates, there may be negative consequences for the banks' ability to issue credit to households and companies. Several of the Riksbank's measures therefore aimed to support the financial markets by purchasing assets but also to offer the banks safe and cheap funding and thereby create good condition for them to continue to grant loans to households and companies, preventing a rise in lending rates. Ultimately, however, it was up to the banks to assess household and corporate credit ratings, as usual, and to determine whether they should be granted credit.

The banks experienced a gradual improvement in the financial conditions after the most turbulent period in March and, in August, the funding situation was very good. This was reflected in the development of the banks' funding costs (see Figure 9 and 13).

Figure 13. Swedish banks' funding costs and utilisation of the Riksbank's funding-for-lending

Per cent and SEK billion

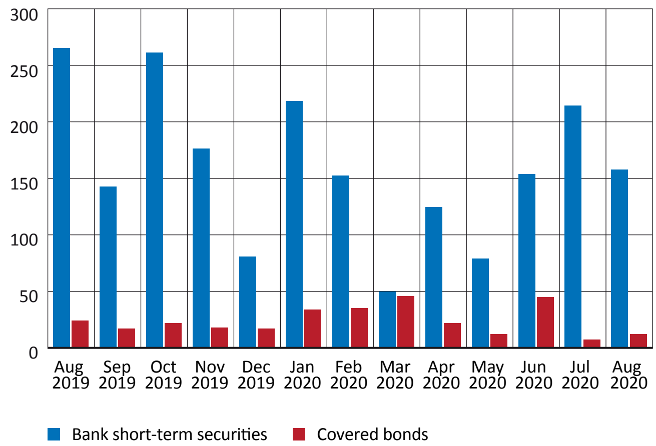


Note. The implied SEK interest rate is calculated using spot rates and forward exchange rates, as well as the 3-month interest rate USD LIBOR.
Sources: Bloomberg and the Riksbank

The banks' short-term funding largely consists of borrowing in US dollars and euros, and these loans are then converted into Swedish kronor via various financial derivatives. Starting in april, the costs for obtaining funding in this way gradually decreased and can be illustrated using implied SEK interest rates (see Figure 13).[45] The banks also increased their issues of short-term securities (commercial paper and certificates of deposit) compared with March. Issues of covered bonds, however, did not increase to the same extent. One possible explanation of this could be that relatively large issues were made at the start of 2020 and that the banks had a smaller funding requirement after deposits from the general public increased (see Figure 14 and 15). The banks' interest in the Riksbank's liquidity support was also limited after the more turbulent period in March and April (see Table 1 and Figure 13).

Figure 14. The banks' issuance of short-term securities and covered bonds

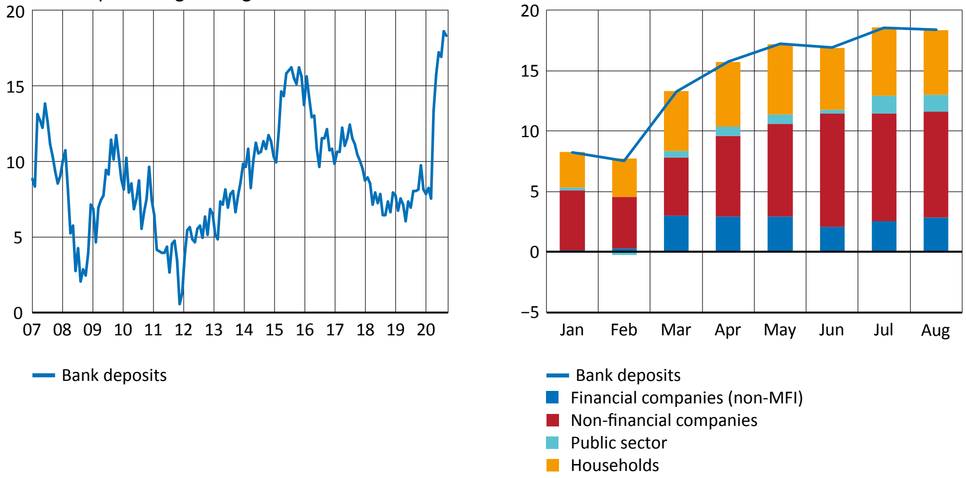
SEK billion



Source: The Riksbank

45 When the banks borrow in foreign currency and exchange it for Swedish kronor, they simultaneously wish to enter into a financial derivative contract to insure themselves against the krona depreciating over the maturity of the loan. The final cost for the loan, known as the implied SEK interest rate, thereby consists of two components: both the interest paid on the foreign loan and the cost of this insurance according to the derivative contract.

Figure 15. Bank deposits
Annual percentage change



Note. The public sector refers to municipalities, county councils and the social insurance sector.
Source: Statistics Sweden

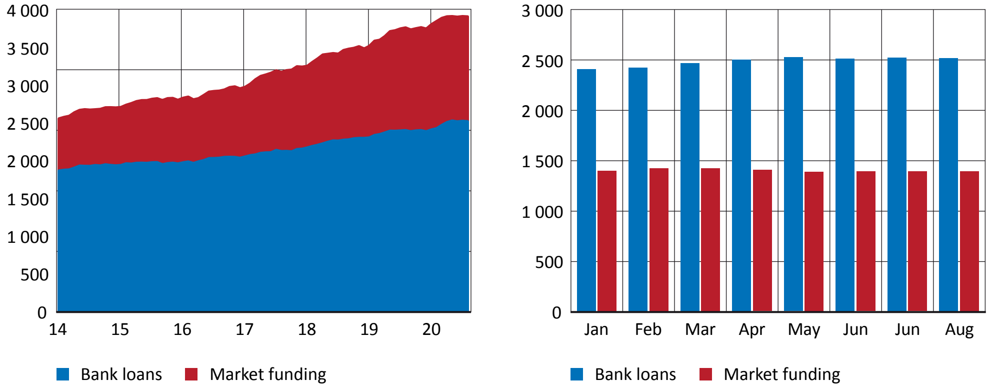
4.2 Companies more dependent on the banks during the pandemic

