RIKSGÄLDEN

21 February 2019

CENTRAL GOVERNMENT DEBT MANAGEMENT

Basis for Evaluation 2018

The Debt Office's mandate

One of the Swedish National Debt Office's main tasks is to manage central government debt. The objective is to minimise the long-term cost of the debt while taking risk into account. The debt management is to be conducted within the framework of monetary policy requirements.

Central government debt management is governed overall by the Budget Act (SFS 2011:203) and the Ordinance (2007:1447) containing instructions for the National Debt Office. These stipulate, for example, the purposes for central government borrowing and the objective of the debt management. The Government also establishes guidelines steering the composition and the maturity of the debt.

The Government sets out the guidelines each year no later than 15 November. The decision is made after the Debt Office has issued proposed guidelines that have been submitted to the Riksbank for consultation.

The Debt Office's operative role then includes, within the provided framework, funding central government budget deficits and refinancing maturing loans.

Each year in February, the Debt Office submits a basis for evaluation of the debt management to the Government. The Government subsequently submits an evaluation to the Riksdag (Swedish Parliament) in April every other year.

Both the proposed guidelines and the basis for evaluation are published at riksgalden.se.

Contents

The year in brief

- The central government budget showed a surplus for the third year in a row, and central government debt decreased to 26 per cent of GDP – the lowest level in 40 years. This is partly explained by the continued strength of the Swedish economy as well as the fact that companies and other legal entities continued to use their tax accounts to place capital.
- The borrowing requirement decreased in 2018, due to the budget surplus along with a low volume of maturing loans. In its February forecast, the Debt Office therefore reduced the issuance volume of government bonds to a record-low level and stated that lowering it further would not be feasible without risking poorer borrowing preparedness and higher cost in the long term.
- Liquidity in the government bond market continued to be strained in 2018, in light of the limited supply in the Debt Office's auctions, the Riksbank's bond purchases and market regulations. In the survey conducted at the end of the year, the primary dealers' rating of the liquidity was higher than a year earlier but still at a level considered unsatisfactory.
- Demand for government bonds, inflation-linked bonds and treasury bills in the Debt Office's auctions was good, and borrowing costs continued to be low. The bonds denominated in foreign currency were also met with strong demand and could be sold at good terms.
- In liquidity management, most of the cash surplus that was built up in 2017 remained in 2018. The cash surplus was invested in money market assets, awaiting use for paying expenses or loans that mature. Part of the cash was used to refinance loans on behalf of the Riksbank.
- In May 2018, the Debt Office decided to take a position for a stronger krona to reduce the cost of the central government debt. The position would be taken stepwise at different levels of the krona exchange rate against the euro, and at most be SEK 7 billion. At the end of the year, the position amounted to SEK 3.9 billion and the unrealised gain was SEK 73 million.
- Confidence in the Debt Office was at a record-high level in the annual survey of primary dealers and investors. The strategies deemed most important in the survey were also those that received the highest survey rating, indicating that the Debt Office is focusing on the right aspects. Of these, the repo facility in place to support the market in government securities was considered the most significant.
- The Debt Office continued to extend the maturity and reduce the foreign currency exposure of the central government debt in 2018, in accordance with the Government's guidelines. The maturity of the nominal krona debt was above the guideline interval during the second half of the year because the amount of short-term borrowing was unusually low due to the cash surplus. At the same time, the maturity of the inflation-linked debt was below the guideline interval.
- The cost of the central government debt was SEK 20 billion, corresponding to 0.4 per cent of GDP. This is an increase from 2017 but in line with the average over the last five years. Over time, the cost has declined in pace with the reduction in the debt and falling interest rates.

How central government debt is managed

One of the Swedish National Debt Office's main tasks is to manage central government debt. This mandate includes borrowing and managing cash in a way that ensures the state is always able to fulfil its payment obligations. The objective is to minimise the cost of the debt in the long term while limiting the risks involved.

Central government debt management in practice

The Debt Office borrows money on behalf of central government, primarily by issuing bonds in the Swedish and international capital markets. By purchasing these bonds, the investors – insurance companies, banks and funds, for example – are in effect lending money to the government. The more that investors are willing to pay for the bonds, the lower the state's borrowing cost becomes.

The purposes for central government borrowing are set out in the Budget Act. While the main purpose is to fund budget deficits, which result when expenditure exceeds income, the Debt Office also has to refinance loans that are maturing and thus must be repaid. In addition, extra government securities can be issued temporarily to meet the need for secure assets in the event that the functioning of the financial market is threatened. Another purpose of the borrowing is to provide for the Riksbank's needs for a foreign exchange reserve.

The loans raised over the years constitute Sweden's central government debt. When the state pays out more than it receives from taxes and fees during the year, there is a budget deficit that is funded with new loans, which means that the debt increases. And conversely, when the budget shows a surplus, the Debt Office abstains from refinancing maturing loans and the debt declines accordingly.

The Debt Office also handles cash deficits and surpluses on a daily basis as part of liquidity management. On days when there are large outgoing payments, for example when a government bond matures or government wages are paid out, the Debt Office funds the deficit with short-term borrowing. On days when there is a large amount of incoming payments, there may instead be a surplus to invest.

In accordance with the Budget Act, the objective of central government debt management is to minimise the cost of the debt in the long term while taking risk into account. Monetary policy requirements should also be considered. There are different levels at which the debt management is steered toward the objective: overarchingly through guidelines determined by the Government and operationally through internal guidelines, management strategies, policies and practices.

Government guidelines weigh cost against risk

The overall objective entails balancing cost and risk in the Government's annual guidelines for debt management. The Government makes decisions on the guidelines based on a proposal by the Debt Office and after consultation with the Riksbank. The guidelines establish the framework for the

composition and maturity of the debt. In this way, an overall level of risk is determined, which is used as a target in the debt management and can be monitored by the Government and the Riksdag. The risk involved is mainly the extent to which the cost of the debt is expected to vary. In the operative management, the Debt Office also takes into account other risks such as refinancing risk and counterparty risk.

Guidelines for debt composition and maturity in 2018

Composition of central government debt

The composition of the debt affects both cost and risk. The aim of having exposure to several types of debt is to diversify the risks. Risk diversification is a result of the fact that the cost for various types of debt does not usually vary in the same way over time.

According to the guidelines for 2018, the debt should have the following composition:

- The proportion of inflation-linked krona debt is to be 20 per cent of the total debt in the long term.
- The foreign currency exposure is to decrease by no more than SEK 30 billion per year.
- The remaining part is to consist of nominal krona debt.

The composition guidelines were unaltered from the previous year.

Maturity of central government debt

The maturity of the debt also affects both cost and risk. Historically, short (variable) interest rates have been lower than long (fixed) interest rates, making it less expensive to have a relatively short maturity. At the same time, the interest rate becomes less predictable because it changes frequently. Therefore, the cost of the debt normally varies more when the maturity is short.

The maturity is determined by weighing the benefit of minimising cost (having short maturity) against the benefit of having low cost variation (having long maturity). In the past ten years, the maturity of the debt has been between three and four years measured as duration.

For some time now, the cost advantage of short maturities has decreased because term premia are low. This means that investors no longer require an equally high premium as previously to invest at fixed interest rates compared with floating rates. Therefore, the Government decided to extend the debt maturity in its guideline decisions for 2016–2018. The guidelines for 2018 also included a decision on a common maturity target for the nominal krona debt. Previously, the steering of the nominal krona debt was divided into instruments with less than twelve years to maturity and more than twelve years to maturity.

According to the guidelines for 2018, the duration for the different types of debt should be:

- Foreign currency debt: 0–1 years
- Inflation-linked krona debt: 6–9 years
- Nominal krona debt: 4.3–5.5 years

The guidelines for composition and maturity serve to mitigate the exposure to various risks. The exposure is partly a result of the loans raised by the Debt Office, but it can also be adjusted by using derivatives such as interest rate swaps. This means that the exposure can be controlled without affecting borrowing. By utilising swaps, the Debt Office can, for example, convert the exposure from long fixed interest rates to short floating rates without altering the borrowing plan. This flexibility is important to be able to borrow as inexpensively as possible over time while minimising risk.

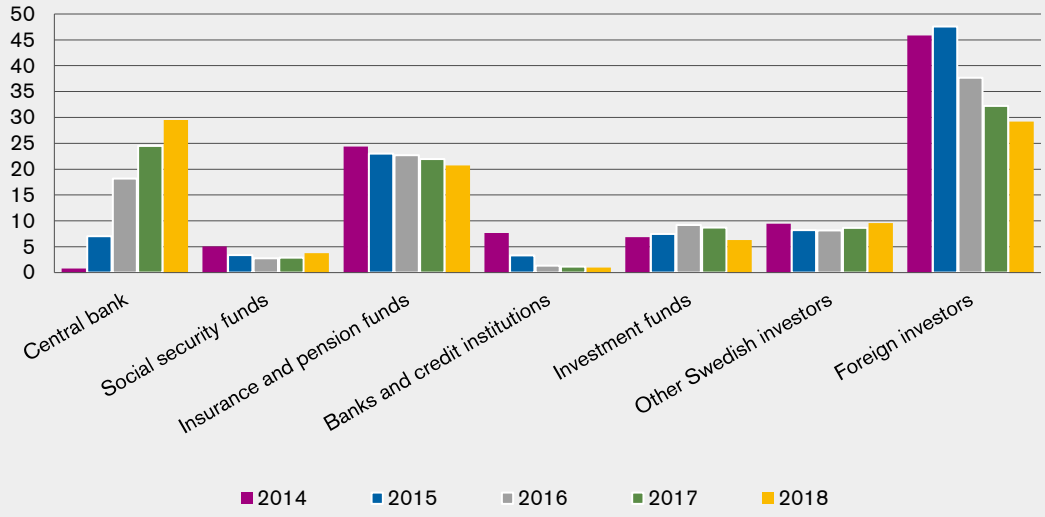
The Government guidelines also state that the Debt Office is to maintain good borrowing preparedness and contribute to a well-functioning government securities market. Furthermore, the guidelines establish a framework for the possibility to take positions to reduce the cost of the debt. The Debt Office also sets out internal guidelines in an annual Financial and Risk Policy.

Who owns Sweden's central government debt?

Historically, Swedish insurance companies and pension funds, as well as foreign investors, have been major owners of the fixed-income securities issued by the Swedish state (see the figure below). Since 2015, the Riksbank has purchased government bonds for monetary policy purposes and thereby become a major owner. At the end of the third quarter of 2018, the Riksbank owned the equivalent of almost 30 per cent of the outstanding central government debt. In pace with the Riksbank purchasing bonds, foreign investors have reduced their ownership.

Holdings of fixed-income securities issued by the Swedish state

Per cent



Source: Statistics Sweden, Financial Accounts

Remark: Holdings in terms of market value. 2018 figures as at end of third quarter.

Over time, the banks have also cut their holdings of government securities, which is likely due to greater costs for taking risk in their balance sheets. The holdings of insurance companies and pension funds have been relatively stable at just above 20 per cent of the outstanding stock.

Debt management strategies help lower cost over time

Above all, the Debt Office can affect the cost of the central government debt by proposing a well-balanced debt portfolio and by working to make the market for Swedish government securities as attractive to as many investors as possible. If many investors want to lend money to the Swedish state, the cost of the debt will be lower. Additionally, borrowing preparedness is strengthened if many investors are willing to invest in Swedish government securities.

Swedish government securities are in demand because they have low credit risk and are relatively easy to trade in the market. The low credit risk is a result of Sweden being a stable country with an established fiscal policy framework, its own currency and its own central bank. The attractiveness is also largely due to the liquidity offered by the government securities market, i.e. the possibility of selling or buying large volumes of government securities without any notable effect on their price.

The Debt Office uses several management strategies to make the market for government securities in kronor attractive. The main strategies are to:

- act transparently and predictably in borrowing and
- support the liquidity and infrastructure of the market.

To some extent, the Debt Office can also reduce the cost of central government debt by taking positions in foreign interest rates and currencies. This means that the Debt Office can, within given mandates, adjust the maturity of the debt or the distribution among different currencies based on the assessments of future interest rate and foreign currency fluctuations.

Borrowing in a transparent and predictable manner

The Debt Office bases its borrowing on a policy (see the fact box on the next page) and presents the issuance plan on a regular basis. This way, primary dealers and investors can develop an understanding of the issuance volumes of various government securities and understand how the Debt Office will proceed if the economic situation changes. The procedure contributes to reducing uncertainty toward Swedish government securities and, provided all other conditions remain the same, to investors thereby requiring a lower risk premium to lend to the Swedish state.

The report Central Government Borrowing – Forecast and Analysis is important for the Debt Office to be able to present its plans to all market participants simultaneously. The report is published three times a year and describes how much and in what way the Debt Office intends to borrow over the next two years. It also highlights the considerations that have been made based on the guidelines, the borrowing policy and prevailing conditions. In the beginning of each month, the outcome of the budget balance is published and any deviations from the forecast are explained.

The report Sweden's Central Government Debt is also published in conjunction with the outcome of the budget balance. This report covers the size and composition of the debt each month. The Debt Office also publishes annual proposed guidelines for debt management that provide a picture of the future development of central government borrowing and the governing of risks.

Borrowing policy forms basis of issuance plan

The Debt Office maintains a borrowing policy for, among other things, the choice of debt instruments and how the instruments and various maturities are prioritised.

Government bonds are the most important source of funding

Government bonds are the Debt Office's largest and most important source of funding and therefore have the highest priority of the instruments used for borrowing. These bonds are issued in regular auctions according to a pre-determined plan. Frequently selling smaller volumes reduces the risk of needing to borrow large volumes in unfavourable market situations and gives investors constant access to government bonds in the primary market.

The strategy for minimising long-term cost is to act predictably and build up sufficient volume in each bond to ensure good liquidity. This means that the Debt Office adjusts the borrowing in government bonds to short-term market conditions only to a limited extent.

