



Summary

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This FI analysis describes the funding structure of the major Swedish banks in the period 2002–2019. The analysis, which primarily has a descriptive approach, describes the structure of the banks' total balance sheets and how this has changed over time, with a focus on the banks' funding. However, there is also discussion of the overall risk profile and conclusions are drawn to the extent this is possible.

The period analysed therefore does not cover the effects of the ongoing pandemic and its impact on the financial markets through the various monetary policy and supervision measures put in place by central banks and supervisory authorities in 2020 and 2021. These measures have led to a sharp increase in liquidity in the financial system, which has had clear effects on the funding structure of the banks. This is not otherwise commented on in this analysis.

The analysis shows that the major Swedish banks have had a large share of market funding through issues of commercial paper and covered and unsecured bonds. Market funding has increased over time and, at the end of the period, constitutes a share of total funding equal to that of deposits. At the beginning of the period, the share of wholesale funding was around 10 percentage points lower. In addition, the major banks also have the largest share of market funding issued in foreign currencies. However, short-term market funding in the form of commercial paper has decreased in favour of bonds, which is a longer form of funding. This is likely to be a consequence of regulatory requirements such as the liquidity coverage ratio (LCR) and net stable funding ratio (NSFR), which probably have affected the maturity of these liabilities to be longer overall.

Although market funding has increased in terms of its share of the banks' total liabilities, the ratio between lending and deposits in Swedish kronor has decreased. This means that lending in Swedish kronor at the end of the period is covered by deposits to a greater extent. However, the trend for foreign currency has been the opposite. At the beginning of the period, the banks had a large surplus of deposits, but now market funding is also required in foreign currency in order to cover the deficit in funding of foreign lending operations. At the same time, the use of unsecured debt issued in foreign currency has decreased sharply in order to cover the funding deficit that exists in Swedish kronor. This reduction applies both as a share of the deficit and in nominal terms. This has taken place at the same time as the banks' total balance sheets have expanded by around 150 per cent over the period. In addition to covering a funding deficit in Swedish kronor and the deposit deficit in foreign currency, the banks also use a large portion of their market funding for the liquidity reserve in foreign currency.



Introduction

During the global financial crisis, which started in 2007 and culminated towards the end of 2008, the shocks to the financial markets were so great that their functionality significantly deteriorated and in some cases even stopped working. This meant that some banks in Sweden and in many other countries found it difficult to raise funding on the capital markets, while substantial withdrawals were being made from their deposit funding. This made it more difficult for the banks to run their operations. Against this background, Finansinspektionen stressed in previous stability assessments that the Swedish banking sector's use of market funding¹, particularly in foreign currencies, could be a vulnerability in the Swedish financial system. This vulnerability is linked, inter alia, to the banks' foreign investors, who were less willing to reinvest maturing market funding with the banks during the financial crisis. This risk profile was also common among other relevant authorities.² The Swedish banks' use of market funding has also been highlighted in the international arena. For example, the International Monetary Fund (IMF) stressed the importance of supervising liquidity risks in Sweden.³

Swedish banks have a high proportion of market funding compared with many other European banks.⁴ This is partly due to the savings structure in the Swedish financial system, as there is a higher proportion of private savings in funds and pension solutions than in bank accounts.⁵ The pension and insurance companies therefore play a greater role as financial intermediaries, which explains why there is a larger structural deposit deficit⁶ in Swedish banks. As well as for the savings structure in Swedish krona, the banks have a high proportion of market funding in foreign currencies. One of the main reasons for this is the demand for foreign investments among pension and insurance companies. The banks therefore issue securities so that they can meet the demand for foreign currencies.⁷

During a financial crisis, vulnerabilities in Swedish banks' borrowing can be a crucial factor in the stability of the Swedish economy. This is why their risk profile has to be continually evaluated. The question as to whether a specific funding structure contains stability risks that could materialise during a crisis depends on the liquidity of the banks' assets and the stability and functionality of the banks' borrowing methods. However, each crisis is unique, so it is difficult to fully predict the consequences of a specific funding structure.

1 *Market funding* refers to the securities issued by the banks and can be divided into the following categories: 'secured' and 'unsecured' market funding.

2 See FI's Stability Report 2018: 1 and the minutes from the meeting of the Financial Stability Council on 4 December 2018.

3 See the IMF's 2017 Article IV Consultation with Sweden.

4 See the EBA Risk Dashboard 2019 Q4, Loan-to-deposit ratio for households and non-financial corporations, where the average deposit deficit for the EU and Sweden is approximately 115% and 210% respectively.

5 See the Riksbank study *'Från ax till limpa: den svenska bolånemarknaden och dess roll i det finansiella systemet, 2014'*.

6 Deposit deficit describes a bank's lending in relation to its deposits.

7 See the Riksbank's *'Finansiell stabilitetsrapport 2020:1, Sammanlänkningen mellan försäkringsföretag, AP-fonder och banker via valutamarknaden'*.

Table 1. The banks' market funding

	Secured	Unsecured
Short-term	Repurchase agreement	Certificate (CD/CP)
Long-term	Covered bonds	Senior bonds Senior non-preferred Capital instruments

Source: FI.