Companies can fund their operations in different ways. Internal funding is based on companies using equity from profits and shareholders' contributions, while external funding means they take loans from banks and other lending institutions or issue liabilities via commercial paper and bonds. The primary source of most Swedish companies' borrowing is bank loans. However, many companies, above all larger ones, have issued increasingly large volumes on the commercial paper and bond markets in recent years. Consequently, the functioning of these markets and the level of their interest rates are also important to the funding of companies.

When studying the development of lending to companies, alongside the companies' own responses in the business surveys, it is also interesting to study changes in how much the companies have borrowed and how interest rates on these loans have developed. The crisis affected different parts of the corporate sector with varying severity and the business surveys capture a limited sample of companies. At the same time, therefore, it is important to interpret the more aggregated statistics cautiously and, as far as possible, also to study more disaggregated data, both as concerns companies' bank loans and their market funding.

In February 2020, total borrowings within the corporate sector, which is to say bank loans and issued commercial paper, amounted to SEK 3,845 billion or just over 75 per cent of annual GDP. Of this, bank loans made up just under two-thirds (see Figure 16). Credit growth usually slows down when economic activity worsens, among other reasons because companies are investing less and the banks are becoming more restrictive in their lending. However, this typically takes place with some delay. Consequently, it is not that surprising that companies' overall credit growth continued to increase over the spring and summer. Over the period between February and August, companies' total borrowings increased by 1.6 percent. At the same time as bank lending increased by just under 4 per cent, market funding decreased by just over 2 per cent (see Figure 16). This can probably be explained by the strong deterioration in the conditions for market funding over the early part of this period.

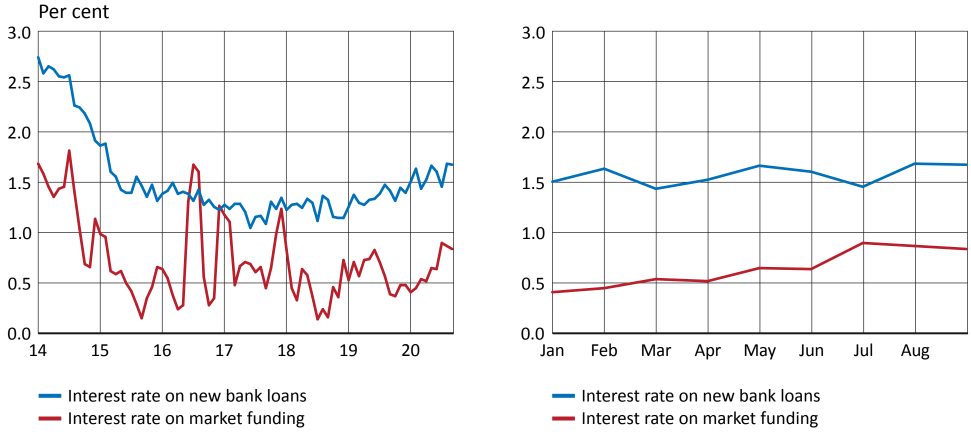
Figure 16. Companies' nominal loan debt, all currencies
SEK billion



Note. Loans from banks refers to MFI lending to non-financial corporations. Market funding refers to non-financial corporations' borrowing via the markets for corporate bonds and commercial paper.
Source: Statistics Sweden

The aggregated statistics suggest that an average companies' cost for taking loans was not affected to any great extent, even if the interest rate on newly-issued commercial paper increased slightly between February and August (see Figure 17). At the same time, it is important to remember that the interest rates we are studying here are based on approved loans and do not necessarily represent the interest rates that the banks offered companies. It is therefore possible that the actual interest rates that companies must take a stance on rose more than the statistics suggest.

Figure 17. Interest rates on corporate borrowing
Per cent



Note. The interest rate on new bank loans refers to the average corporate rate (MFI). The interest rate on market funding refers to a 3-month moving average of the interest expense for amounts issued during the month (commercial paper and corporate bonds, all currencies).
Source: Statistics Sweden

The banks' lending increased, particularly for short maturities and to large companies

Bank loans make up the most common form of funding for companies and the only external source of funding for many small and medium-sized enterprises that do not have access to market funding. In this analysis, we break down the banks' lending by company size and maturity of loans. The maturity of a loan can act as an indicator of the purpose of the loan. Somewhat simplified, it could be said that companies need to borrow money for two reasons:

i. to fund investments
ii. to manage the short-term balance between revenues and expenditure, which is known as *working capital*.