The Debt Office also endeavours to maintain a relatively even maturity profile in its bond stock. An even maturity profile lowers the refinancing risk, as only a small part of the central government debt matures each year.

Inflation-linked bonds are a complement to nominal bonds

By issuing inflation-linked bonds, the Debt Office can attract investors who want to avoid the risk of inflation eroding the value of their bonds. The proportion of inflation-linked debt should be large enough to enable liquid trading in inflation-linked bonds, yet not so large that it crowds out nominal government bonds and worsens liquidity in that market.

For inflation-linked bonds, the Debt Office also uses regular auctions and strives for an even maturity profile. To facilitate reinvestment at maturity, the Debt Office aims to limit the outstanding volume in maturing bonds to SEK 20 billion.

Foreign currency bonds contribute to good borrowing preparedness

The Debt Office is able to borrow large amounts in the international capital market within a short span of time. There are therefore reasons for issuing foreign currency bonds even when the borrowing requirement is small, as this maintains the preparedness to borrow large amounts when necessary.

Because the Debt Office is a small player in the international capital market, as opposed to in the krona market, there are greater possibilities to act flexibly and adapt borrowing according to prevailing market conditions.

Treasury bills are used to counter fluctuations in the borrowing requirement

By using treasury bills, the Debt Office can borrow at short maturities in the krona market. Treasury bills are issued regularly through auctions and can also be sold as part of liquidity management. In the planned funding, treasury bills are mainly used to counter fluctuations in the borrowing requirement, with the aim of retaining a stable supply of government bonds.

Supporting liquidity and infrastructure in the market

The Debt Office tries to maintain various effective sales channels. A system of primary dealers serves to guarantee a well-functioning infrastructure, and promote liquidity, in the Swedish government securities market. The primary dealers place bids in the regular auctions and quote prices in the secondary market.

Regarding liquidity in the secondary market, the Debt Office can contribute indirectly via market-supporting facilities. One of these is the repo facility, which gives primary dealers an unlimited possibility to borrow government securities from the Debt Office. Knowing this facility is available makes it easier for primary dealers to quote prices, which promotes market liquidity.

The Debt Office also offers switches between various government securities. The switches are offered when new bonds are introduced so that they may quickly reach a certain outstanding volume. In addition, primary dealers can continually switch one inflation-linked bond for another.[1]

When the Debt Office sells foreign-currency bonds, it does so through syndication. This means that the Debt Office engages a group of banks – a syndicate – to carry out the sale. The bonds are marketed publicly and investors are offered the opportunity to show their interest in purchasing the bonds. One of the benefits of syndication over auctions is that the Debt Office is able to issue large volumes on a single occasion. Syndication also provides greater flexibility with timing and thereby the ability to adjust volume and price according to demand and prevailing market conditions.

Taking positions in foreign currencies and interest rates

The Debt Office has the opportunity to take positions to lower the expected cost of the central government debt or to reduce financial risks. The positions allow the Debt Office to adjust the debt maturity or the distribution among different currencies based on the assessments of future rates and foreign currency fluctuations. Positions are taken by using derivative instruments in liquid markets.

The Debt Office has a mandate to take smaller positions in the day-to-day operations, while the Board of Directors decides on large positions. The Board also decides on positions in kronor. The risk mandate for positioning is governed partly by the Government's guidelines and partly by the Debt Office's Financial and Risk Policy.

Liquidity management is governed by policy and practices

Central government cash management is conducted on a daily basis as part of liquidity management. The net of incoming and outgoing payments in kronor is collected each day in the Treasury Single Account (TSA) – the state's central account at the Riksbank. The Debt Office is responsible for financing deficits and investing surpluses so that the balance of the TSA is zero at the close of day. Foreign currency is also handled in liquidity management.

The overall objective is to ensure that the state can fulfil its payment commitments on time, which requires good planning based on reliable forecasts for borrowing and investment requirements.

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[1] *Switch rates in the standing facility for switches of inflation-linked bonds are based on prevailing market interest rates and demand as well as a certain premium. Dealers may make the switch for a maximum of SEK 500 million per calendar week. The switches may be price risk neutral, nominal or liquidity neutral. The switch facility expires when the bond becomes shorter than one year. The switch facility is closed on the days when the Debt Office and the Riksbank conduct auctions in inflation-linked bonds.*

Good planning also makes it possible to borrow or invest at favourable terms. At the same time, handling unexpected payment flows in an appropriate manner requires a great deal of flexibility in liquidity management. It is therefore neither feasible nor possible to control in detail every conceivable situation that may arise in liquidity management.

The Government's guidelines for debt management do not stipulate particular rules for liquidity management. However, the guiding principles are set out in the Debt Office's Financial and Risk Policy – which presents, among other things, which instruments may be used and how credit and counterparty risks are to be limited. The operational activities are then carried out in accordance with internal instructions that guide the choice of counterparty, instruments and maturity for individual transactions.

Qualitative and quantitative evaluation at various levels

Evaluation is complex as to whether the overall objective – to minimise cost while taking account of the risk – has been achieved. This is because the cost depends on prevailing market interest rates while, at the same time, the Debt Office's offering of government securities affects these interest rates. To know whether the Debt Office had minimised the cost would essentially require knowing what costs would have resulted from alternate borrowing strategies. It is therefore difficult to set quantitative targets for central government borrowing costs.

Reliable answers cannot always be obtained through comparisons with other borrowers either. The Debt Office borrows the most inexpensively of all borrowers in the capital market in kronor and has lower costs than most other borrowers have in foreign currencies.

The evaluation is therefore made primarily in qualitative terms using the knowledge available at the time of decision. When possible, however, the evaluation should also include quantitative measures.

This report first describes the borrowing and liquidity management during the year, and examines the grounds for the Debt Office's considerations and decisions. In addition, the Debt Office's actions and strategies are evaluated in an annual survey with primary dealers and investors. The result of this survey is presented in the second-to-last chapter.

In the final chapter, the debt management is evaluated in terms of both the targets set out for composition and maturity and the internal guidelines in the Financial and Risk Policy. The final chapter also reports the overall cost of the debt as a whole and the result of those parts of the management that have quantitative targets.

As a basis for evaluation, the next chapter describes the preconditions for debt management during the year. This mainly concerns the development of the budget balance, the size of the central government debt and the conditions in the financial markets.

Preconditions during the year

The central government budget showed a surplus for the third year in a row, and the central government debt as a percentage of GDP was at the lowest level in 40 years. This is partly explained by the sustained boom in the Swedish economy as well as companies and other legal entities continuing to use their tax accounts to place capital. The borrowing requirement decreased as a result of the budget surplus. Together with other factors, this meant that liquidity in the government securities market remained strained. This chapter describes the preconditions for the operative debt management during the year.

Third consecutive year of budget surpluses

In 2018, the central government budget showed a surplus of SEK 80 billion, compared with SEK 62 billion in 2017 (see Table 1). The strong government finances of recent years are partly because the Swedish economy has grown at a good pace and because companies and private individuals have used their tax accounts to place capital.

Table 1. Central government budget balance, SEK billion

	2014	2015	2016	2017	2018
Primary balance[1]	-47	0	101	69	98
Net lending[2]	-22	-11	-14	3	-4
Interest payments	-3	-22	-1	-10	-13
Budget balance[3]	-72	-33	85	62	80

[1]The primary balance is the net of central government income and expenditure excluding interest payments and the Debt Office's net lending.

[2]The Debt Office's net lending comprises the net of government agencies', et al., deposits and loans from the state's treasury. It includes continuous government operations as well as temporary items, for which decisions can be made at short notice. Deposits and lending affect the budget balance (net borrowing requirement) and central government debt but are not covered by the government expenditure ceiling.

[3]The budget balance with the reverse sign is the state's net borrowing requirement.

A continued good economic climate and a strong labour market were important reasons for the large surplus in 2018. Wages, consumption and corporate profits contributed to boosting the state's tax income. At the same time, central government expenditure increased overall at a moderate rate, although social insurance expenditure increased more than in 2017.

Due to the low interest rate level in recent years, both private individuals and legal entities have used their tax accounts as a form of savings account. The Debt Office's assessment is that deposits not related to taxes or fees continued in 2018. To reduce the level of these excess deposits, the interest rate on tax accounts was lowered from 0.56 per cent to 0 per cent on 1 January 2017. Despite this, tax accounts remained an attractive form of investment compared with other equivalent alternatives, especially for corporates.

In its forecast in October 2018, the Debt Office's assessment was that the total deposits in tax accounts not related to taxes or fees amounted to approximately SEK 80 billion at year-end. As each legal entity and private person determines the size of their extra tax payments, it is not possible to say exactly how large the amount of savings in tax accounts was. This therefore entails making assessments based on the development of the tax bases and the balance of the tax accounts.

Interest payments on the central government debt were SEK 13 billion in 2018. This is an increase from 2017 but still a low level historically. The increase is mainly due to currency exchange losses that arose when foreign currency loans were repaid at a weaker krona exchange rate than when the loans were raised.

More accurate forecasts in 2018

The Debt Office makes detailed forecasts of the budget balance for both the short and long term. The purpose of these forecasts is to create conditions for stable borrowing plans and effective liquidity management. Essentially, the annual forecasts steer long-term borrowing in bonds and the monthly forecasts steer short-term borrowing in treasury bills and commercial paper. The daily forecasts are used in liquidity management.

The forecasts for 2018 were characterised by uncertainty about the macro picture and the degree of slowdown in the economy. In the first forecasts for the year, the strength of the economy was underestimated, while it was overestimated in later forecasts. Another uncertainty factor was, as in the previous two years, the extent of the excess deposits in tax accounts.

Annual forecasts for 2018

Government finances developed stronger in 2018 than previous forecasts showed (see Figure 1). The first forecast from October 2016 pointed to a budget surplus of SEK 20 billion, which in the forecast one year later had grown to SEK 47 billion. In the last forecast from October 2018, the surplus was SEK 96 billion. The final outcome was SEK 80 billion, i.e. SEK 60 billion higher than the first forecast and SEK 33 billion higher than the forecast from October 2017.

Figure 1. Budget balance – forecast and outcome

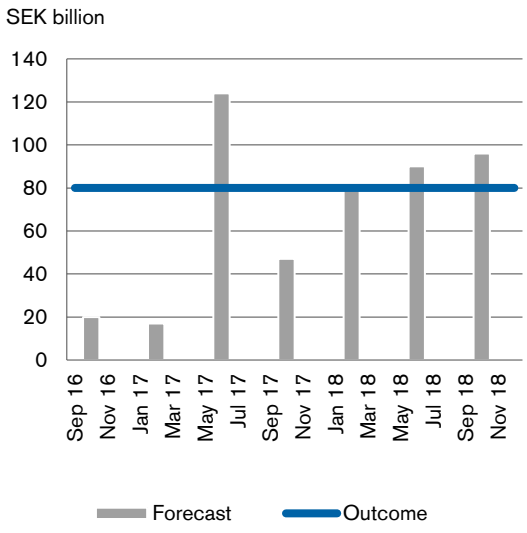


Table 2. Difference between outcome and forecast

SEK billion	Change
Tax income	25
Public Employment Service	2
Social Insurance Office	-3
EU	0
Other	8
Net lending	2
Interest payments	-2
Total change in budget balance	**32**

The table shows the difference between the outcome for 2018 and the forecast from October 2017 for various components of the budget balance. Expenditure for the Public Employment Service was, for example, SEK 2 billion below forecast, while expenditure for the Social Insurance Office (Försäkringskassan) was SEK 3 billion higher.

The February 2018 forecast was accurate for the budget balance outcome. Otherwise, the budget balance was underestimated as many times as it was overestimated from the first forecast. In the forecast that stands out in Figure 1, from June 2017, the Debt Office assumed that the loans raised to the Riksbank to strengthen the foreign exchange reserve would begin to be paid back in 2018 according to a Government proposal. This assumption, which boosted the estimated budget surplus by SEK 106 billion, was then removed in the next forecast because the proposal was not submitted.

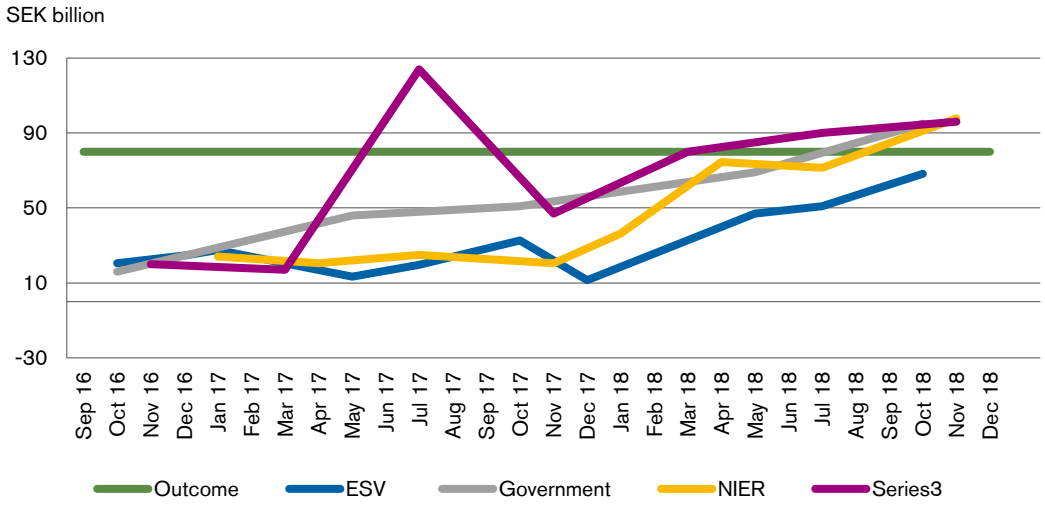
Table 2 shows the differences between the outcome for 2018 and the forecast from October 2017 for various components of the budget balance. The underestimation of the tax income was likely because the macro picture was too weak. In addition, tax income continued to be affected by excess deposits in tax accounts because a risk-free zero interest rate was still attractive to many legal entities. Only when the tax bases that affect supplementary tax payments become available in December 2019 will it be possible to better estimate the extent of the excess deposits.