Note: CD/CP = Certificate of Deposit/Commercial Paper.

This analysis charts the historical development of the balance sheets of the major Swedish banks,⁸ focusing on their funding structure. The three major banks in Sweden combined account for more than 50 per cent of lending in Sweden, which means that they play a crucial role in the stability of the financial system. This survey aims to increase knowledge of the banks' funding structure and any vulnerabilities that this structure could have. A description of the historical development of their structure provides a better understanding of how it has changed over time and therefore provides a basis for assessing its vulnerabilities in terms of financial stability. The results that are presented here can also form the basis for a more detailed analysis of this structure.

What governs a bank's funding structure?

In general, a bank's funding structure is governed by its business model, and therefore by the composition of its customer base. The business model and customer base are crucial to the structure of the bank's asset side, while also laying the foundations for the bank's funding. There is therefore a natural structure for assets and funding, which means that banks not only have a borrowing structure to take into consideration, but also a deposit structure, which is also a consequence of the bank's core business. The business model therefore creates restrictions for both assets and funding. Banks also have to evaluate which other forms of assets and funding are required to cover deficits and to meet internal and external requirements.

Funding strategies are affected by a number of factors that banks need to consider. This includes liquidity management, where banks have to ensure that they have sufficient funds to meet their payment obligations. In addition to this, the banks' asset and liability management has to take into account a number of other factors, including:

- risk appetite
- capital planning
- expected growth of the bank's assets
- investors' investment strategy
- funding costs
- diversification
- statutory liquidity and capital requirements.⁹

Deposits and market funding are the main sources of funding for the major Swedish banks. Many different financial instruments are used to obtain market funding (see Table 1 for the main groups and characteristics). The securities that are issued can generally be ranked in the order of priority that investors use during bankruptcy proceedings. Borrowing can be either secured or unsecured, and both short-term and long-term; short-term usually refers to liabilities that have a maturity of less than one year, while long-term is for liabilities

⁸ The three banks are Svenska Handelsbanken, Skandinaviska Enskilda Banken and Swedbank.

⁹ This refers to the liquidity coverage ratio (LCR), stable net financing ratio (NSFR) and minimum requirements for own funds and eligible liabilities (MREL).

with a maturity of more than one year. Borrowing can also be carried out in foreign currencies to cover the banks' need for foreign funding. This can be used to fund¹⁰ operations in foreign currencies or converted into Swedish krona through derivative instruments.

Funding through deposits comes in various forms and currencies and can originate from different segments, including, for example, households, companies, the public sector and financial actors. Deposits can also be both short-term and long-term, but their contractual maturities are generally shorter than market funding. However, it should be noted that the relatively short contractual maturity does not normally reflect the actual maturity, which is governed by the behaviour of the depositors at the banks. It is therefore extremely important for the banks to analyse their deposits and take historical and behavioural patterns into consideration, which they are also bound to do in accordance with various regulations.

As previously described, a relatively large proportion of the borrowing of the major banks is in foreign currencies. Some of this borrowing is converted into Swedish krona using derivative instruments. The Swedish banking system has a structural borrowing deficit in Swedish krona, as described earlier. One of the main reasons for this is the fact that pension and insurance companies demand foreign currencies for foreign investments; this is normally carried out through 'currency swaps'. This causes asymmetry between assets and liabilities in Swedish krona and foreign currencies, as banks generally have more borrowing than assets in foreign currencies, and therefore less borrowing than assets in Swedish krona.

It is important to point out that the maturities of currency swaps are normally matched with the corresponding borrowing in foreign currencies. These swaps mean that there is no liquidity risk for the banks in a specific foreign currency. However, just like with short-term borrowing in Swedish krona, there are liquidity risks if the borrowing is used to fund assets with longer maturities. One difference compared with direct funding in Swedish krona is that the behaviour of foreign investors may be affected by shocks that are not closely associated with either Swedish banks or Swedish conditions. In other words, when obtaining funding in a foreign currency, it is not a problem to borrow in a different currency. Problems can arise if a large proportion of this funding is short term and volatile, and is also funding long-term assets.

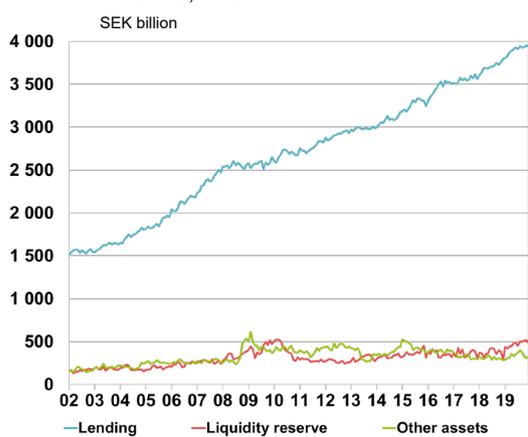
Trends in the balance sheets of the major banks

This section describes the historical trends in the combined balance sheets of the three major banks in Sweden and illustrates how the structure has differed over time, particularly when compared with the period surrounding the global financial crisis in 2007–2009. The period that has been studied is January 2002 to December 2019.¹¹

¹⁰ The term *fund* is used in this document, although the strict meaning of the word does not necessarily mean a specific kind of funding is intended for a specific kind of asset.