Investment is preferably funded by loans with longer maturities. This is to make it possible to match the repayment of the loan with the streams of future revenues the investment will generate. By matching these cash flows as well as possible, the company can create a long-term balance between revenues and expenditure, and reduce the risk of encountering liquidity problems. However, the short-term balance between revenues and expenditure varies over time for natural reasons, for example due to cyclical patterns or other demand shocks. To manage these short-term fluctuations, companies primarily use bank loans with short maturities and credit lines with the banks.[46, 47]

Breaking down bank loans by company size and maturity shows some clear patterns. Large companies increased both their short-term and more long-term borrowing between February and August. This stands in some contrast with smaller companies, who certainly increased their short-term borrowing very strongly, but, at the same time, slightly decreased their borrowing at longer maturities (see Figure 18).[48]

This development can probably be explained by the interplay of several different factors. Large companies generally have better resilience to demand shocks as they have larger balance sheets that can absorb decreased revenues. The probable explanation for the increase in short-term bank loans by large companies is that they replaced parts of their market funding, which is discussed in the next section. But it may also be due to a wish to build up a liquidity buffer ahead of a possible further deterioration of the situation, in accordance with information extracted from the Riksbank business surveys. Large companies' short-term loans increased by about 30 per cent between February and August (see Figure 18).

For smaller, more exposed companies, it instead became natural, during the pandemic, to rapidly decrease their investments, which are mainly funded using long-term loans. When revenues fell drastically, these companies also faced a great need to reduce their costs and scale back their production of goods and services. This also reduced the need for short-term funding, for example for input goods and labour. In the statistics, we can also see that the utilisation of companies' overdraft facilities with the banks decreased.[49] However, revenues fell more than costs, and the companies instead needed to increase their short-term bank loans to get through the current liquidity situation.[50] Short-term bank borrowing also increased by about 40–50 per cent for these companies over the spring and summer (see Figure 18).

46 As short-term bank loans have lower interest rates than credit lines, companies are likely to prefer to use bank loans to manage predictable fluctuations in working capital, such as seasonal fluctuations. On the other hand, credit lines, whose advantage is that they are immediately available, are used to a greater extent to manage unpredictable shocks in operating capital.

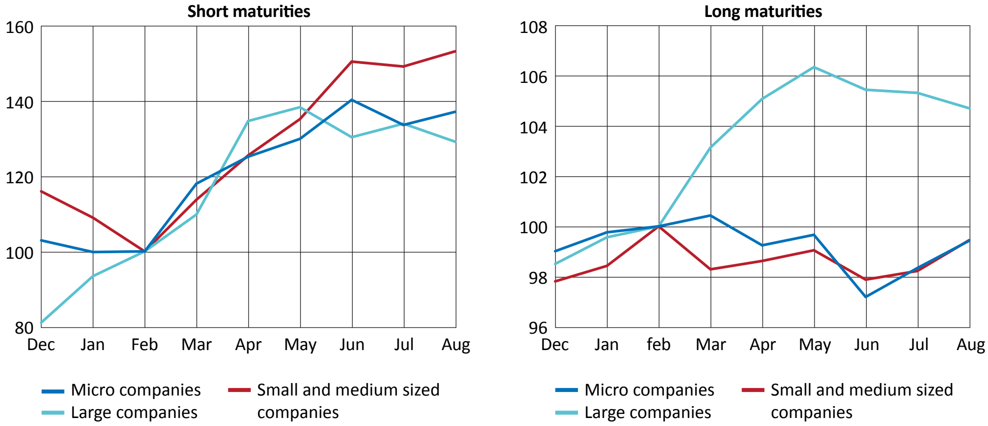
47 About 79 per cent of bank loans are for long maturities (over one year), 14 per cent are for short maturities (less than one year) and the remaining 7 per cent are for unspecified maturities. Source: The Riksbank and Statistics Sweden.

48 In the breakdown of the banks' lending, we use data from the Riksbank's credit database (KRITA) throughout, which includes credit from Monetary Financial Institutions (MFIs) to all sectors except households, loan-for-loan. The first observation for the KRITA statistics is from December 2019, which makes it difficult to identify and consider seasonable variations in the data being analysed. KRITA is a relatively new database and quality assurance of the information is still in progress, meaning that the information should be interpreted with some caution. It is difficult to make a direct comparison of the broken down KRITA statistics reported in the article with the more aggregated MFI statistics for credit growth, as the latter is volume-weighted and, among other things, includes loans to housing cooperatives and loans without specified maturities.

49 See Statistics Sweden's financial markets statistics, https://www.scb.se/hitta-statistik/statistik-efter-amne/finansmarknad/finansmarknadsstatistik/finansmarknadsstatistik/.

50 For example, it was against the background of this need that Almi launched its so-called bridging loans at the end of March. These loans were aimed specifically at meeting funding requirements of small and medium-sized enterprises during the crisis. During a ten week-period following the launch, close to 3000 companies applied for the loan.

Figure 18. The banks' lending to companies by company size and maturity
Index, February = 100

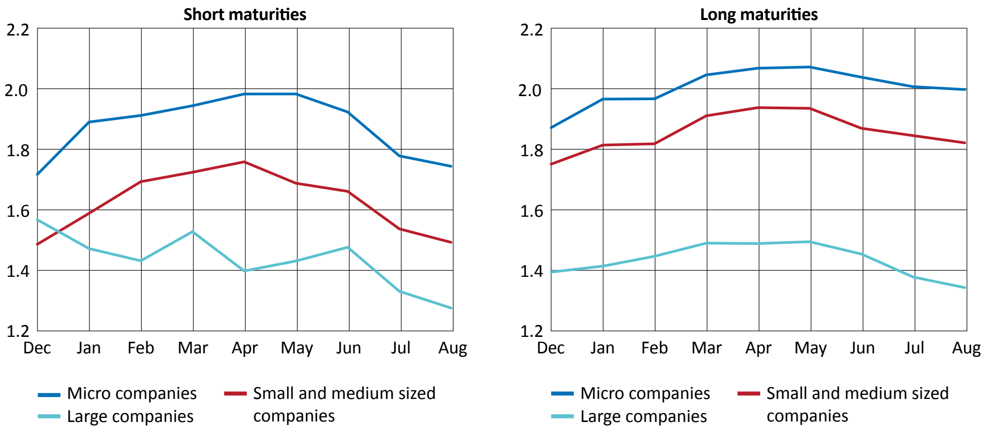


Note. Short and long maturities refer to loan maturities of up to one year and over one year, respectively. The size classification in the KRITA statistics has been made in accordance with European Commission Recommendation (2003/361/EC), and is determined by a combination of the number of employees, turnover and assets.
Source: The Riksbank