In autumn 2018, tax income was lower than expected, mainly as a result of higher outgoing payments from tax accounts. It is likely that the Debt Office slightly overestimated the excess deposits in tax accounts in the last forecast from October 2018. This contributed to the budget balance for the full year 2018 being SEK 16 billion lower than the last forecast.

Comparison with forecasts by other government agencies

KI (the National Institute of Economic Research), ESV (the Swedish Financial Management Authority) and the Government also make forecasts for the central government budget balance (or net borrowing requirement). These agencies and the Government have different principles for handling sales income in the forecast context. To facilitate comparisons, this income is therefore excluded in Figure 2.

Figure 2. Different analysts' forecasts for central government budget balance



The forecasts do not include sales income, as the forecasters have differing principles for this.

The Debt Office's forecast from June 2017 is distinguished by the assumption of on-lending to the Riksbank, as described above. Otherwise, all forecasters had similar profiles in the forecasts. The budget balance was initially underestimated and the forecasts were gradually adjusted upward. In

the last forecast, all forecasters except ESV overestimated the budget balance. From the end of 2017 onwards, the Government and the Debt Office were the closest to the final outcome.

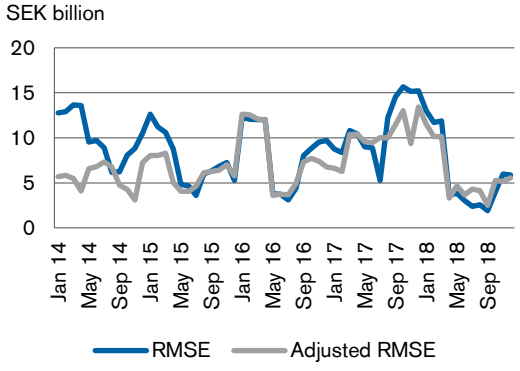
Monthly forecasts

The Debt Office is currently the only government agency to publish monthly forecasts of the budget balance. This rules out comparisons with other forecasters. However, The Debt Office monitors the precision of its monthly forecasts using the measure of Root Mean Square Error (RMSE).[2]

Figure 3 shows the development of RMSE since 2014. Here, it is apparent that the precision increased slightly in 2018. This is partly due to a better understanding of how the low interest rate situation affects the timing of tax payments. When interest rates rise or other economic factors change, the payment pattern will likely change accordingly.

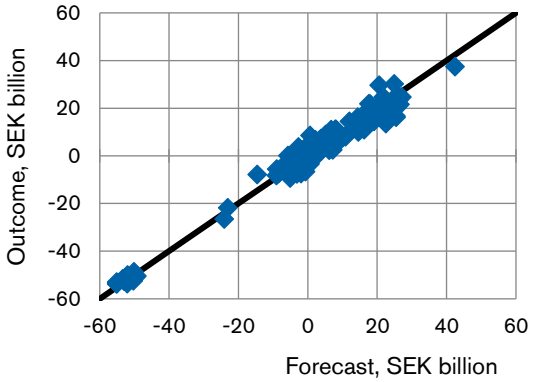
Periodically, the budget balance has been strongly affected by the Debt Office's on-lending and income from sales of state-owned enterprises. For this reason, an adjusted RMSE excluding these items is also presented.

Figure 3. Deviations, monthly forecasts



Deviations according to the Root Mean Square Error (RMSE) measure.

Figure 4. Forecast/outcome on a daily basis



Daily forecasts

To plan its liquidity management, the Debt Office also makes daily forecasts at least six months ahead. Unlike the annual and monthly forecasts, the daily forecasts are continually updated as new information becomes available. Figure 4 shows daily outcomes and forecasts for the primary net borrowing requirement, excluding the Debt Office's net lending to other government agencies. The

[2]RMSE is defined as $\sqrt{(e_1^2 + e_2^2 + e_3^2 + e_4^2)/4}$ where e_t is the forecasting error (outcome as proportion of the last published forecast) for month t. The Debt Office updates its forecast every four months, so the RMSE is based on the forecasting errors in the past four months.

distance from the line represents the deviation for each respective day. If the forecasts did not have any information value, the points in the figure would be distributed randomly.

The average deviation per day was SEK 17 million in 2018, an improvement over SEK 170 million in 2017. One explanation is an increased understanding of how the low interest rate situation affects tax payments. The largest per-day deviations were on 11 May and 12 October. In both cases, this was because tax income was paid in earlier than expected.

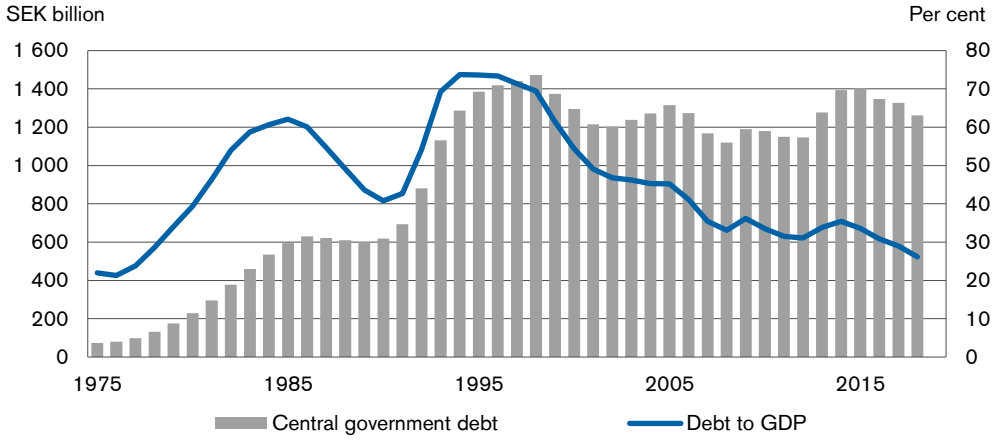
Debt as percentage of GDP at lowest level in 40 years

Central government debt continued to decline in 2018 and was SEK 1,262 billion at year-end (see Figure 5). This is SEK 66 billion lower than a year earlier. As a share of GDP, debt fell from 29 per cent to 26 per cent – the lowest level since the end of the 1970s.

Central government debt decreases when the budget shows a surplus, but the debt is also affected by other factors such as changes in assets under management, exchange rates and inflation. In 2018, the debt reduction was smaller than the budget surplus, which is mainly the result of revaluation effects due to a weaker krona. A weaker krona increases the value of the foreign currency debt.

The official central government debt is reported with a gross measure, which means that assets are not deducted. This applies to both the investments as part of liquidity management and the claims pertaining to the Debt Office's on-lending to the Riksbank. These assets totalled SEK 306 billion at the end of 2018, compared with SEK 329 billion a year earlier. After the assets are deducted, the debt as a share of GDP is down to 20 per cent.

Figure 5. Development of central government debt



For 2018, the share is based on the Debt Office's GDP forecast because the outcome has not yet been published.

The figure above shows the development of the unconsolidated central government debt according to the official measure reported by the Debt Office (see fact box on the next page). In international comparisons, a measure of the entire public sector's consolidated gross debt is often used instead. According to the latest outcome in 2017, this debt (also called the Maastricht debt) was 41 per cent of GDP. This is a low level internationally. In the euro area, for example, debt averaged 87 per cent in 2017.

Various debt measures

There are various ways of measuring the state's level of indebtedness. The Debt Office reports the *unconsolidated central government debt*. The measure shows the gross debt and includes all loans raised by the Debt Office on behalf of the state (including the Riksbank). The debt is reported at nominal final value according to the principles applied within the EU.

Some government agencies own government bonds and treasury bills. This type of intra-government ownership is excluded in the *consolidated central government debt.* This measure provides an overall picture of the state's financial position and is used in the Government's budget bill and the state's annual accounts. The consolidated central government debt is calculated by ESV (the Swedish National Financial Management Authority).

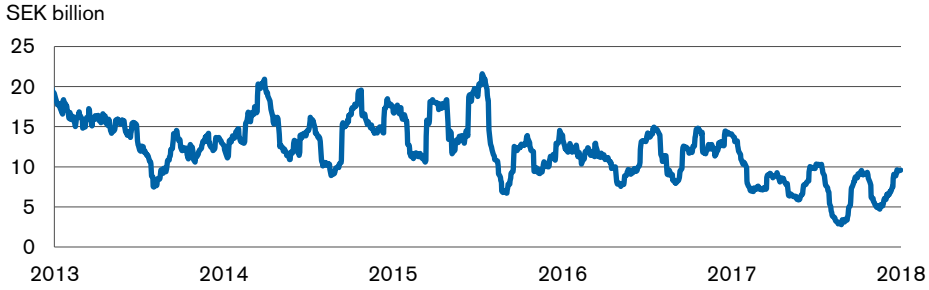
A measure often used in international comparisons is the *public sector consolidated gross debt*. This includes the entire public sector, e.g. the central government, municipalities, county councils and the pension system. The calculation is based on terms in the Maastricht Treaty. According to the EU debt criterion, the Maastricht debt may not exceed 60 per cent of GDP. The Maastricht debt is also the measure referred to in the Swedish budget framework and for the debt anchor that applies from 2019, i.e. that the debt should be 35 per cent of GDP in the medium term. Public sector consolidated gross debt is published by Statistics Sweden.

Liquidity in government securities market remains strained

Liquidity in the government securities market has deteriorated in recent years. This is mainly due to the Riksbank's purchases of government bonds in combination with the Debt Office's lower supply due to strong government finances. Another contributing factor is regulatory changes that limit the possibility, and make it more expensive, for market makers (banks) to maintain trading books. Smaller balances give banks less scope to quote prices and act as a buffer in a crisis.

The average daily turnover in the market for government bonds has declined by half since 2015 (see Figure 6). The volume per transaction has also likely decreased. In 2018, both primary dealers and investors witnessed that the market functioned when smaller tickets were traded but that problems arose when there was a disturbance or need to trade larger volumes.

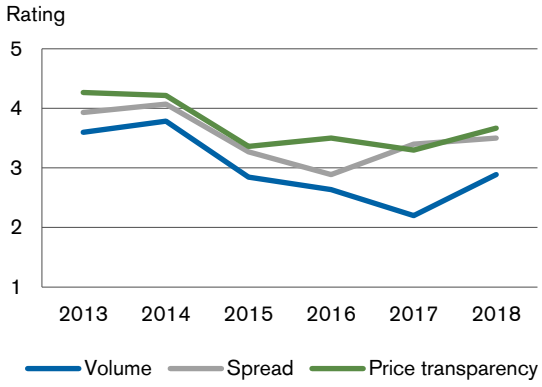
Figure 6. Average turnover per day on government bond market



Source: Riksbank
Note: Daily turnover (spot) nominal government bonds in SEK billion, 30-day moving average.

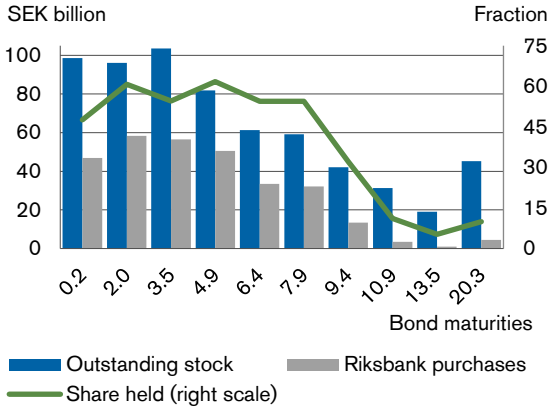
In the survey conducted by the Debt Office at the end of 2018, primary dealers gave the liquidity in the market for government bonds a higher rating than a year earlier. However, it was still considered unsatisfactory (see Figure 7). The Riksbank's purchase of government securities was named by both primary dealers and investors as one of the main reasons as to why liquidity was strained. At the end of 2018, the Riksbank owned almost half of the outstanding stock of government bonds (see Figure 8). The bank began its bond purchases for monetary policy purposes in 2015.

Figure 7. Primary dealers' experience of liquidity in government bond market



Source: Kantar Sifo Prospera
Note: Primary dealers' survey rating of liquidity in terms of volume, spread and price transparency in the survey conducted in Nov/Dec 2018. Over 4 is classified as excellent, while under 3 is interpreted as unsatisfactory.

Figure 8. The Riksbank's holdings of government bonds at different maturities



Source: The Riksbank and own calculations
Note: The Riksbank's holdings at nominal value as at 31 December 2018.

The results of the survey also show that the dealers consider the facility by which the Debt Office offers repos in government securities to be central to the functioning of the market (see box on the market-supporting repo facility on page 25). The next chapter describes how primary dealers utilised the repo facility during the year.

Liquidity is valued less highly in the market for inflation-linked bonds than in the market for nominal krona bonds. Essentially, this is because investors do not have the same interest in active trading in inflation-linked bonds. There is no developed trading in derivative instruments here either. Liquidity in terms of volume in the market for inflation-linked bonds was rated 1.8 by primary dealers in this year's survey, which was slightly better than the previous year.

Liquidity in terms of volume in the treasury bill market also improved slightly from a low level. However, the survey rating for liquidity deteriorated in terms of spread, i.e. the difference between buy and sell prices. The outstanding stock of treasury bills is now less than a quarter of what it has been in recent years, and investors are largely using other instruments to invest in the short term.

What is market liquidity and how is it measured?

Market liquidity can be defined as the possibility of carrying out a transaction quickly, at a reasonable cost and with little price impact. Market liquidity is thus a multifaceted concept that cannot be captured by a single measure. A liquid market is primarily characterised by:

- *Small spread,* i.e. little difference between buy and sell prices.
- *Depth,* which means that the price is not significantly affected by large volumes. The depth increases when there are many investors and market makers, as it increases the likelihood of finding a counterparty willing to carry out an order at the prevailing market price.
- *Resilience,* which entails that the market quickly returns to its equilibrium price after a situation of imbalance. A price recovers more easily if there is a good supply of new transactions that can restore the price to its original level.