¹¹ The data used is from the data reported to Statistics Sweden (SCB). A consolidated situation has been approximated using the banks' parent companies and Swedish subsidiaries.

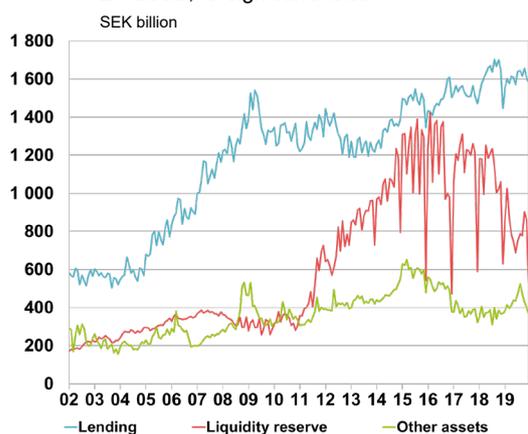
1. Assets, Swedish krona



Source: SCB & FI.

Note: Other assets comprise: shares/participations; property, plant and equipment; intangible assets, subscribed capital unpaid; claims on securities settlement proceeds; derivative instruments; accounting adjustments, for the protection of receivables; and other

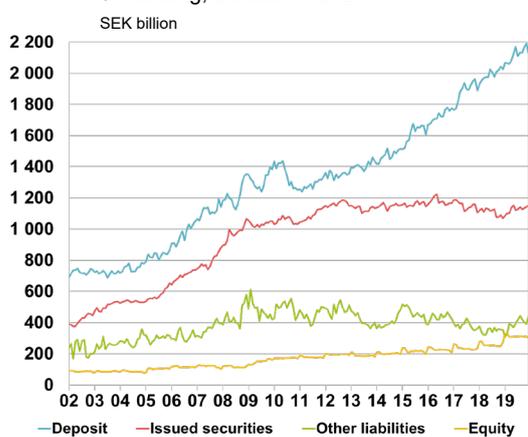
2. Assets, foreign currencies



Source: SCB & FI.

Note: Other assets comprise: shares/participations; property, plant and equipment; intangible assets, subscribed capital unpaid; claims on securities settlement proceeds; derivative instruments; accounting adjustments, for the protection of receivables; and other

3. Funding, Swedish krona



Source: SCB & FI.

Note: Issued securities are defined as the sum of commercial papers, bonds, other securities and subordinated loans. Other liabilities comprise: untaxed reserves; liabilities on securities

ASSETS AND FUNDING

The total assets of the major banks increased by approximately 150 per cent during the period, both for assets in Swedish krona and in foreign currencies. The distribution between different asset types in Swedish krona remained relatively unchanged, but it varied much more in foreign currencies (see Diagrams 1 and 2). Specifically, the distribution between liquidity reserves and lending varied more in foreign currencies; this is mostly because of the large increase in the banks' liquidity reserves¹² and their significant variations. However, on the whole the assets mostly comprised lending; assets in Swedish krona amounted to approximately two-thirds of the total assets. The assets in Swedish krona accounted for more than 80 per cent of lending, a proportion that remained relatively stable over time. The rate of increase in lending in Swedish krona also remained relatively constant. During the financial crisis, there was a slight decline in new lending, but it increased again in the following years. Lending in foreign currencies increased significantly in the period before the financial crisis, but then stalled both during and after the crisis. This stagnation remained until 2014, when lending started to increase again.

The funding structure of the major banks can be divided into four categories in order to illustrate how borrowing has developed over time (see Diagrams 3 and 4). In terms of borrowing, the currency distribution between Swedish krona and foreign currencies remained relatively even, with only a minor shift in favour of Swedish krona. However, the distribution in total currencies between deposits and issued securities¹³ changed slightly over time. Although deposits accounted for a slightly larger proportion of borrowing than issued securities at the beginning of the period, the categories are currently about the same size. Issued securities generally display less volatility than deposits. However, in this instance deposits include all forms of deposits, including those from financial counterparties that tend to be the most volatile. Looking at the currencies, there was much lower volatility in Swedish krona for both deposits and issued liabilities. The main difference is the extremely volatile pattern for deposits in foreign currencies.