Another possible explanation for the increase in short-term bank loans and decrease in long-term ones by smaller companies is that the banks became less wiling to grant more long-term credit when future prospects became more uncertain. They therefore 'forced' smaller companies towards more short-term funding to reduce the credit risk in their own lending. The Riksbank's business surveys provide some support for companies' experiences of such a development (see Figure 20). The greater increase in long-term borrowing by large companies in comparison with smaller ones may also be explained by the larger companies, which usually have a significant proportion of market funding, occasionally finding it difficult to issue bonds on the European market. Instead, they turned to the banks for loans over correspondingly longer maturities.

As regards the interest rates on companies' bank loans, the statistics from the spring and summer do not indicate any larger changes, even when the statistics are divided up by company size and loan maturity. Smaller companies normally have a greater credit risk and lending over the longer term also involves a larger risk that the lender will not receive full payment. This helps explain why different credits cost different amounts for different companies. Interest rates on short-term loans were generally slightly lower in August than in February (see Figure 19). For loans with longer maturities, interest rates were marginally higher than in February for the smallest companies, while larger companies faced marginally lower interest rates in August (see Figure 19).

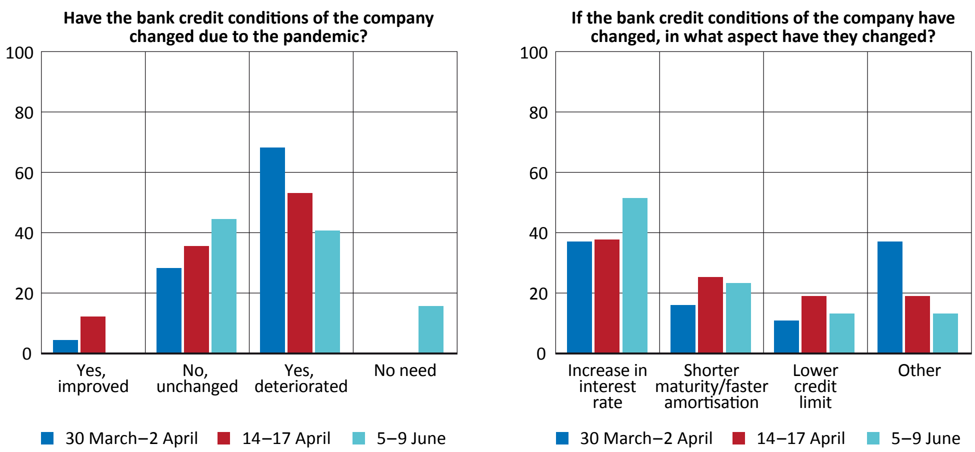
Figure 19. Average interest rate on bank loans to companies by company size and maturity
Per cent



Note. Short and long maturities refer to loan maturities (not interest rates) of up to one year and over one year, respectively. Size breakdown in accordance with European Commission Recommendation (2003/361/EC), in which the combination of number of employees, turnover and assets determines the size classification.
Source: The Riksbank

In the Riksbank's business surveys, almost 70 per cent of companies reported a deterioration of credit terms during the more turbulent phase of the crisis. However, over the spring and summer, this percentage decreased gradually (see Figure 20). In the same survey, those companies that had experienced a change in credit terms reported that, to a significant degree, this was a matter of higher interest rates but also, to some extent, a shift towards shorter maturities for loans and lower limits (see Figure 20).

Figure 20. Have companies' terms for bank loans changed due to the pandemic and, if so, how?
Percentage of responses



Source: The Riksbank's Business Surveys

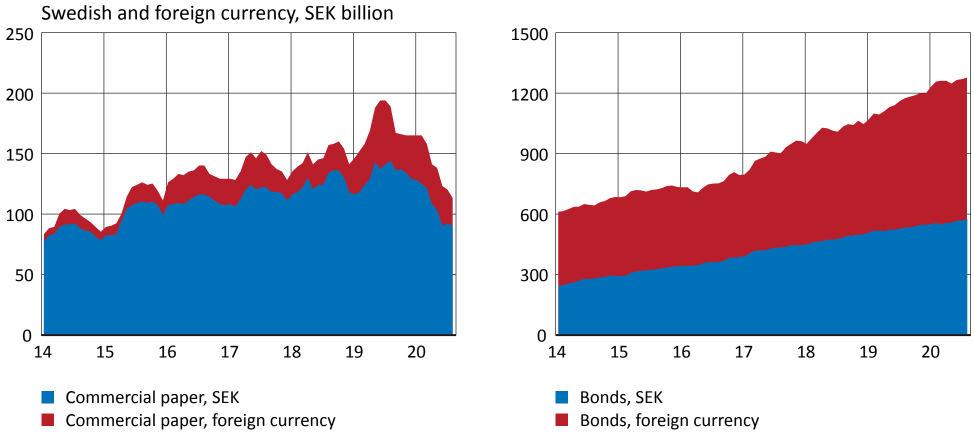
Large companies experienced a rapid worsening of market funding conditions