The availability of price and transaction data in the secondary market for government securities is very limited. This makes it difficult to directly measure the above factors, although trading data at an aggregated level gives an indication of depth and resilience. The Debt Office therefore follows the development mainly through an active dialogue with market participants and the annual survey in which these participants rate how they perceive liquidity in terms of spread and depth. The utilisation of the Debt Office's repo facility can also provide an indication of how well the market works.

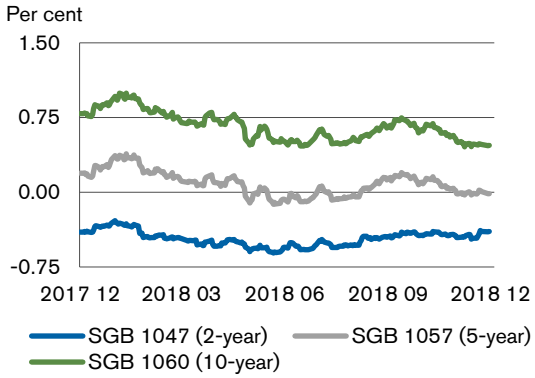
Mixed interest rate development and a weaker krona

The beginning of the year was characterised by strong global growth and a positive outlook, which led to rising long-term interest rates and share prices. The increase in both bond yields and share prices was then limited by political concerns in the form of a sharper tone in trade agreements between China and the US, the UK's exit from the EU, and the Italian parliamentary elections. During the second half of the year, political issues continued to affect growth prospects, while economic data indicated that global growth began to slow somewhat. Concern for global growth and trade restrictions had a clear impact on the commodity markets, which dampened inflation expectations.

Nevertheless, US interest rates rose in 2018, especially in shorter maturities, as the Federal Reserve (Fed) raised its policy rate (federal funds rate) on four occasions. The Fed also indicated until late autumn 2018 that it planned another four rate hikes in 2019. However, later Fed statements as well as declining macro statistics led to the market expecting two rate increases at the end of the year instead of four. The US ten-year rate rose from 2.40 per cent to 2.82 per cent in 2018.

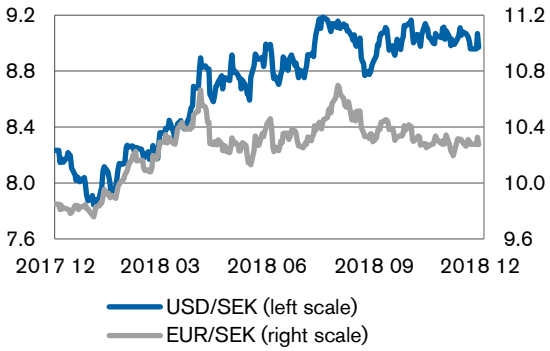
In Sweden, the ten-year government bond yield fell from 0.79 per cent to 0.47 per cent (see Figure 9). The difference against German interest rates was largely unchanged over the year. The krona weakened against both the dollar and the euro. The krona exchange rate against the dollar went from around 8.20 in January to just below 9 at the end of the year, as shown in Figure 10. Against the euro, the krona traded at its highest at around 10.70 at the end of August after the Riksbank postponed the date of a first rate increase.

Figure 9. Swedish government bond yields



Source: Macrobond

Figure 10. The krona exchange rate



Source: Macrobond

Swedish monetary policy continued to be expansionary during the year, with signals from the Riksbank that a tightening of monetary policy was approaching. In the spring, the Riksbank suggested that an initial increase in the repo rate (policy rate) from -0.50 per cent could occur in the third quarter of 2018. Then the signals changed to the increase coming in December 2018 or February 2019. Following weaker development of Swedish macro data and rising global political concern, the market began to doubt that the Riksbank would raise the repo rate in December, which it then did. The new repo rate was set at -0.25 percent. The Riksbank also signalled that the next increase could come in the second half of 2019.

The Riksbank also continued to buy government bonds during the year and made it clear that coupons and redemptions would be reinvested until June 2019. The Riksbank's holdings of government bonds increased from SEK 266 billion to SEK 301 billion, corresponding to 47 per cent of the outstanding stock.

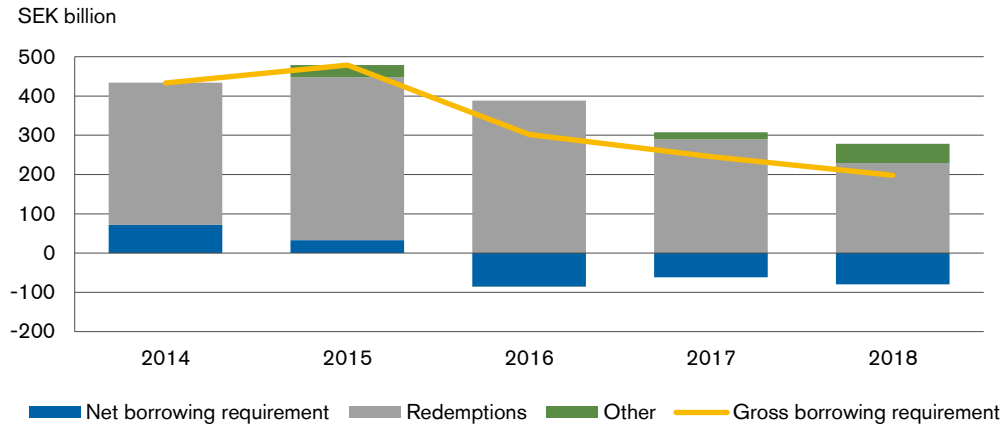
The operative debt management

Due to the budget surplus along with a low volume of maturing loans, the total borrowing requirement decreased in 2018. The already low issuance volume in government bonds was therefore reduced as much as was deemed consistent with the objective of long-term cost minimisation. The cash surplus that was built up in 2017 continued to be handled in liquidity management. With the aim of further lowering the cost of central government debt, the Debt Office used its mandate to take positions in the krona. This chapter describes the Debt Office's actions as well as the assessments and deliberations made.

Supply of government securities at historically low levels

The total borrowing requirement decreased in 2018 for the third consecutive year, to SEK 198 billion – the lowest level in ten years. The decrease is not only due to the budget surplus being larger but also because the volume of loans that matured was unusually small (see Figure 11).

Figure 11. Gross borrowing requirement



The net borrowing requirement is the budget balance with the reverse sign. Other items include an adjustment for the fact that the net borrowing requirement is reported on the settlement date, while borrowing and central government debt are reported on the trading date.

The Debt Office already met the ever-decreasing borrowing requirement in 2017 by reducing the issuance volumes in all types of government securities to a very low level. Starting at the turn of the year 2017/2018, the supply of treasury bills decreased and the stock went down to just under one-fourth of the level a year earlier. When the forecast for the budget balance was revised upward again in February, the Debt Office chose to further reduce the supply of government bonds. This was done by reducing the volume of the regular auctions to the lowest level in more than ten years.

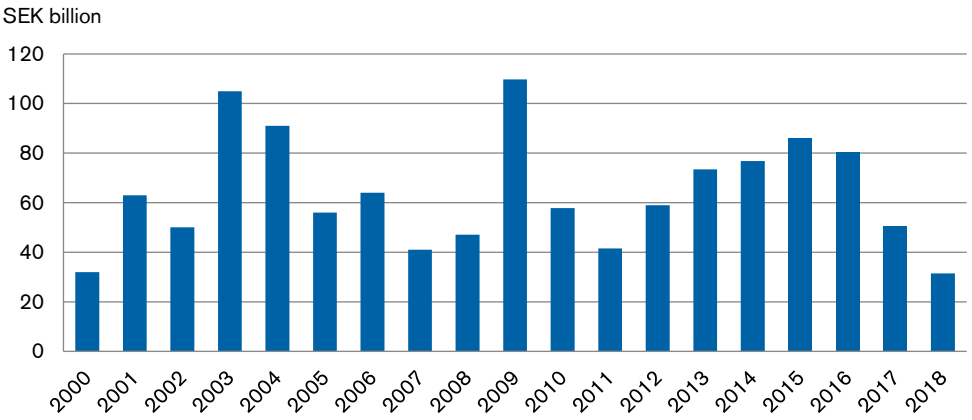
Table 3. Total borrowing distributed among markets and debt instruments

SEK billion	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Money market	111	215	177	170	206	180	256	284	144	122	70
Capital market	50	243	97	79	101	222	177	194	157	124	128
Government bonds	47	110	58	41	59	74	77	86	81	51	32
Inflation-linked bonds	3	3	8	6	7	12	17	17	16	12	9
Foreign currency bonds	0	130	31	31	35	137	84	91	61	61	88
On behalf of central government	0	50	7	0	0	6	25	38	0	0	0
On-lending to the Riksbank	0	80	24	31	35	131	59	53	61	61	88
Total borrowing	**161**	**458**	**274**	**249**	**307**	**402**	**433**	**479**	**302**	**246**	**198**

Government bond issuance is prioritised for long-term cost minimisation

Even though government bonds are the highest-priority source of funding, the annual issuance volume has declined by more than half in the last three years. Since the auction volume was lowered in February, total government borrowing in bonds decreased to SEK 31.5 billion in 2018 from SEK 50.5 billion a year earlier. This is the smallest annual supply since 2000 (see Figure 12).

Figure 12. Annual issuance volume in government bonds



In conjunction with the February reduction, the Debt Office said that it would not be possible to reduce the issuance volume further without risking both poorer borrowing preparedness and higher cost in the long term. In addition, a further reduction was considered to have little practical effect, as it would increase the demand for government bonds in the Debt Office's unlimited repo facility (see the fact box on the Debt Office's market-supporting repo facility). The long-term borrowing in government bonds would thereby only be replaced by short-term borrowing in the repos.

The Debt Office's policy is primarily to issue ten-year and five-year government bonds. The emphasis is on the ten-year segment in order to quickly build up the volume of new bonds. The smaller the borrowing, the more it needs to be concentrated on the ten-year segment. In 2018, the proportion of ten-year bonds issued was 78 per cent, compared with 50 per cent in the previous year. A new ten-year government bond was introduced on 30 May 2018.

During the year, the Debt Office issued no government bonds with a maturity shorter than about five years, as the borrowing requirement was small and the demand for short-term bonds was limited.

Low level of borrowing in treasury bills and inflation-linked bonds

In February, the Debt Office made the assessment that it was also not feasible to further reduce funding in treasury bills and inflation-linked bonds because the level was already so low.

The outstanding stock of treasury bills decreased to SEK 20 billion in June 2018. As shown in Figure 13, it was just over SEK 150 billion as recently as 2016. The issuance volume in inflation-linked bonds fell from SEK 12 billion in 2017 to SEK 9 billion in 2018.

Figure 13. Stock of treasury bills

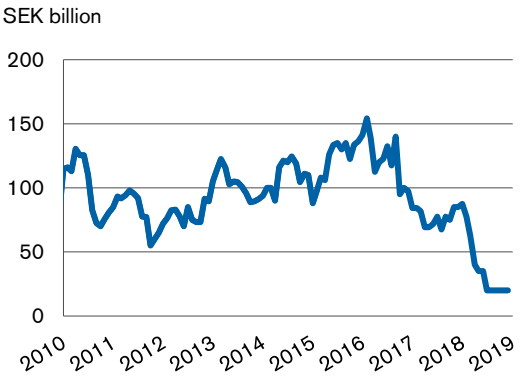
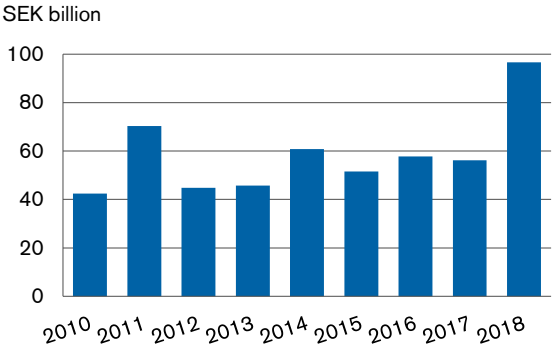


Figure 14. Maturing loans on behalf of the Riksbank



Fewer foreign currency bonds for the Riksbank when cash was used

The loans raised in foreign currency in 2018 were exclusively for on-lending to the Riksbank. Since 2009, the Debt Office has borrowed on behalf of the Riksbank to strengthen the foreign exchange reserve. The Riksbank compensates the Debt Office for the interest costs and administrative expenses that arise in connection with on-lending.

In 2018, loans on behalf of the Riksbank for the equivalent of just under SEK 100 billion matured and were replaced with new ones (see Figure14). Most of the loans were refinanced with new foreign currency bonds, but cash was used for one loan of USD 2.25 billion. The corresponding amount in kronor was converted into dollars using derivatives and then lent to the Riksbank.

During the year, the Debt Office issued two bonds totalling USD 6 billion and one bond of EUR 4 billion. The maturities of the bonds were three and five years, respectively, in accordance with the Riksbank's requests.

In previous years, the Debt Office has supplemented the bond issuance to the Riksbank by issuing commercial paper. In 2018, there was no need for borrowing of this type.

No sale of lottery bonds

In December 2016, the Debt Office's Board of Directors resolved to stop issuing lottery bonds until further notice. The basis for the decision was the fact that lottery bonds issued after 2014 had entailed an additional cost rather than savings. Therefore, they did not meet the objective of keeping

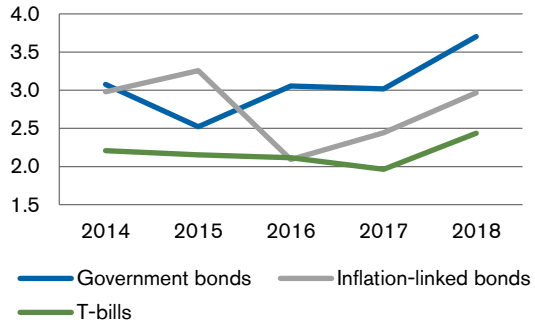
the cost of the Debt Office's borrowing on the retail market lower than the corresponding borrowing on the institutional market. The result of the retail market borrowing is presented in the last chapter.