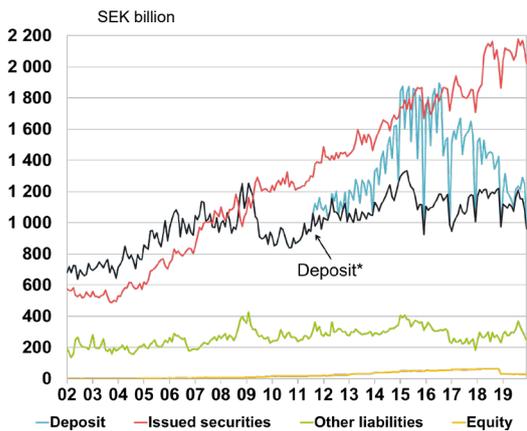
There is a clear pattern for issued securities, where the biggest increase in outstanding amounts since the financial crisis has been in foreign currencies, while the volume of issued securities in Swedish krona remained generally unchanged. From 2002 until the start of the financial crisis, the proportion of borrowing through issued securities in Swedish krona and foreign currencies was the same. The most recent observation shows that issued securities in foreign currencies account for approximately two-thirds of the total volume. There has

Foreign subsidiaries are not included, so some foreign operations have not been captured (although internal loans to foreign subsidiaries are included). However, foreign branches that form part of the banks' Swedish companies are included. Swedbank's and SEB's operations in the Baltic countries are not reported here as they are carried out through subsidiaries. This also applies to SHB's operations in the United Kingdom from the end of 2018. On the whole, it means that the data covers a significant proportion of the banks' operations, even though not all parts can be included.

12 The liquidity reserves comprise cash and balances with central banks, treasury bills eligible for refinancing, as well as bonds and other interest-bearing securities.

13 Issued securities refers to the sum of commercial papers, covered and unsecured bonds, other securities and debenture loans.

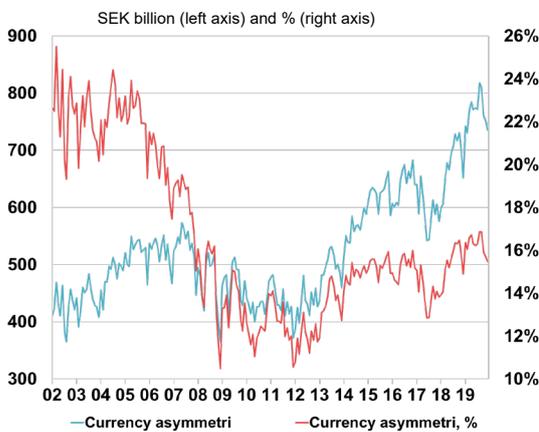
4. Funding, foreign currencies



Source: SCB & FI.

Note: Deposits* have been adjusted by excluding a section of cash and balances with central banks.

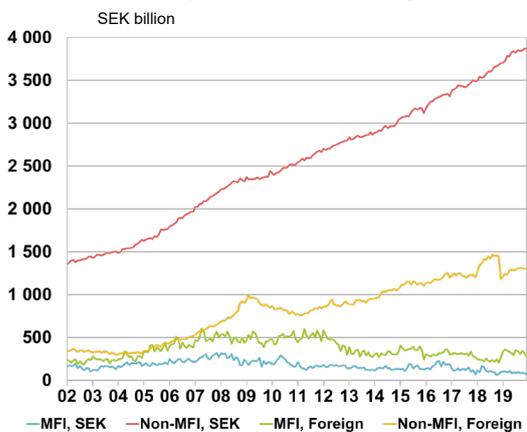
5. Currency asymmetry



Source: SCB & FI.

Note: Currency asymmetry describes the difference between assets and funding in Swedish krona. Currency asymmetry as a percentage has been calculated as currency asymmetry as a proportion of assets in Swedish krona.

6. Lending, Swedish krona, foreign currencies



Source: SCB & FI.

therefore been a shift over the past decade from market borrowing in Swedish krona to market borrowing in foreign currencies. Unlike issued liabilities, deposits in foreign currencies have remained unchanged since the financial crisis, while there has been a noticeable and stable increase in deposits in Swedish krona over time.

It is also clear that in recent years there have been significant variations in the volume of deposits in foreign currencies; the total amount can vary by the equivalent of several hundred billion Swedish krona from one month to the next. These variations are mostly seen at the end of financial quarters or years. However, regardless of these effects, deposits tend to be more volatile in foreign currencies than in Swedish krona. The deposits that cause effects at the end of quarters and years probably do not fund borrowing, but are mostly invested as liquid assets with central banks. An adjustment can be made to exclude a large proportion of the deposits that cause these volatile patterns in order to gain a better understanding of the deposits that are held for the banks' core business.¹⁴ This adjustment results in deposits being much less volatile, with the trend remaining more or less the same over the past decade (see Diagram 4). This new pattern is also more consistent with lending in foreign currencies during the same period. Over the past decade, deposits in Swedish krona have increased significantly, while deposits in foreign currencies have remained unchanged, which is the opposite of the development in issued securities.

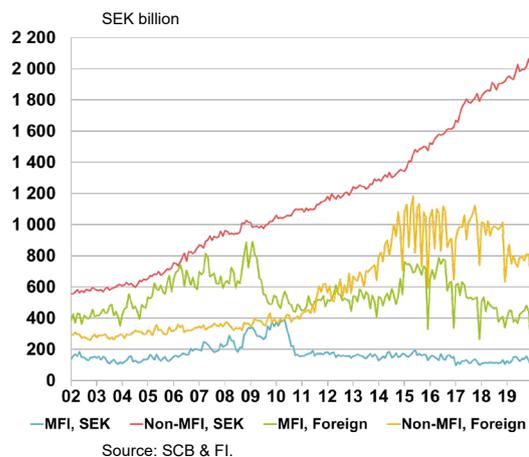
Finally, the difference between assets and funding in Swedish krona should be highlighted. This is an area where banks, as previously mentioned, have a funding deficit. The deficit almost doubled during the period, from approximately SEK 400 billion to just under SEK 800 billion, against the backdrop of a substantial increase in the banks' balance sheets. However, it fell from approximately 22 per cent to around 15 per cent in relation to assets in Swedish krona. It should be noted that the deficit decreased in relation to assets in the first half of the period, but has been relatively stable over the past decade, with only a slight increase in recent years (see Diagram 5).