Relatively few, relatively large companies use market funding as a form of funding.[51] When the Riksbank decided to purchase commercial paper in March, about 70 companies had outstanding paper and slightly fewer than 300 companies had issued bonds.[52] During the more turbulent phase of the crisis, activity on the primary market for corporate debt

51 For a more detailed description of the markets for corporate debt securities, see Wollert (2020) and Sveriges Riksbank (2020a).
52 Of the companies that had issued commercial paper, about 30 companies had commercial paper that fulfilled the criteria announced by the Riksbank for its purchases. In terms of issued volumes, these were dominated by property companies.

securities slowed down significantly, particularly for commercial paper. While the volume of outstanding bonds recovered rapidly, the volume of outstanding commercial paper decreased markedly over the spring and summer (see Figure 21). This meant a clear shift in the trend development and, between January and August, the market for commercial paper shrank by almost one third, from SEK 165 billion to SEK 113 billion in nominal volumes.[53] One possible explanation for this is that maturities for commercial paper are short and many companies were therefore forced to refinance these loans over the spring. When the markets for corporate debt securities were functioning poorly, market funding looked like a relatively difficult and expensive way of covering short-term funding requirements. Many large companies then instead chose to increase their bank loans. At first glance, it is difficult to identify a clear downturn in companies' more long-term market funding. However, the outstanding volume of corporate bonds issued in foreign currency was largely unchanged between February and August after having grown by a yearly average of over 15 per cent between 2017–2019. Growth in the volume of corporate bonds issued in Swedish kronor also slowed down to some extent in the spring and summer (see Figure 21). This stronger development, compared to commercial paper, was probably largely due to there being less of a need to replace funding that had fallen due.

Figure 21. Outstanding nominal volumes of commercial paper and corporate bonds
Swedish and foreign currency, SEK billion

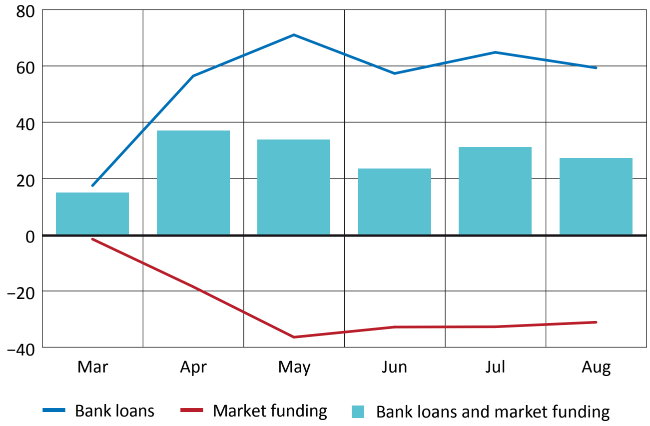


Source: The Riksbank

To investigate in more detail the behaviour of companies using market funding at the start of the crisis, we match the microdata material in the Riksbank's credit database (KRITA) with the corresponding material in the Swedish Securities Database (SVDB). This makes it possible to study how bank lending and the total credit volumes developed more specifically for these companies. This analysis suggests that these companies chose, to a greater extent, bank loans ahead of market funding during the crisis, as their increased bank borrowing more than compensated for the reduced market funding between February and August (see Figure 22). At the same time, borrowing in foreign currency decreased for these companies. Market funding in foreign currency decreased and bank loans in foreign currency were almost unchanged.

53 The percentage downturn was slightly smaller for certificates issued in Swedish kronor, which made up close to 80 per cent of outstanding volumes in August.

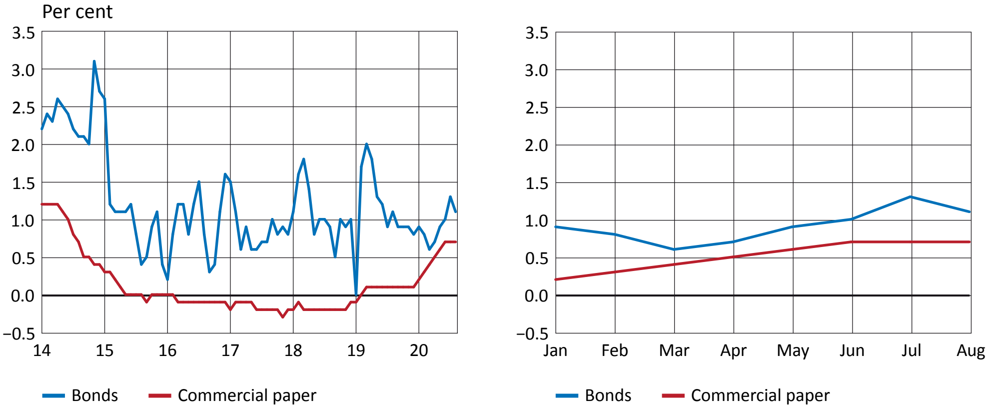
Figure 22. Accumulated change in lending to companies with market funding, all currencies
SEK billion



Note. Companies with access to market funding refers to companies that, by themselves or through a corporate group, have issued commercial paper or corporate bonds since December 2019.
Source: The Riksbank

The rates that companies could issue at increased slightly for both commercial paper and bonds and, in August, they were still slightly higher than before the outbreak of the crisis (see Figure 23). However, it is worth noting that an increase of 30–40 basis points is not particularly large from a historical perspective. In addition, Statistics Sweden's volume-weighted statistics for these interest rates are volatile and should be interpreted with some caution. Compared with the interest rates companies had to pay on bank loans, interest rates on market funding generally seem to have increased slightly more for both shorter and longer maturities (see Figure 19 and 23). To some extent, this might explain the shift in larger companies' form of funding, from market funding to bank loans.