In April 2018, the Government commissioned the Debt Office to analyse whether borrowing in lottery bonds should be wound up in connection with the last of the bonds maturing in 2021. The Debt Office presented the results of the analysis in conjunction with the proposed guidelines for 2019. The conclusion was that the prospects for resuming issuance are lacking and that lottery bonds can no longer contribute to the objective of minimising the cost of central government debt.

Good demand and low interest rates in issues

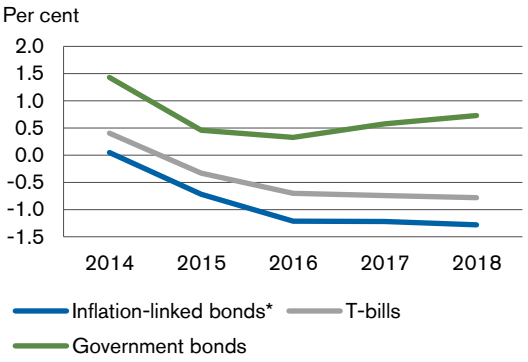
Demand for Swedish government bonds, inflation-linked bonds and treasury bills remained strong in 2018 and all auctions were oversubscribed. The average cover ratio is shown in Figure15. The interest rates at which the Debt Office borrowed in government bonds were somewhat higher than in 2017 but still low historically. The average yields on treasury bills and inflation-linked bonds in the auctions were essentially unchanged (see Figure 16).

Figure 15. Average cover ratio



Bid volume/offered volume on average in the auctions during the year.

Figure 16. Average yields in the auctions



*Real interest rate

The foreign currency bonds sold during the year were also met with strong demand and could be sold at favourable terms. The average yield on the dollar bonds was 16 basis points over the corresponding US government bond, while the euro bond was issued at 23 basis points over a corresponding German government bond.

The Debt Office's investor base in foreign currency bonds is broad in terms of both category and geography. Central banks constituted the largest investor category in the bonds sold in 2018, which follows the historical pattern. Most of the investors in dollar bonds were from Asia, while demand for the euro bond was greatest in Europe and the Middle East.

The issue of the dollar bond in January was chosen as best sovereign dollar bond of the year in a vote by Global Capital – a news and data service for international capital market participants.

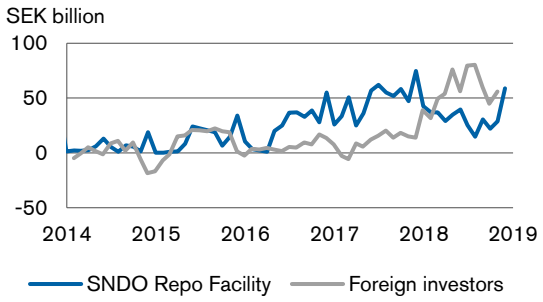
Repo facility received highest-ever survey rating

The volume of the market-supporting repo facility was lower for most of 2018 compared with the previous year, but it remained larger than usual. The decrease is likely due to investors repoing out

their holdings to a greater extent than previously. As shown in Figure 17, statistics on foreign investors' holdings in Swedish government securities show a marked increase in bonds repoed out.

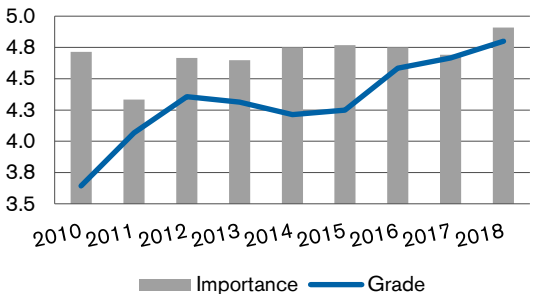
Even though investors were more active in the repo market, the Debt Office's repo facility was still considered central to the functioning of the market. The ratings for both the repo facility and its importance were at record-high levels in the annual survey of investors and retailers (see Figure 18).

Figure 17. Repos in government and inflation-linked bonds



Source: Statistics Sweden and Swedish National Debt Office. Data for foreign ownership statistics is available through October 2018.

Figure 18. Survey rating for repo facility



The importance of the market-supporting repo facility and the rating for the Debt Office's handling of these on a scale of 1–5 in annual survey.

At year-end, the volume of the Debt Office's repos increased to almost SEK 60 billion. The repos entail borrowing in addition to what the Debt Office plans for in the form of government securities issuance. To avoid excessive cash surpluses in liquidity management, the Debt Office therefore has had to cut back on other short-term funding.

The Debt Office's market-supporting repo facility

The term repo is an abbreviation of "repurchase agreement". This is an agreement to sell a security to a counterparty and then buy it back a certain number of days later at a pre-agreed price. The standing arrangement entails that the buyer borrows the security at the same time as the seller borrows money at a certain interest rate.

The Debt Office offers its primary dealers the opportunity to borrow government securities in this way. The purpose of the offer is to ensure that primary dealers can sell government securities to investors without risking delivery problems. The facility, referred to as a market-supporting repo, is therefore completely driven by demand and offered regardless of the central government borrowing requirement. To be able to utilise the opportunity, the primary dealers pay a premium in relation to the Riksbank's policy rate (repo rate). In other words, the Debt Office borrows at an interest rate that is lower than the policy rate.

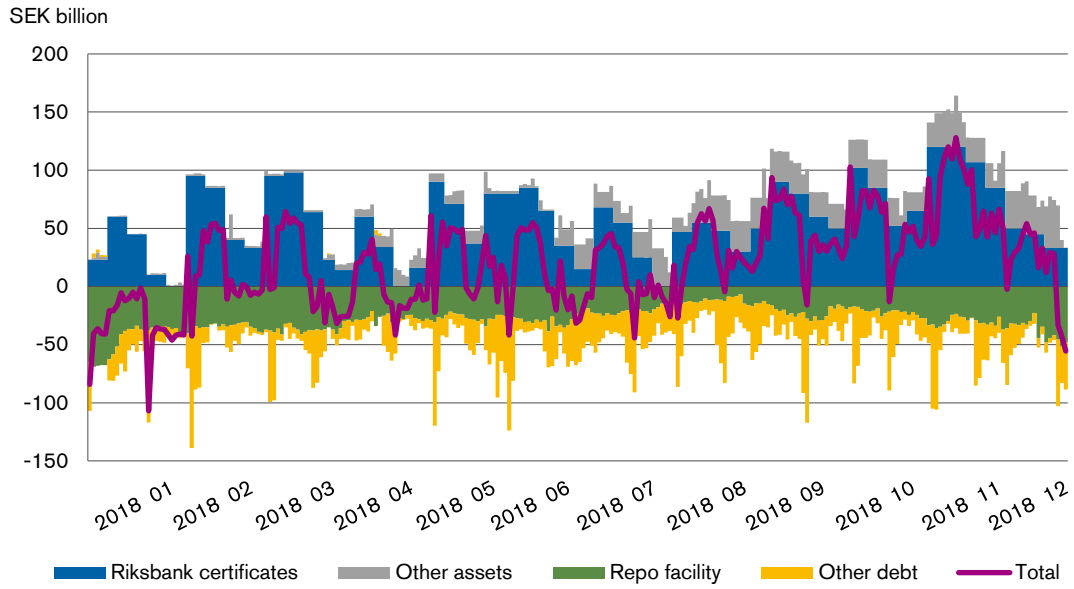
Continued surplus to invest within liquidity management

Liquidity management continued to be characterised by a large investment requirement as a result of the cash surplus that arose in 2017 when tax income became unexpectedly large. The cash

surplus has been invested in money market assets, awaiting use for paying expenses or loans that mature. The money that comes in when the Debt Office repos out government securities is also invested as part of liquidity management.

In 2018, the Debt Office invested an average of SEK 76 billion per day in liquidity management, slightly more than in the previous year.

Figure 19. Assets and liabilities in liquidity management



By having good advance planning, the Debt Office can borrow and invest at better terms and reduce the risks in liquidity management. The strategy is to first invest the cash surplus that is expected to remain for a longer time. In 2018, most of this surplus has been invested at the repo rate in Riksbank Certificates (see Figure 19). This was considered the best alternative from a risk and return perspective. The Debt Office also used covered mortgage bonds with short remaining maturities, repos in covered mortgage bonds and tri-party repos.

After the weekly investments, the Debt Office aimed for the daily net of cash to end up at a small deficit rather than on balance. This provided a certain margin for avoiding the need to invest in the overnight market where it was still more advantageous to borrow than invest in 2018. The size of the daily deficits corresponds to the item Other liabilities in the figure above.

The item Market-supporting repos in the figure shows the debt that arises continually when the Debt Office repos out government securities. Through the repos, the Debt Office borrows at a minimum of 40 basis points below the Riksbank's repo rate.

Foreign currency flows and currency exchanges

The Debt Office also has cash flows in currencies other than kronor and makes regular exchanges in the foreign exchange market. New and maturing loans, interest payments, EU payments, FX forward redemptions and collateral transfers (CSA flows) are examples of what generates cash flows in foreign currencies. Another example is the exchanges made by the Debt Office on behalf of other

government agencies. This entails the Debt Office either issuing an FX forward to an agency that wants to buy or sell a currency on a future occasion or making exchanges via the multi-currency cash pool.

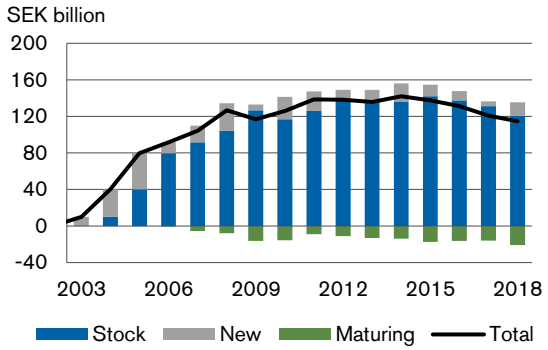
The multi-currency cash pool is part of the framework agreement for government payment services that has been in effect since spring 2017. The purpose of this cash pool is to gather government agencies' currency flows and let the Debt Office manage the net of these flows. This reduces the cost of currency exchanges by government agencies. Initially, only the Swedish Pensions Agency was affiliated to the multi-currency cash pool, but in 2018 the Swedish Export Credit Agency was added.

Reduced swap volume when maturity is extended

For many years, the Debt Office has used interest rate swaps to shorten the duration of the nominal krona debt and thus lower the expected cost. The basis for the strategy has been that, historically, it has been less expensive to borrow in short rather than long maturities. In recent years, this cost advantage is seen to have decreased. On this basis, the Government has decided to gradually extend the duration of the nominal krona debt, and the Debt Office has therefore reduced the use of swaps that shorten the maturity (see also the chapter Reporting of cost and risk).

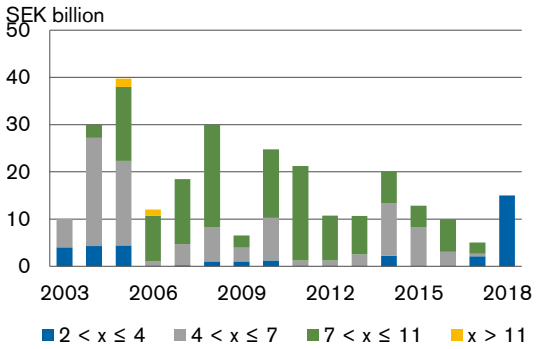
The volume of new interest rate swaps was SEK 15 billion in 2018, which was more than in the previous year but still less than the volume that matured. The outstanding stock thus continued to decline in 2018 and reached the lowest level in ten years (see Figure 20). In addition, the new interest rate swaps had significantly shorter maturities than before, and consequently less effect on the duration compared with the same nominal amount in longer maturities. Until 2018, the Debt Office mainly initiated interest rate swaps with an original maturity of between four and 11 years, while the focus in 2018 was on maturities of between two and four years (see Figure 21).

Figure 20. Nominal amount of outstanding interest rate swaps on last trading day of year



Outstanding stock of interest rate swaps in SEK to adjust the nominal krona debt maturity. The Debt Office receives a fixed rate and pays a floating rate in all swaps.

Figure 21. Nominal amount of new interest rate swaps per year by maturity interval



New interest rate swaps in SEK to adjust the maturity of the nominal krona debt.

The need for a larger volume in 2018 is because the cash surplus in the liquidity management would have otherwise caused the maturity to become too long in relation to the Government's guidelines. Short-term loans in liquidity management contribute to shortening the average maturity of the debt, while short-term assets have the opposite effect.

How interest rate swaps work

An interest rate swap is an agreement with a counterparty to exchange a fixed interest rate for a floating interest rate. The Debt Office usually receives a fixed rate and pays a floating rate in order to shorten the duration of the debt.

Interest rate swaps provide the opportunity to control the duration without affecting the refinancing risks or the borrowing plan. However, counterparty risks arise through these derivative transactions. The last chapter describes how the Debt Office handles such risks.

The Debt Office took a position for a stronger krona

In accordance with the Government's guidelines, the foreign currency exposure of the central government debt has been reduced at a steady pace in recent years, as the Debt Office has continually converted kronor into foreign currency for the equivalent of SEK 20 billion per year. These conversions are disadvantageous when the krona is weak. In May 2018, the Debt Office therefore decided to temporarily stall the reduction of the foreign currency debt by taking a position for a stronger krona of up to SEK 7 billion in total.