LENDING CATEGORIES

By dividing lending between monetary financial institutions (MFIs) and non-MFI categories, it is clear that lending in Swedish krona only increased in the non-MFI category. This category mainly comprises lending to households and non-financial companies and has been a driving force in the increase in the major banks' balance sheets, with the property and real estate market in Sweden being mostly responsible for this trend. However, lending in Swedish krona to MFIs remained relatively stable throughout the period. The corresponding distribution in foreign currencies shows a similar pattern, with lending to the MFI category remaining relatively unchanged, while non-MFIs were a driving force in the growth seen in lending, although to a much lesser extent than for lending in Swedish krona (see Diagram 6).

¹⁴ This adjustment has been made by excluding cash and balances with central banks in US dollars from deposits in foreign currencies.

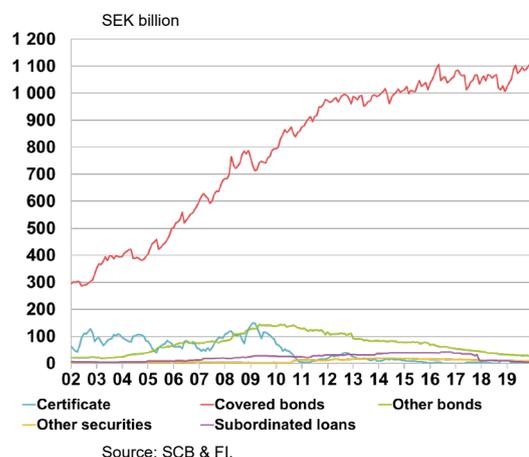
7. Deposits, Swedish krona, foreign currencies



DEPOSIT CATEGORIES

Deposits can also be divided into the MFI and non-MFI categories in order to gain a clearer picture of the banks’ funding structure. This shows that the non-MFI category, i.e. households and non-financial companies, was the main contributing factor to the increase in deposits in Swedish krona. However, the MFI category saw very little change over time, except for the Riksbank’s lending to the banks during the financial crisis. For deposits in foreign currencies, the distribution between MFIs and non-MFIs was more equal; although the non-MFI category increased over time, while MFIs remained relatively unchanged. It is clear that deposits in foreign currencies are much more volatile than in Swedish krona, whether they are deposits from MFIs or non-MFIs (see Diagram 7). As previously described, the variations in foreign currencies are mainly due to deposits in US dollars.

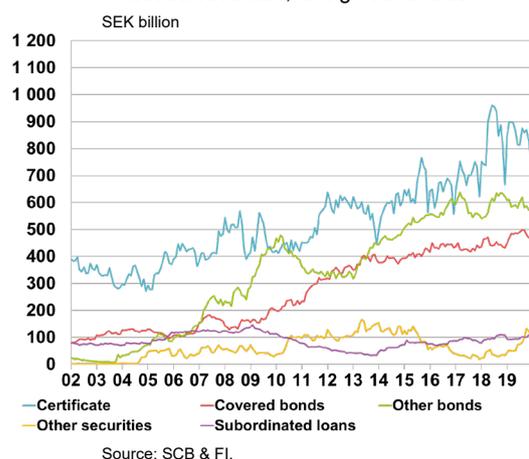
8. Issued securities, Swedish krona



ISSUED SECURITIES

Issued securities can also be divided between currency and category. The outstanding volume of covered bonds issued in Swedish krona increased significantly over time, particularly during the first half of the period. However, there was a clear change in the trend in around 2012, after which the rate of increase fell sharply. The volume of other bonds (unsecured bonds) increased at the beginning of the period, but gradually fell; the most recent observation shows that they are now almost non-existent. There was also a market for commercial papers in Swedish krona in the first half of the period, but this market is virtually no longer used either. The outstanding volume of issued securities in Swedish krona therefore comprised almost exclusively covered bonds at the end of the period. In the years following the financial crisis, the total volume of issued liabilities in Swedish krona remained largely unchanged, as previously mentioned (see Diagram 8).