Figure 23. Yields for newly-issued commercial paper and corporate bonds issued in Swedish kronor
Per cent



Note. The yields refer to a 3-month moving average of the interest expenses for amounts issued during the month.
Source: Statistics Sweden

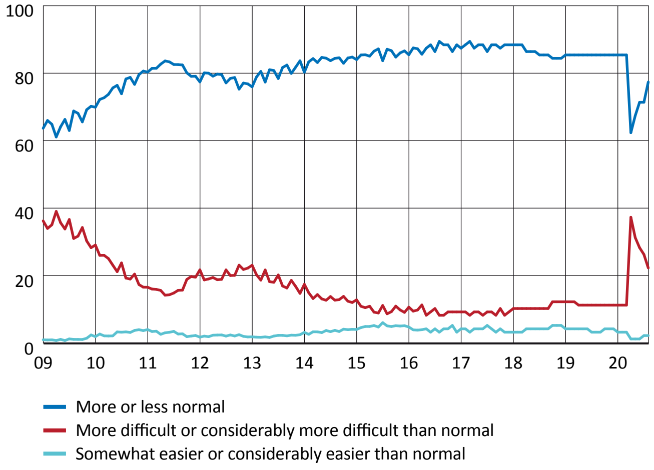
Between February and August, the overall volume of corporate funding via commercial paper and bonds decreased slightly. The interest rates on newly issued corporate paper in Swedish kronor had also increased slightly, both in absolute terms and in relation to interest rates on bank loans. This picture is largely compatible with companies' testimonies in the Riksbank's business surveys. At the start of June, companies were asked how their market funding had changed as a result of the pandemic. As relatively few companies are active on that market, it is natural that many companies responded that they were unaffected. However, of the companies that had experienced a change in conditions for market funding, half stated that funding was now taking place at a higher interest rate. Approximately one-quarter of these companies experienced difficulties in issuing the desired volumes. Some companies also found that they now needed to issue paper with shorter maturities.

Other indicators suggest a poorer funding situation for companies

Other surveys also suggested that companies' funding situation had deteriorated. In the National Institute of Economic Research's Economic Tendency Survey, the percentage of respondents experiencing their funding situation as more difficult or much more difficult than normal increased rapidly in April in the wake of turbulence in the financial markets.[54] The percentage then gradually decreased slightly but, in August, was still higher than prior to the crisis (see Figure 24).

Figure 24. Funding your company's operations is currently …

Percentage of responses



Source: National Institute of Economic Research

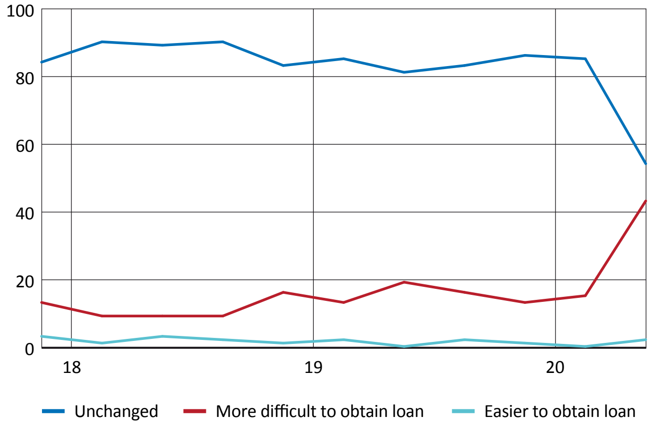
Furthermore, the survey can be broken down by both sector and company size. The breakdown by sector confirms the prevalent view that it was primarily the service sector and trade sector that were impacted severely. Companies with fewer employees also stated to a greater extent than companies with more employees that their funding situation was more difficult. At the same time, a larger proportion of companies in all sectors and size groups experienced a more difficult funding situation in August than prior to the crisis.

Almi also conducts regular surveys of bank managers to monitor the development of the banks' lending to households and companies in its lending indicator.[55] Like the Economic Tendency Survey, Almi's survey indicated that companies found it more difficult to obtain funding in the second quarter of 2020 and that the service industry and retail trade were worst affected. The proportion of managers assessing that companies were finding it harder to raise loans increased strongly and amounted to 43 per cent, compared with 15 per cent in the first quarter (see Figure 25). A larger proportion of managers also deemed that bank lending to companies had decreased and that more loan applications were being rejected.

54 Over the period February 2018 to April 2020, these questions were asked on a quarterly basis. The survey focuses on approximately 5,500 companies of various sizes in the manufacturing, construction, trade and service sectors. The response rate is 70 per cent for the manufacturing sector and construction and civil engineering, and approximately 60 per cent for the trade and service sectors.

55 Almi's lending indicator is based on telephone interviews with 150 bank managers and Almi managing directors in the regional companies within corporate partners across the entire country. Bank branches' lending to the corporate sector mainly goes to small and medium-sized enterprises. Almi's lending goes to small and medium-sized enterprises across the entire country. The survey covering the second quarter is based on telephone interviews held over the period 26 May to 10 June 2020.