According to the decision, the position would be taken stepwise at different levels of the krona exchange rate against the euro. At the end of 2018, the position amounted to SEK 3.9 billion, which means that there was still room to reduce the rate of amortisation even more if the krona were to further weaken. However, the position's effect on the rate of amortisation is limited, as the annual reduction in the exposure remains at around SEK 20 billion in accordance with the guidelines.

The Debt Office's Board of Directors decided in February 2018 to stop using external managers, which since 1992 served as a complement to internal position-taking. The background was that the Debt Office's position-taking in general had been reconsidered and personnel resources reduced in recent years. In the choice between adding new resources or further limiting the operations, the Board decided that position-taking would henceforth only be conducted internally. The decision was implemented at the end of March.

The result of the position-taking is presented in the last chapter.

Evaluation of strategies and actions

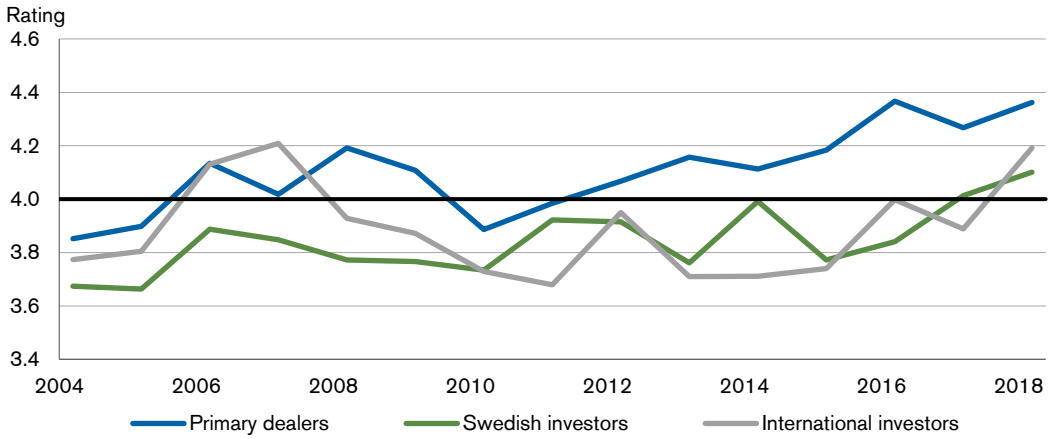
An important part of minimising the cost of central government debt is to make the government securities market as attractive as possible for investors. The Debt Office's strategies therefore focus on promoting liquidity and infrastructure in the market, communicating clearly and acting predictably. This chapter presents how primary dealers and investors view the strategies and the way in which they are implemented. The overall rating in the survey in 2018 was at a record-high level.

Confidence at record-high level in 2018 survey

The Debt Office measures confidence in its borrowing activities through a survey of investors and primary dealers. The survey has been conducted annually since 2004 by Kantar Sifo Prospera (below Prospera). The result shows how market participants value the importance of the Debt Office's strategies (as described in the first chapter) and how well they think the strategies are realised. Prospera also makes an overall assessment in which the survey ratings are weighted together based on the significance of the factors.

The development of the combined rating is shown in Figure 22. Both primary dealers and Swedish and international investors gave a higher rating in 2018 than in 2017, and now for the first time all three groups are over 4. Overall, this is the highest result measured to-date. According to Prospera, a score above 4 should be interpreted as excellent, while a score below 3 is unsatisfactory.

Figure 22. Combined rating for the Debt Office's strategies and actions



The increase compared with the previous year is mainly explained by higher values for the information on issuance volumes and clear and consistent action in the market. The rating dropped slightly in one area – the standing facility for switches of inflation-linked bonds – but this also achieved a rating of 4.

Focusing on the right aspects

Table 4 shows the five most important requirements from market participants, while Table 5 shows the survey ratings in order of ranking. A reasonable conclusion as to why the same factors occur in both tables is that the Debt Office is focusing on the right aspects.

Table 4. The market's most important requirements

Requirements	Importance
Repo facility for government securities	4.9
Communication about borrowing requirement and issuance	4.6
The DO acts clearly and consistently	4.5
Information on volumes and other terms regarding government bonds	4.5
Switching facility for inflation-linked bonds	4.3

Table 5. The Debt Office's main strengths

Strengths	Rating
Repo facility for government securities	4.8
Communication about borrowing requirement and issuance	4.4
Information on volumes and other terms regarding government bonds	4.4
The DO acts clearly and consistently	4.3
Switching facility for inflation-linked bonds	4.3

Repos in government securities seen as most important

The Debt Office has little opportunity to influence liquidity in the secondary market directly, because the supply of government bonds depends on the government borrowing requirement. Instead, the strategy is to try to create conditions for good liquidity through repo facilities. As described earlier, liquidity in the Swedish government securities market has deteriorated in recent years, and the Debt Office's unlimited repo facility has played an important role in the functioning of the market.

When the survey participants were asked to rank the importance of the Debt Office's strategies, the market-supporting repo facility was ranked first. The significance of this factor was also that which increased most between 2017 and 2018. The unlimited repo facility means that primary dealers know they always have access to government securities, which makes it easier for them to quote prices and thus promote liquidity in the market. The survey rating for the repo facility increased from 4.7 to 4.8.

The Debt Office also offers switches between various government securities. New bonds are normally introduced using switches so that the new loans quickly achieve good liquidity. In addition, a standing facility for switches of inflation-linked bonds is offered to promote market liquidity. Both the significance of the switches of inflation-linked bonds and their survey rating declined in 2018. One likely explanation is the lower turnover in the secondary market. According to the survey, interest in Swedish inflation-linked bonds has also declined among foreign investors.

Continued high ratings for transparency and predictability

The strategy of transparency and predictability entails that the Debt Office endeavours to:

- conduct borrowing in a consistent manner, with clear principles
- regularly publish forecasts on the borrowing requirement
- communicate openly and clearly
- maintain good investor relations.

Clear communication and predictable behaviour

The survey rating for the Debt Office's communication on the central government borrowing requirement and funding was 4.4 in the 2018 survey, and the respondents gave a rating of 4.3 for clear and consistent action. This is an increase in both areas. Investors and primary dealers also responded that they consider the Debt Office to be more transparent than both other debt management offices and Swedish mortgage institutions.

The Debt Office's website is still considered the most important channel for information. Of the investors and primary dealers who visit the site, over 90 per cent responded that they found the information they were looking for, although the information could be structured better. The Debt Office's website compares well with other debt management offices and mortgage institutions.

Active work with investor contacts

Primary dealers have the most active role in the sale of government securities, providing investors with analysis and information about the Debt Office's issuance. However, in order to maintain credibility, it is also important that investors, without intermediaries, can access the information they require. The Debt Office therefore meets with investors in both personal meetings and via larger conferences. In 2018, the Debt Office made visits to investors in Sweden, the rest of Europe, the US and Asia.

The Debt Office received a survey rating of 3.7 for contact with Swedish investors and 3.9 with foreign investors. The proportion of Swedish investors who have direct contact with the Debt Office increased during 2018, while the corresponding proportion for foreign investors decreased.

The results of the survey are presented in their entirety on the Debt Office's website.

Reporting of cost and risk

The Debt Office continued to extend the maturity and reduce the foreign currency exposure of the central government debt in 2018, in accordance with the Government's guidelines. The maturity of the nominal krona debt was above the guideline interval during the second half of the year because short-term borrowing was unusually small as a result of the cash surplus. At the same time, the maturity of the inflation-linked debt was below the interval. The cost of the central government debt was SEK 20 billion, corresponding to 0.4 per cent of GDP. This is an increase from 2017 but in line with the average over the last five years. Over time, the cost has decreased in pace with falling debt and declining interest rates.

As previously described, the overall balance between cost and risk is determined in the Government's guidelines for debt management. Therefore, part of the evaluation involves monitoring the management of the debt in relation to the year's guideline targets for debt composition and maturity. Subsequently, the overall cost of the debt and the risk in terms of cost variation are reported. Quantitative evaluations are made in the areas of debt management that allow for relevant cost comparisons. This applies to borrowing in inflation-linked bonds and in the retail market as well as position-taking. The use of interest rate swaps is also evaluated. Finally, refinancing and counterparty risks are monitored and followed up.

Longer maturity and less foreign-currency exposure

According to the Government's guidelines for 2018, the maturity of the krona debt is to be extended by another 0.3 years. It is the third consecutive year that the maturity has been extended, as the cost advantage of having a short fixed interest term was deemed to have decreased. For other types of debt, the guidelines remained unaltered. The foreign currency exposure should decrease by a maximum of SEK 30 billion per year, while the proportion of inflation-linked debt is to be steered toward 20 per cent of the total debt in the long term.

Table 6. Guidelines for 2018

Debt class	Share of debt	Maturity
Nominal krona debt		4.3-5.5 years
Inflation-linked debt	20 per cent	6-9 years
Foreign currency debt	Decrease by no more than SEK 30 billion per year	0-1 years

Table 7. Outcome in relation to guidelines

Debt class	Share of debt	Maturity
Nominal krona debt		5.6 years
Inflation-linked debt	On average 23 per cent	6.1 years
Foreign currency debt	Decrease by SEK 16.4 billion	0.2 years

Composition was in line with the guidelines, while maturity deviated

The debt composition was in line with the guidelines during the year (see Tables 6 and 7). However, the average maturity of the nominal krona debt was longer toward the end of the year than stipulated in the guidelines, while the maturity of the inflation-linked debt was shorter (see Figures 23 and 24).

In September, the Debt Office proposed merging the steering of the maturity of the two types of debt in the guidelines for coming years, on which the Government subsequently decided in November. Therefore, the Debt Office determined that it was not appropriate to take measures to, in the short-term, restore the maturity in the types of debt to 2018 guideline interval.

The main reason why the maturity of the nominal krona debt exceeded the target was that the large cash surplus led to an unusually low level of short-term borrowing in 2018. The fact that the maturity of the inflation-linked debt was below the guideline interval is mainly because the level of new borrowing in inflation-linked bonds was low in relation to the outstanding stock and thereby had limited effect on maturity. The Debt Office also does not have the opportunity to control the maturity of the debt by means of derivatives. The maturity is also affected by primary dealers regularly switching inflation-linked bonds within the framework of the Debt Office's market-supporting facility.

Figure 23. Duration of nominal krona debt

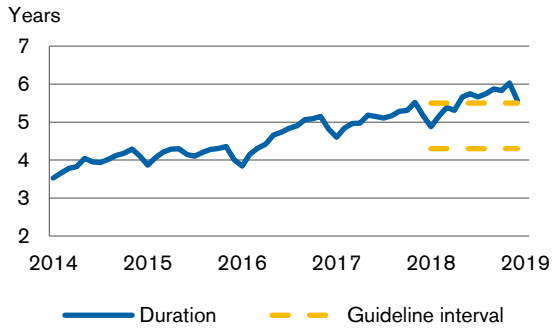
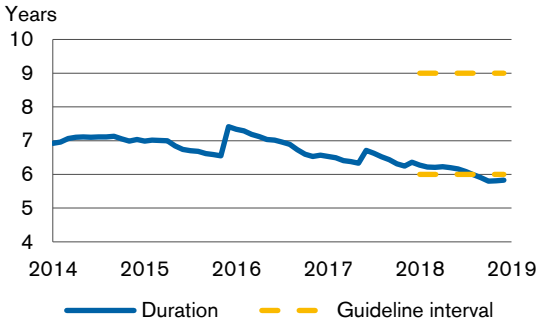
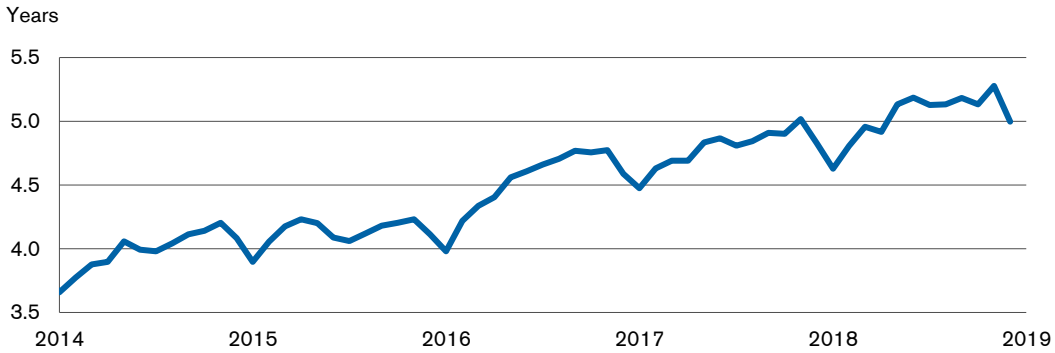


Figure 24. Duration of inflation-linked debt



The duration of the central government debt as a whole continued to increase during the year (see Figure 25). This is because both the maturity was extended according to the guidelines decision for 2018 and the short-term funding was at a historically low level in light of the large cash surpluses.

Figure 25. Duration of the central government debt



Foreign currency exposure decreased in accordance with the guidelines

The foreign currency exposure is divided among several currencies with emphasis on the euro and the Swiss franc. In 2018, the Debt Office planned to reduce its exposure by purchasing CAD 260 million, CHF 1,560 million, EUR 380 million and USD 140 million, which corresponds to a total of SEK 20 billion, calculated on exchange rates as at 30 November 2017 (in accordance with the

Financial and Risk Policy). The reduction was made in these currencies because it was considered the most cost-effective way to reduce the risk in the foreign currency debt.

The actual decrease during the year was SEK 16.4 billion measured in the same way as above. The fact that the reduction was less than planned is explained by the approach the Debt Office takes to reduce exposure. The Debt Office makes foreign currency purchases at a steady pace over the year, while external foreign currency flows (e.g. EU funds) are coming in at an uneven rate, which means that an exact exposure at year-end cannot be ascertained. Furthermore, in 2018 the forwards that the Debt Office issues in its capacity as the central government's treasury were included in the foreign currency exposure. This change increased the exposure by SEK 10 billion. Figure 26 shows the currency exposure at year-end 2018.