9. Issued securities, foreign currencies



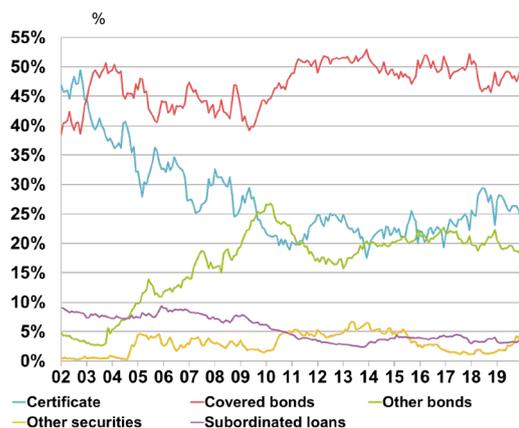
Unlike Swedish krona, there was an increase in outstanding volumes in both commercial papers and bonds in foreign currencies, both secured and unsecured. However, the increase was much greater for bonds than for commercial papers. In total, bonds currently account for slightly more than half of the total outstanding volume of issued securities in foreign currencies, while commercial papers accounted for almost 80 per cent at the beginning of the period (see Diagram 9).

The distribution in total currencies between short-term (commercial papers) and long-term (issued securities in addition to commercial papers) changed during the period as the proportion of long-term securities increased. The most recent observation shows that the proportion of long-term securities amounts to 75 per cent of issued securities, while the proportion at the beginning of the period was approximately 55 per cent (see Diagram 10). It is mostly the volume of covered bonds in Swedish krona that is behind this increase, but also covered and unsecured bonds in foreign currencies.

DEPOSIT DEFICIT

As previously described, the deposit deficit describes the relationship between a bank’s lending and deposits. The deposit deficit as a proportion of lending fell during the period for the major banks’ operations in Swedish krona, while the difference in monetary terms between lending and deposits increased. Deposits therefore increased

10. Issued securities, total currencies



Source: SCB & FI.

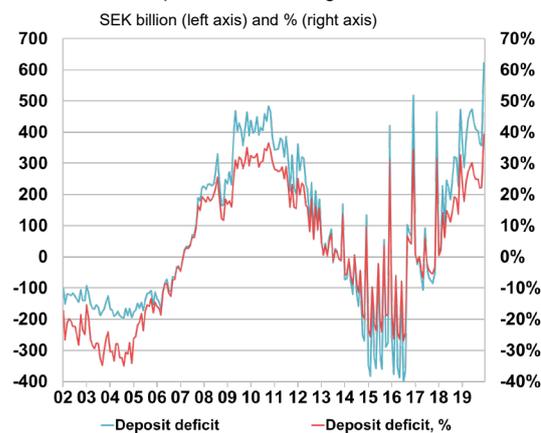
11. Deposit deficit, Swedish krona



Source: SCB & FI.

Note: Deposit deficit as a percentage has been calculated as the proportion of the deposit deficit in relation to lending.

12. Deposit deficit, foreign currencies



Source: SCB & FI.

Note: Deposit deficit as a percentage has been calculated as the proportion of the deposit deficit in relation to lending.

in percentage terms at a higher rate than lending; while in monetary terms lending increased more than deposits. The most recent observation shows that SEK 1,800 billion of lending in Swedish krona was funded by other means than deposits. The deposit deficit is currently approximately 45 per cent, while the deficit at the beginning of the period was approximately 55 per cent; at that time, the difference between lending and deposits was approximately SEK 800 billion. This means that lending that was not financed through deposits more than doubled in monetary terms during the period, even though it fell in percentage terms (see Diagram 11).

Before the financial crisis, the major Swedish banks had a deposit surplus in foreign currencies. However, this turned into a deficit from 2007, before rising sharply to reach a peak during the financial crisis, with an amount equivalent to almost SEK 500 billion. The proportion of lending not funded with deposits amounted to approximately 30 per cent. After the financial crisis, the proportion decreased once again due to an increase in deposits; however, there has been a growing trend in recent years, as lending increased once again (see Diagram 12).

The deposit deficit, calculated using the previously adjusted deposits, displays a similar pattern. The adjusted deposit deficit is much less volatile and has remained positive at all times over the past decade (see Diagram 13). However, the banks' deposit deficit in foreign currencies only appears to be responsible for part of the previously described increase in market funding, as the deposit deficit is much lower than the volume of issued liabilities. The remaining part of market borrowing in foreign currencies is therefore used to fund the liquidity reserves in foreign currencies and the deficit in funding in the banks' operations in Swedish krona.

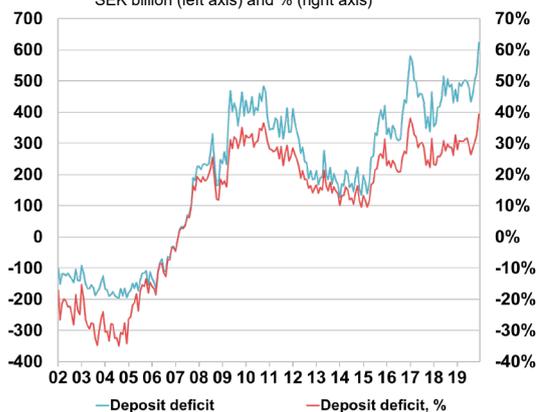
FUNDING DEFICIT

This section analyses the banks' total funding deficit¹⁵ in Swedish krona and therefore takes into account all funding in Swedish krona, not only deposits. One important source of funding for the major Swedish banks is covered bonds. Covered bonds can be linked to the funding of lending in Swedish krona with houses and other real estate as collateral, with the assumption that covered bonds issued in both Swedish krona and foreign currencies primarily only fund lending in Swedish krona. It should be remembered that some covered bonds in foreign currencies are used for collateralised lending in countries outside Sweden, and therefore in other currencies. However, these amounts are relatively small in relation to the total volume, so it should not be misleading to assume that covered bonds primarily fund lending in Swedish krona.