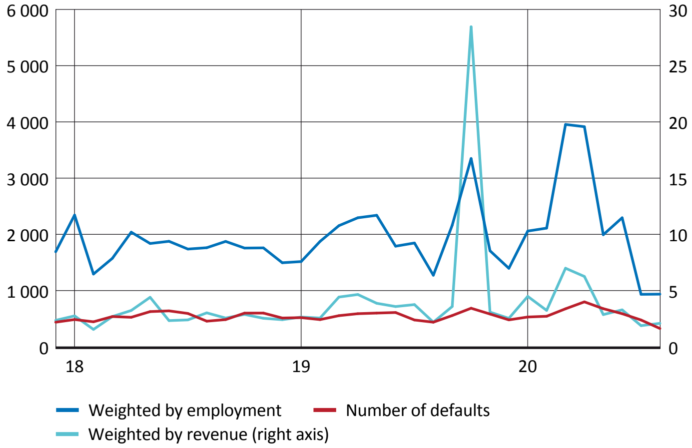
Figure 25. Do you consider it to be easier, more difficult or the same for banks' corporate customers to raise a loan, in comparison with previous quarters?
Percentage of responses



Source: Almi

One further indicator of problems with companies' credit supply could be the number of bankruptcies. The number of bankruptcies increased clearly towards the end of March and was also significant in April and May, before falling back over the summer months (see Figure 26). It is, of course, difficult to use aggregated data to identify whether the tightening of the credit supply has played a significant part in this development or whether companies were already struggling with problems before the outbreak of the crisis. However, in a study of bankruptcies taking place between March and June, Cella (2020) finds, among other conclusions, that the companies affected were highly indebted, unprofitable and relatively illiquid compared with their competitors. It is therefore at least not clear-cut that more comprehensive measures to support the credit supply would have played a decisive role for the survival of these companies.

Figure 26. Bankruptcies, limited liability companies
Number (left scale) and SEK billion (right scale)



Note. Bankruptcy statistics in October 2019 are largely impacted by the bankruptcies of Thomas Cook Northern Europe and Ving Sverige (these companies had almost 800 employees and turnover was almost SEK 18.5 billion). However, all operations and staff were transferred into a newly-formed group with new owners.
Source: Creditsafe

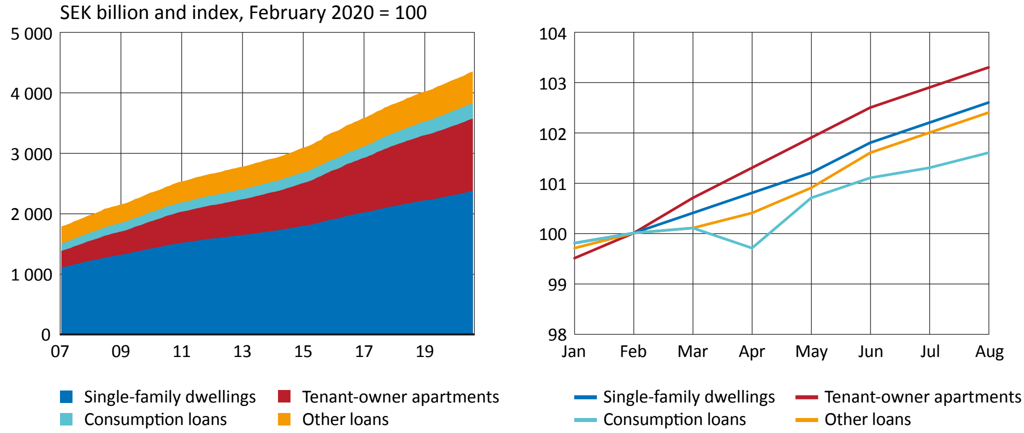
4.3 Minor effects on the housing market and household credit supply

Overall, there are few signs that demand for housing and mortgages fell over the spring and summer. Neither are there any clear indications that the banks tightened the terms for mortgages. Nevertheless, Finansinspektionen made it possible for households to obtain temporary exemption from the amortisation requirement. The continuing good demand for housing means that total household debt continued to increase at approximately the same rate as prior to the crisis (see Figure 27). The interest rates households paid for their loans were also largely unchanged (see Figure 28).[56] In addition, the banks' costs for funding their mortgages were again at very low levels in August (see Figure 9).

The unease in March was primarily a matter of weaker demand in the wake of the pandemic, but there was also concern that unemployment would increase and make the banks less inclined to grant loans to households. As Swedish banks largely use market funding to fund their mortgages to households, there was a risk that household mortgage rates could rise when conditions on the financial markets deteriorated and the banks' funding became more expensive. As 80 per cent of household debt is made up of loans with housing as collateral, the household sector may be particularly sensitive for changes in mortgage rates. Normally, such a rise in interest rates can be counteracted by a lower repo rate. However, as we discussed earlier, cutting the interest rate could be less effective due to restrictions and changed behaviour. Consequently, the Riksbank instead announced purchases of covered bonds, partly to counteract rising interest rates, partly to ensure the market for covered bonds was continuing to work well.

Even though unemployment was rising, housing prices only decreased slightly in April, according to the HOX housing price index. After this, prices recovered and, in August, they were about 3 per cent higher than in February. One important explanation for this was probably that the crisis had had the greatest impact on parts of the service industry. This sector employs many young and low-paid workers, who belong to groups that make up only a small part of the mortgage market. Another possible explanation is that the pandemic led households to value their housing and living spaces more than previously.