Figure 27 shows how the foreign currency debt has gradually decreased since 2015.

Figure 26. Currency exposure at year-end 2018

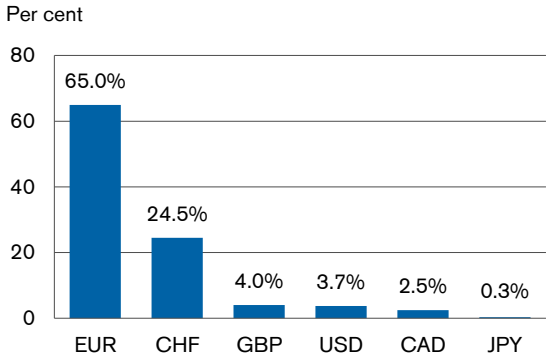
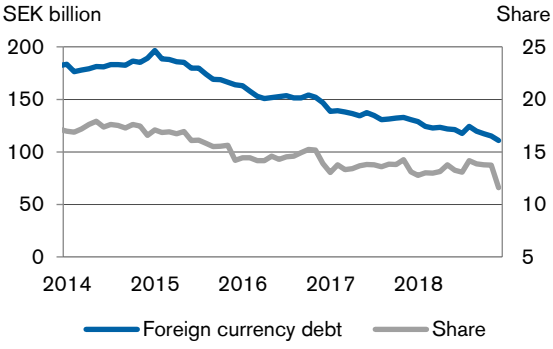


Figure 27. Foreign currency debt and its share of total central government debt



Measured at current exchange rates without regard to the currency exposure in the central government's treasury.

Revised risk management from turn-of-year 2018/2019

At the end of 2018, the Debt Office decided that the foreign currency exposure that arises in the state's treasury operations should be included in the steering of the composition and maturity of the central government debt. The management of the foreign currency risk in the treasury is thus integrated with the management of the debt. The change was made to achieve a more transparent, appropriate and consistent management of foreign currency risk. The foreign currency exposure within the treasury is mainly due to the government agencies purchasing and, to a certain extent, selling foreign currency using forward contracts offered by the Debt Office.

Exchange rate effects increased cost of debt

The cost of the central government debt amounted to SEK 20 billion in 2018 (see Table 8). This corresponds to 0.4 per cent of GDP. The outcome was in line with the average for the last five years but about SEK 9 billion higher than in 2017. The increase is mainly due to the weaker krona raising the value of loans in foreign currency in 2018, as opposed to 2017 when the revaluation effects instead led to the cost of these loans decreasing.

Another explanation for the change compared with the previous year is a higher cost for buybacks in the switch facility for primary dealers. When the Debt Office buys back previously issued bonds with

nominal yields that are higher than prevailing market yields, a loss is realised. On the other hand, the cost is lower for the new bonds issued at a lower yield. The long-term cost of the debt is therefore not affected by the switches.

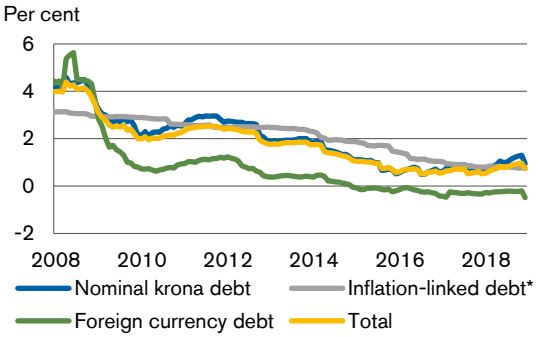
From a long-term perspective, the central government's interest costs have fallen as the debt has decreased and gradually been re-fixed at lower interest rates. Figure 28 shows the yield at which each type of debt has, on average, been issued. For the inflation-linked debt and the foreign currency debt, the cost depends, in addition to the issue yield, on exchange rates and inflation.

Table 8. Cost, SEK billion

Debt class	2014	2015	2016	2017	2018	5-year average
Nominal krona debt	12	10	4	6	8	8
Inflation-linked debt	5	8	11	8	7	8
Foreign currency debt	17	4	8	-3	5	6
Total	**34**	**22**	**23**	**12**	**20**	**22**

Cost based on the measurement principle of amortised cost

Figure 28. Average issue yield



*Real interest rate

As of 2018, the Debt Office reports the cost of the central government debt using the principle of amortised cost. The method complies with the international accounting standards for reporting financial liabilities and assets held to maturity and implies that the instruments are measured at their issue yield. The most important difference compared with the cost measure used previously is that inflation and exchange rate fluctuations have an impact on the cost directly instead of being distributed over the lifespan of the instruments. The latter measure was a disadvantage in the context of evaluation as it required repeated backward-adjustment of the cost until the instrument matured.

The cost of the debt can also be calculated in relation to the outstanding debt. By using this method, a kind of average effective interest rate is obtained. Expressed in this way, the cost was 2.2 per cent in 2018, which is 0.1 percentage point higher than the average over the past five years (see Table 9). The cost varies between different types of debt, partly because the maturity differs.

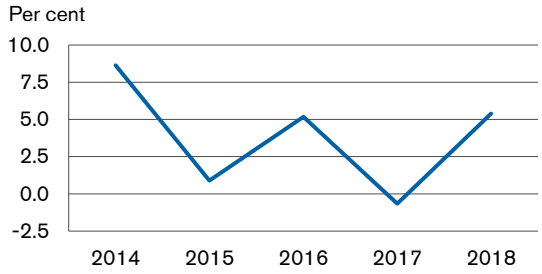
Table 9. Cost for central government debt as average effective interest rate, per cent

Debt class	2014	2015	2016	2017	2018	5-year average	Standard deviation over 5 years
Nominal krona debt	1.8	1.3	0.6	0.9	1.3	1.2	0.4
Inflation-linked debt	2.5	4.1	5.3	3.9	3.1	3.8	1.0
Foreign currency debt	9.1	2.0	5.3	-2.1	4.9	3.8	3.7
Total	**3.2**	**1.9**	**2.1**	**1.1**	**2.2**	**2.1**	**0.7**

In 2018, the cost was lowest for the nominal krona debt. The level of 1.3 per cent was in line with the average for the past five years. The foreign currency debt had the highest cost: 4.9 per cent. This is mainly because the krona weakened against the currencies in the foreign currency debt (see Figure 29).

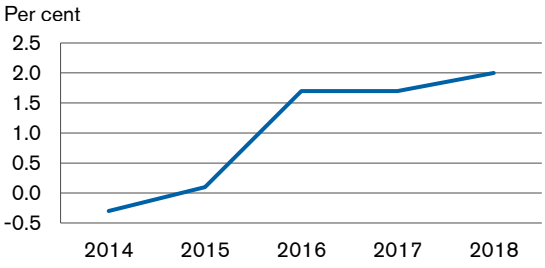
For inflation-linked debt, the cost was 3.1 per cent in 2018. The maturity of the inflation-linked debt has historically been relatively long, which is why the stock of inflation-linked debt contains a larger proportion of loans that were raised long ago at higher interest rates. In addition, inflation was higher in 2018 than it had been in several years (see Figure 30).

Figure 29. Annual change in krona exchange rate against foreign currency debt



Plus means a weakening of the krona, minus a strengthening of krona.

Figure 30. Annual change in inflation measured by CPI



Exchange rate fluctuations drive the cost variation

Different types of debt also entail different degrees of risk. Table 9 shows the risk in terms of standard deviation for the cost over the past five years. For foreign currency debt, the cost variation is considerably higher than for the krona debt. This explains why foreign currency debt has gradually declined in recent years. The Debt Office stated in its analysis in the proposed guidelines for 2015 that it was not able to establish any systematic savings with currency exposure. Thus, it was not possible to justify the higher risk.

Inflation-linked funding resulted in additional cost in 2018

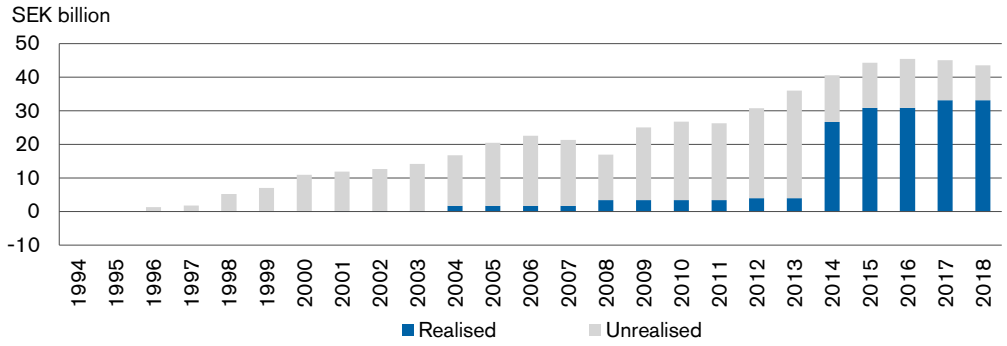
Since inflation-linked bonds were introduced in 1994, inflation has been lower than the average break-even inflation in the issues.[3] Therefore, the cost has been lower for the inflation-linked debt than for a counterfactual nominal debt with the same maturity. Figure 31 shows that the estimated result since 1994 has accumulated to SEK 44 billion, of which SEK 33 billion has been realised. A large part comes from the first years when the stock of inflation-linked debt was built up. Break-even inflation at this time was considerably higher than in recent years.

[3] *Break-even inflation refers to the rate of inflation that is implicit in the difference in interest rates between an inflation-linked bond and a government bond with the same maturity.*

In 2018, the cost of the inflation-linked debt was higher than for a corresponding nominal debt. This is because the inflation adjustment, which amounted to 2.3 per cent, was higher than the average break-even inflation in the issues that built up the inflation-linked debt.[4] The estimated result for inflation-linked borrowing was SEK -1.5 billion for 2018.

The Debt Office intends to analyse in more detail the cost and risk properties of the inflation-linked debt and review the debt proportion target in the proposed guidelines for 2020.

Figure 31. Cumulative estimated result of inflation-linked borrowing



No savings from retail market borrowing

Retail market borrowing could not contribute to lowering the cost of central government debt in 2018.[5] No new lottery bonds were issued during the year and the National Debt Savings is being wound up. The lottery bond stock outstanding at year-end was SEK 5 billion, while just over SEK 60 million remained of the National Debt Savings accounts. The last accounts with fixed interest mature in 2020.

In 2018, borrowing in the retail market resulted in an additional cost of SEK 6 million (see Table 10). This is an improvement compared with 2017, when the result was burdened by lottery bonds issued at a higher yield than the corresponding government bond yield. For the five-year period 2014–2018, the total cost savings was SEK 1 million.

Table 10. Savings through retail-market borrowing, SEK million

	2014	2015	2016	2017	2018	Total
Lottery bonds	71	33	-23	-21	-3	57
National Debt Savings accounts	0	-40	-10	-4	-3	-56
Sum of cost savings	**71**	**-7**	**-33**	**-24**	**-6**	**1**

[4] The inflation-linked bonds are indexed against the CPI with a three-month lag. The figure therefore refers to inflation during the October 2017–October 2018 period.

[5] Compared with borrowing in the institutional market.

Reduced loss on positions

For 2018, position-taking including debt management fees showed a loss of SEK 16 million, compared with a loss of SEK 102 million the previous year. As can be seen from Table 11, the loss came from the external management, while the internal position-taking showed a gain. Total risk utilisation decreased during the year, mainly due to the winding up of the external management.

Table 11. Results for position-taking, SEK million

	2014	2015	2016	2017	2018	Total	Average
Internal active position-taking	-216[1]	-47	-1	13	11	-240	-48
External active position-taking excluding management fees	90	44	44	-104	-20	54	11
External active position-taking including management fees	46	19	28	-115	-26	-48	-10
Total excluding management fees	**-126**	**-2**	**43**	**-91**	**-9**	**-186**	**-37**
Total including management fees	**-170**	**-27**	**27**	**-102**	**-16**	**-288**	**-58**
Position of a stronger krona					**73**	**73**	

The internal mandate was discontinued in the second half of 2014 because positions for a stronger dollar and higher interest rates in the US had led to significant losses.

Continued loss in the external management

The external management resulted in a loss of SEK 26 million, including management fees. The loss arose as a result of currency positions, while interest rate positions generated a gain. The most loss-making of the positions were those taken in anticipation of the dollar appreciating against the UK pound, the euro and the Swiss franc.

The risk utilisation for the external managers as a group was SEK 4 million, measured as daily Value-at-Risk during the period of 2018 in which they were operating. The Debt Office's Board of Directors resolved in February 2018 to wind up the external management. The decision was implemented at the end of March.

Internal position-taking generated gain

Internal position-taking resulted in a gain of SEK 11 million for 2018 (corresponding to 7 basis points). Looking at the year as a whole, positions for weaker Swiss francs and euros against US dollars were the most profitable. Position-taking in interest rates resulted in a loss.

The risk utilisation in internal management was SEK 3.4 million, measured as daily Value-at-Risk.

Evaluation of the operations in the long term

Because the financial result of position-taking varies between years, it is also evaluated in five-year periods. For the period 2014–2018, the average annual net result, which includes management costs, was a loss of SEK 58 million per year (see Table 11). Both the internal and external management contributed to the loss.

In the internal management, it was mainly the loss in 2014 that brought down the result. The operations were closed in the second half of that year after positions for a stronger dollar and higher

interest rates in the US led to significant losses. For the external part, the average net result was also negative, but at the gross level (excluding management costs), the contribution was positive.

Unrealised gain from the position of a stronger krona

In May 2018, the Debt Office decided to take a position for a stronger krona to reduce the cost of the central government debt. According to the decision, the position would be taken stepwise at different levels of the krona exchange rate against the euro and at most be SEK 7 billion. At the end of the year, the position comprised SEK 3.9 billion and the unrealised gain amounted to SEK 73 million. The final, realised gain can only be calculated when the position is closed.