Adjusting the deposit deficit in Swedish krona with covered bonds in Swedish krona reduces the deficit significantly. The most recent observation shows that the proportion in relation to lending has fallen from approximately 45 per cent to between 15 per cent and 20 per cent, while the deficit in monetary terms has fallen from SEK 1,800 billion to approximately SEK 700 billion (see Diagrams 11 and 14). By making an adjustment for covered bonds in foreign currencies as

¹⁵ Funding deficit refers to the deficit that exists for funding assets in a currency, i.e. the difference between, for example, assets and funding in Swedish krona.

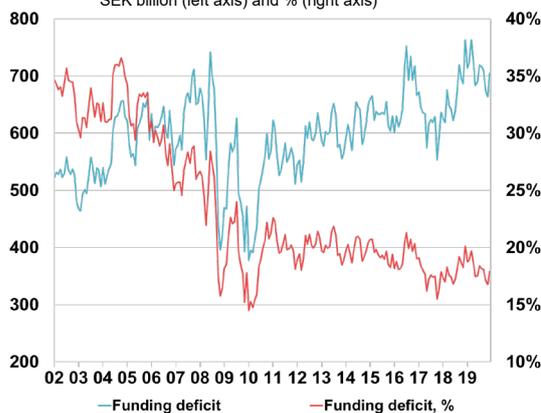
13. Deposit deficit, foreign currency, adjusted
 SEK billion (left axis) and % (right axis)



Source: SCB & FI.

Note: Deposit deficit as a percentage has been calculated in relation to lending. Deposit deficit has been adjusted by excluding a section of balances with central banks.

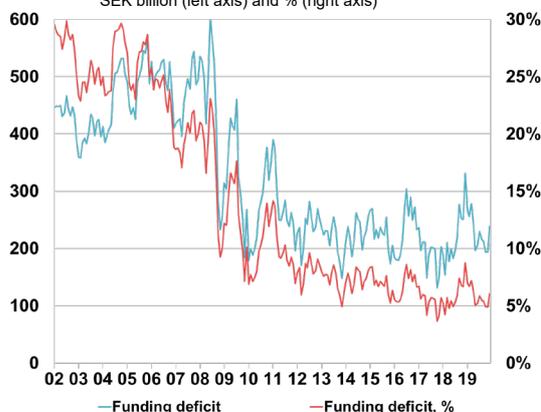
14. Funding deficit, Swedish krona
 SEK billion (left axis) and % (right axis)



Source: SCB & FI.

Note: Funding deficit has been calculated as the deposit deficit adjusted for covered bonds in Swedish krona. Funding deficit as a percentage has been calculated in relation to lending.

15. Funding deficit, Swedish krona
 SEK billion (left axis) and % (right axis)



Source: SCB & FI.

Note: Funding deficit has been calculated as the deposit deficit adjusted for covered bonds in Swedish krona and foreign currencies. Funding deficit as a percentage has been calculated in relation to lending.

well, the deficit falls by approximately 5 per cent or to between SEK 200 and SEK 300 billion (see Diagram 15). This means that the volume of lending in Swedish krona that is not covered by deposits in Swedish krona and covered bonds in any currency is relatively small. The remainder is covered by unsecured liabilities in foreign currencies and this proportion fell significantly in the first half of the period, after previously accounting for almost 30 per cent of lending.

The remaining assets and funding are included to complete the analysis of the funding deficit in Swedish krona.¹⁶ The most recent observation shows that by including these elements, the deficit changes marginally to slightly over 5 per cent or almost SEK 300 billion. The equivalent figures at the beginning of the period changed to between 20 per cent and 25 per cent or between SEK 300 and SEK 400 billion (see Diagram 16). The use of unsecured liabilities issued in foreign currencies to fund assets in Swedish krona is therefore relatively minor on the whole and has decreased over time, both in monetary terms, but particularly as a percentage of lending.

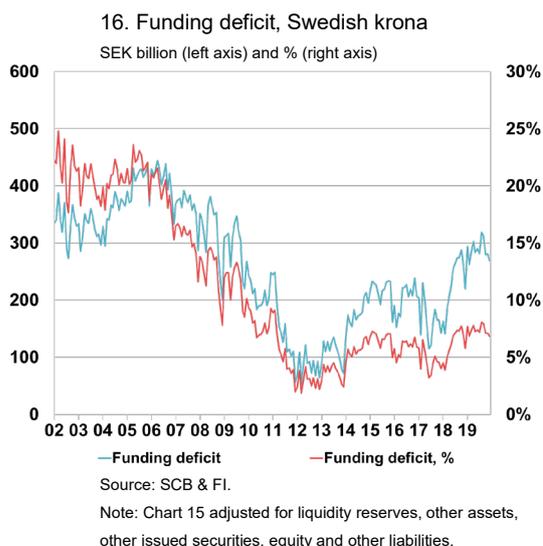
Summary and concluding remarks

The combined balance sheets of the major banks increased during the period by approximately 150 per cent, with the growth rate remaining fairly even between assets in Swedish krona and foreign currencies, where the proportion of assets in Swedish krona amounted to almost two-thirds. The distribution between Swedish krona and foreign currencies used for the banks' funding was relatively unchanged, at approximately 50 per cent each. At a general level, the structure of the combined balance sheets therefore did not change very much over time in terms of currency distribution.