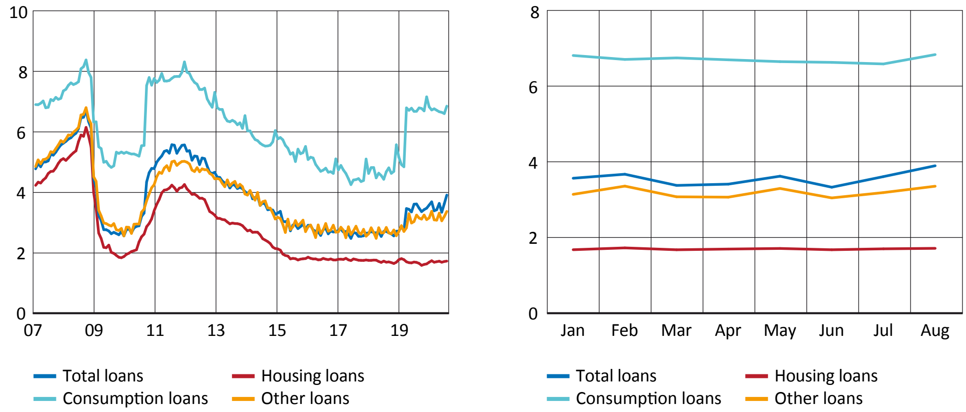
Figure 27. The banks' lending to households by collateral
SEK billion and index, February 2020 = 100



Source: The Riksbank

56 The change was very small for mortgages of all maturities.

Diagram 28. Lending rates to households by purpose
Per cent



Source: The Riksbank

5 No comprehensive credit crunch but many companies faced major challenges

In the beginning of 2021, the infection is continuing to spread across the globe and it is too early to evaluate in more depth whether the measures adopted by the Riksbank and other actors were sufficient to counter the coronavirus pandemic and avoid more long-term economic damage. However, the synchronised economic policy response from both Swedish and foreign governments and central banks at least seems to have prevented a deep and probably more prolonged recession during the first wave of the pandemic.

The pandemic brought about an enormous and synchronous strain on the global economy in the spring of 2020, with a dramatic global decline in demand and production. Production capacity decreased and demand for certain goods and services collapsed, quickly pushing many companies into a liquidity crisis. This development immediately had an impact on the global financial markets. The threat of a severe financial crisis and a deeper and more prolonged recession resulted in massive measures from governments and central banks around the world. Many measures were aimed at helping companies and also, to a certain extent, households get through the period of spreading infection and lower demand. For example, the Riksbank adopted a number of measures to ensure that banks, companies and households could obtain funding but also to ensure that the Riksbank's low repo rate would have full impact on the interest rates paid by companies and households on their loans. The measures involved different forms of liquidity support to the banking sector, but also comprehensive asset purchases. This was primarily because the repo rate was already very low and the Riksbank deemed that it would not be effective to cut it further under the prevailing circumstances. Several of the measures were designed as insurance against a worse scenario, considering the nature of the crisis and the great uncertainty over how the spread of infection would develop. As an example, the banks used the Riksbank's lending programme to a relatively minor extent, but they did so primarily during a period when alternative sources of funding were relatively expensive. It was probably reassuring for the banks to know that the lending programme was in place if the situation should deteriorate, which in itself may have contributed to banks' being able to maintain the credit supply. The Riksbank's liquidity assistance measures gave the banks access to very large amounts of liquidity in Swedish kronor and US dollars at an interest rate that was only slightly higher than the repo rate. In several cases, the Riksbank also purchased assets to restrain or prevent risk premia on strained markets from rising further and thereby risking a further increase in corporate and household interest expenses.

In this article, we have primarily discussed the measures the Riksbank adopted to ensure an efficient credit supply at a low cost but, of course, these measures worked in close interaction with fiscal policy decisions and the comprehensive measures taken by foreign governments and central banks. Together, they helped the financial conditions turn more expansionary. In August, yields on the Swedish bond markets had fallen to about the same levels as before the crisis. Swedish banks also report that the Riksbank's measures had had an effect, on certain markets in particular. It is significantly more difficult to identify the effects of the Riksbank's measures in the corporate sector. At the same time, it should be remembered that, to a significant degree, these aimed to prevent a worse scenario in which companies' borrowing rates could have risen steeply. But companies' costs for bank loans and market funding were largely unaffected in the spring and summer of 2020. Neither were mortgage rates, which are important for households' cash flows, affected appreciably.

Even though it is difficult to estimate how the underlying need for credit evolved over the crisis, at least loan volumes did not decrease to any greater extent. However, it would be unwise to draw any far-reaching conclusions yet, as tighter credit terms usually lead to lower credit growth with some delay. It is also very important to bear in mind that there was a great difference in how companies were affected. Companies in certain sectors lost a very large proportion of their incomes, such as companies with close links to tourism. Such losses of income may also be significantly more difficult to manage for smaller companies with small balance sheets and limited loan collateral. It is, of course difficult to identify how much changes in demand and supply meant for the development of credit volumes in the spring and summer of 2020. At the same time as companies can be expected to demand short-term credit to a greater degree to meet falling incomes and, to a certain extent, to replace funding through commercial paper, willingness to invest has probably decreased. Demand for more long-term funding has thereby been restrained, which has some support in more disaggregated data. Over the summer and spring, it was constantly reported, in surveys by the Riksbank, the National Institute of Economic Research and Almi, that companies faced tighter terms and higher borrowing costs than before the crisis. Even if it is not as clear in the available statistics, this suggests a certain tightening of credit on behalf of the banks.

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