In accordance with the Government's guidelines, the foreign currency exposure of the central government debt has been reduced at a steady pace in recent years, as the Debt Office has continually exchanged kronor for foreign currency for the equivalent of SEK 20 billion per year. These conversions are disadvantageous when the krona is weak. The position for a stronger krona entails that foreign currency exposure decreases at a slower pace over a period. When the position is eventually discontinued, the pace will instead increase correspondingly.

Interest rate swaps have contributed to lower costs

The Debt Office uses interest rate swaps to adjust the maturity of the nominal krona debt without affecting the underlying funding in government securities. The estimated result of interest rate swaps entered into for this purpose is shown in Figure 32. The description largely follows the method proposed by the Swedish National Audit Office in the report "The Swedish National Debt Office's use of interest rate swaps – motives, results and reporting" (RiR 2018:18).

To better understand what drives the result, the outcome is divided into four distinct factors, which are described in more detail in the fact box on the next page. The factors that mainly affected the result in 2018 were unexpected interest rate fluctuations and term premia, while other factors had a limited impact. Overall, the interest rate swaps gave rise to net proceeds of SEK 2.9 billion in 2018.

Figure 32. Estimated result per year

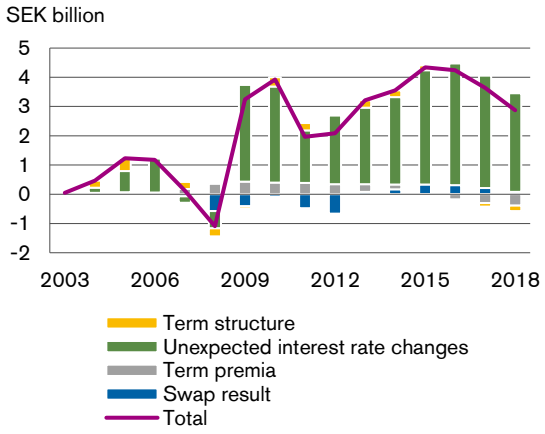
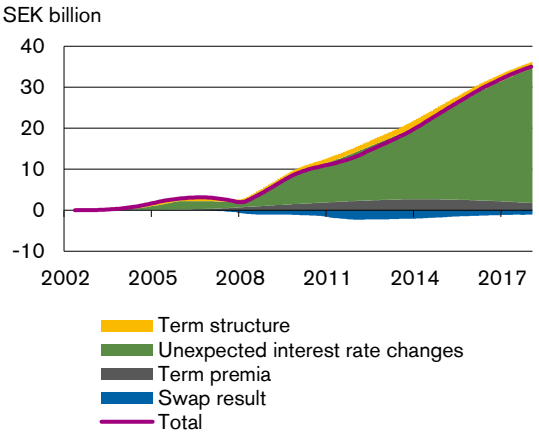


Figure 33. Cumulative result



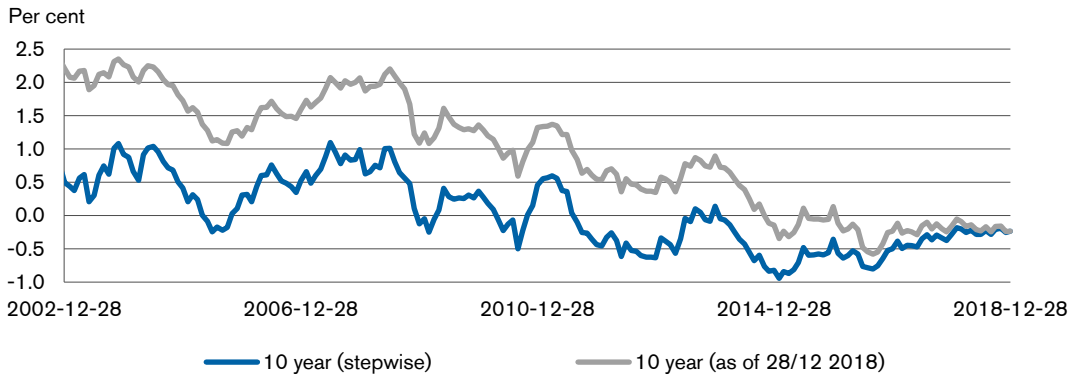
The fact that the short-term interest rates were lower than expected contributed about SEK 3.4 billion to the net result. This is also the clearly dominant factor in the last ten years (see Figure

33). However, the contribution has decreased over the past three years and is likely to continue to decline as older interest rate swaps mature.

The second factor that affected the result for 2018 is the term premium. The term premium corresponds to the structural savings of borrowing in short maturities compared with long maturities. Historically, investors have demanded higher returns to tie up their money for a long time, which has meant that over time it has been cheaper for the state to borrow in short maturities. In recent years, however, the premium is estimated to have decreased (see Figure 34). For the past four years, the premium has contributed to a loss, and for 2018 the additional cost is estimated at SEK 0.4 billion.

Term premium estimates are affected by the period of time used in the calculation. To accurately monitor the results, the term premia are estimated based on the historical data available at the time the swaps were entered into (stepwise estimation). Using the stepwise estimates, the term premium is lower compared with the estimates reported in the guidelines, which are based on all available data up to the time of calculation.

Figure 34. Estimation of term premia



The estimates are based on monthly data for Swedish swap rates from July 1995 (see fact box).

Breakdown of the result for interest rate swaps

The calculation result for the interest rate swaps can be divided into four components:

Swap result reflects the value of the actual method of using swaps to shorten the maturity instead of altering the distribution between bonds and treasury bills. The result is calculated as the net of obtaining the difference between the swap rate and the corresponding yield on a government bond (the swap spread) and paying the difference between the Stockholm Interbank Offered Rate (STIBOR) and the yield on a treasury bill (the TED spread).

Term premium corresponds to the savings of borrowing in short maturities in relation to long maturities. The premium is calculated as the difference between the actual observable government bond yield and the estimated non-observable risk-neutral government bond yield. The Debt Office bases its term premium estimates on the ACM model.[3]

Unexpected interest rate fluctuations are the difference between the expected interest rate development at the time the swap was entered into and the realised floating rate during the lifespan of the swap. Unexpected interest rate fluctuations can occur, for example, if the Riksbank raises or lowers the policy rate faster than expected.

Term structure is the part of the result that is based on the difference between the fixed rate and the expected floating rate over the same horizon. If there are expectations that the policy rate will be raised in the future, the fixed rate is higher than the floating rate at the beginning of the time period and lower at the end of the period. For an individual swap, it gives rise to a positive result in the first years and a negative result in the last few years. Measured over the entire period, this component becomes close to zero.

[3] *Tobias Adrian, Richard K. Crump and Emanuel Moench, "Pricing the Term Structure with Linear Regressions", Journal of Financial Economics 110 (1), October 2013, pp. 110-138.*

Low refinancing risk with an even maturity profile

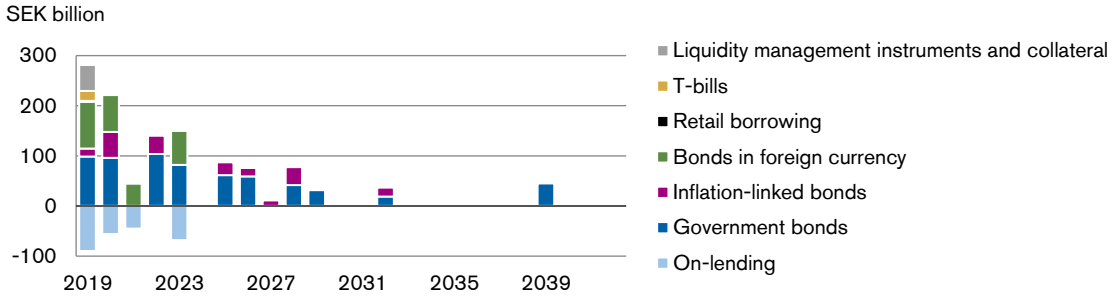
Refinancing risk refers to the risk that loans reaching maturity can only be replaced with new loans at markedly higher costs or, in extreme cases, cannot be refinanced at all. The refinancing risk is usually considered higher the larger the loans are that are maturing in the near future. To some extent this is a simplification, as a bond that is maturing seldom needs to be financed right away by issuing another bond. With long-term issuance planning and small issuance volumes at regular auctions, refinancing is spread over a long period of time and old bond loans are often replaced before maturing.

Maturing bonds have the same effect as other government payments. The net of the central government's daily income and expenditure (net borrowing requirement) varies and on some days may amount to between SEK 50 and 100 billion. The refinancing risk is therefore only part of what is usually called liquidity risk (or financing risk), which entails the possibility of managing payments in a broader sense.

Nevertheless, the refinancing risk should be taken into account. The Debt Office tries to limit this risk by working to maintain an even maturity profile for government and inflation-linked bonds and by contributing to the establishment of a well-functioning market in government securities.

Figure 35 shows the maturity profile of the central government debt, i.e. the size of the amounts in the outstanding debt that mature in each year. The figure also shows claims that fall due in the form of on-lending to the Riksbank. The claims largely match the bond loans in foreign currency.

Figure 35. Maturity profile in December 2018

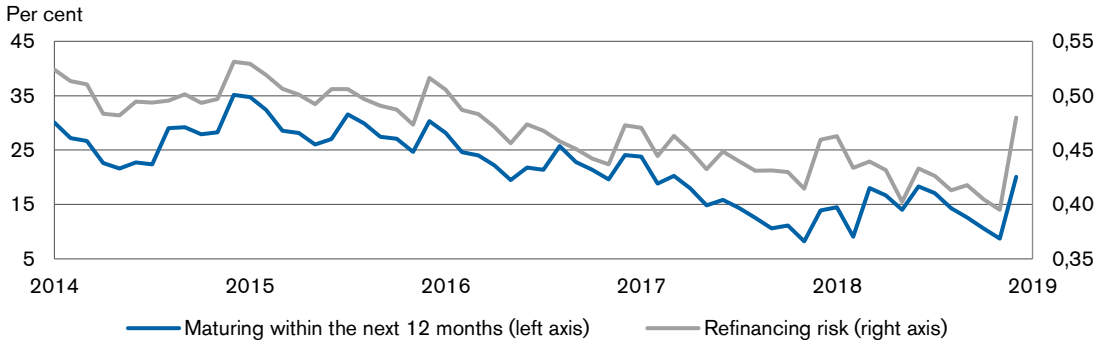


Normally, a large part of the debt matures in the coming year. This is due to the extensive liquidity management and the management of seasonal fluctuations in the net borrowing requirement. At the end of the year, short-term borrowing is greatest as a large part of government payments are made during the month of December. The liquidity management is described in more detail on page 26.

Otherwise, the maturity profile is relatively even up to ten years, with the exception of borrowing for on-lending to the Riksbank, which is concentrated to the next five years. An uneven maturity profile could give rise to greater risks in the future when large amounts must be refinanced. In terms of risk however, what is most important at a given point in time is what is maturing in the near future.

Figure 36 shows two measures of refinancing risk. The first measure shows what proportion of the debt will mature within twelve months. The second measure assigns a value of one to a loan maturing immediately and a value of zero to a loan that never matures. All loans are then weighted together to obtain a figure between zero and one for the total central government debt.

Figure 36. Refinancing risk



The measurements show the same pattern although one lacks the sharp break at 12 months. The figure also shows a clear seasonal pattern due to the extensive money market borrowing around the turn of the year. The increased refinancing risk in December 2018 is also explained by the fact that a bond maturing at the end of 2019 falls within the coming 12-month period.

Counterparty risk limited by minimum rating requirements

Counterparty risk refers to the risk that a counterparty will not fulfil its obligations in a transaction. Counterparty risks arise both when investing surpluses as part of liquidity management and when the Debt Office enters into derivative transactions without central counterparty clearing. The risks in investments and derivative transactions are handled differently, but the Debt Office in both cases sets minimum credit rating requirements for the counterparty.

In liquidity management, the Debt Office borrows or invests funds on a daily basis so that the state can fulfil its payments at the lowest possible cost. To manage the counterparty risk for these investments, there are limits based on the counterparty's creditworthiness that restrict maximum exposure and maturity.

The Debt Office uses derivative instruments to steer the maturity and foreign currency distribution of the central government debt and to take positions. Transactions can be settled either bilaterally or through central counterparty clearing.

In order for the Debt Office to be able to trade derivative instruments that are not settled centrally, the Debt Office and the counterparty must establish an ISDA agreement and a Credit Support Annex (CSA). The CSA agreement is bilateral, which means that the counterparty must provide collateral to the Debt Office if the value of the instruments is positive for the Debt Office and vice versa. This collateral provides protection in the event that the counterparty is unable to fulfil its commitments. A review of the ISDA/CSA agreements was completed in 2017. The results of the review included that the exchange of collateral will begin to take place earlier, in line with current market practice. The change will be introduced as the Debt Office and the counterparty sign new, revised agreements. Regulations of this type are defined and updated within the framework of the Debt Office's Financial and Risk Policy.

The Debt Office has a lower limit of A- for a counterparty's weighted long-term credit rating in order to limit counterparty risk. The higher the rating, the greater the scope for entering into transactions with a particular counterparty. The weighted credit rating is based on scores from three different credit rating agencies. In 2018, there was only one deviation from the credit risk limits established by the Debt Office's Board of Directors. The deviation was handled in accordance with the Debt Office's procedures. Apart from this deviation, there were only minor changes in the credit ratings for the Debt Office's counterparties, mostly in the form of downgrades. These counterparties remain as approved for the Debt Office's investment needs, as their long-term credit rating is A- or higher.

During the year, the Debt Office had significant investment needs in its liquidity management. The investments were primarily made in Riksbank Certificates and otherwise with counterparties with good creditworthiness. The risk exposure was consequently very limited.

The Swedish National Debt Office works to ensure that central government finances are managed efficiently and the financial system is stable. The Debt Office thus has a critical role in the financial market and the Swedish economy.

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