Lending in Swedish krona increased significantly, reporting a stable growth rate over time. However, the average maturity of this lending cannot be determined using the data that is currently available, making it difficult to know the kind of refinancing risks that are associated with these assets. Lending in Swedish krona has mostly increased to households and non-financial companies. The fact that lending has increased to these categories could cause a refinancing risk, as these assets mostly comprise loans with properties as collateral; they often have a long capital commitment period, so cannot normally be easily sold if the bank needs liquidity. One important aspect of a future discussion on risk should therefore be to analyse the level of maturity matching between assets and liabilities, as if banks find it difficult to refinance their illiquid assets, this could prove important during a crisis.

Deposits also increased significantly, particularly following the financial crisis and especially for the non-MFI category in Swedish krona. The main reason why deposits from households and non-financial companies increased is the substantial rise in lending itself, which also resulted in an increase in deposits. However, it is important to point out that deposits include several different categories with different characteristics, and therefore with varying degrees of risk. As previously mentioned, deposits in foreign currencies have seen a lot of

¹⁶ Remaining assets refer to the liquidity reserves and other assets. Remaining liabilities are issued securities in addition to covered bonds, equity and other liabilities.



volatility, while deposits in Swedish krona have remained much more stable. This major difference in volatility between deposits in foreign currencies and Swedish krona is probably due to the fact that deposits in foreign currencies mostly come from large financial companies or institutions (including central banks). Deposits from the public are the category that is considered to be the least risky, particularly as they are often covered by deposit guarantees. Deposits in Swedish krona are mostly classified in this category.

The deposit deficit for lending in Swedish krona increased during the period in nominal terms, but fell as a proportion of lending. The most recent observation shows that approximately 45 per cent of lending in Swedish krona was funded by other means than deposits in Swedish krona. This deficit is covered by issues of securities in both Swedish krona and foreign currencies. In terms of foreign currencies, there is a corresponding deficit, with a proportion that is almost as high as in Swedish krona. However, the deficit in foreign currencies varied much more; at the beginning of the period there was even a surplus of deposits.

The analysis also shows that the major banks have a funding deficit overall in Swedish krona, with this deficit increasing in monetary terms during the period. However, this deficit in relation to lending fell significantly; i.e. the proportion of foreign borrowing that funds assets in Swedish krona decreased. Funding in foreign currencies for this purpose was carried out both through covered bonds and unsecured liabilities. At the end of the period, most of this deficit was funded through covered bonds. Just over 5 per cent of the major banks' lending in Swedish krona is funded through unsecured liabilities issued in foreign currencies. The banks' specific use of unsecured liabilities in foreign currencies to fund lending in Swedish krona therefore fell significantly during the period, from having accounted for 20 per cent to 25 per cent of lending.

At the same time, the analysis shows that the banks' issued liabilities also increased significantly in foreign currencies following the financial crisis, while issued liabilities in Swedish krona remained relatively unchanged on the whole. Both secured and unsecured liabilities increased. This means that unsecured liabilities in foreign currencies are mostly used for purposes other than covering the funding deficit in Swedish krona, as the volume far exceeds this deficit. This kind of borrowing is therefore used primarily for the deposit deficit and the liquidity reserves that the banks have in foreign currencies.

Note that the increase in covered bonds in foreign currencies contributed to a diversification of refinancing risks, as this funding is taking place to a greater extent through more markets. It is also worth noting that the proportion of bonds increased significantly in the unsecured liabilities segment. Bonds now account for approximately 40 per cent of unsecured market funding; this proportion was approximately 10 per cent at the beginning of the period. However, it is not possible to determine from these statistics how the average maturity of issued securities has changed over time, as the data does not capture the remaining maturities. Nevertheless, it is likely that there has been a significant increase, most likely as a result of the new liquidity requirements.

References

Finansinspektionen (2018), *Stabiliteten i det finansiella systemet 2018:1*, Finansinspektionen. An English translation is available at www.fi.se.

Kommittén för finansiell stabilitet, protokoll från Finansiella stabilitetsrådets möte, 4 December 2018.

IMF (2017), *Article IV Consultation with Sweden*, IMF Country Report No. 17/350.

European Banking Authority, *Risk Dashboard 2019 Q4*.

Riksbanken (2014), *Från ax till limpa: den svenska bolånemarknaden och dess roll i det finansiella systemet, 2014*, Riksbanken.

Riksbanken (2020), *Finansiell stabilitetsrapport 2020:1, Sammanlänkningen mellan försäkringsföretag, AP-fonder och banker via valutamarknaden*, Riksbanken.