

Basis for evaluation

Central government debt management 2017



Basis for evaluation 2017

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1 The year in brief

The year was characterised by unexpectedly large surpluses in central government finances and the Debt Office therefore gradually reduced borrowing. Despite lower issue volumes, there was a considerable cash surplus in the liquidity management. The Riksbank kept purchasing government securities and owned almost half of the outstanding stock of government bonds at the end of the year. The Riksbank's purchases, market regulations and the low supply of new government bonds contributed to a further deterioration of liquidity in the government securities market during the year. The cost of the central government debt remained at historically low levels. In the assessment of the Debt Office the objectives for the debt management were achieved in all essential respects in 2017.

The cost of the central government debt was largely unchanged from the preceding year. During 2017 the Debt Office sold government bonds at an average yield of 0.51 per cent, an increase from 0.28 per cent in the preceding year. Interest payments amounted to SEK 10.5 billion. **See chapters 3 and 6.**

Central government finances showed a surplus. The budget balance was SEK 62 billion compared with SEK 85 billion in the previous year. As a result of the strength of the economy, tax income remained high. The Debt Office overestimated the net borrowing requirement in all forecasts during the year. **See chapters 4 and 5.**

Borrowing in government bonds and inflation-linked bonds was the lowest in five years. This reduction was made in the light of the unexpectedly low net borrowing requirement. Compared with the preceding year bond borrowing decreased by SEK 34 billion. **See chapters 5 and 6.**

Liquidity management handled large surpluses even though borrowing in all types of government securities was reduced. On average the Debt Office invested SEK 74 billion per day. **See chapters 5 and 7.**

Poorer liquidity in government securities. The assessment of market participants is that liquidity in the markets for government securities deteriorated further during the year. Reasons given were regulations that affect the possibilities for primary dealers to take on risk and the Riksbank's purchases of government bonds. **See chapter 2.**

The need for market commitment activities increased in pace with purchases of government bonds by the Riksbank. The demand for the Debt Office's standing repo facility for government bonds rose strongly in 2017. **See chapters 2, 5 and 6.**

The Debt Office reduced currency exposure. As a step in the Government's decision to gradually reduce the foreign currency exposure of the debt the Debt Office continued to buy foreign currency. At the end of 2017 the foreign currency debt was SEK 16 billion lower than one year before. **See chapter 3.**

2 Objectives and evaluation

The overall objective for the management of the central government debt is to minimise the cost of the debt in the long term taking risk into account. The Debt Office has also identified a number of intermediate objectives that are easier to influence and measure. This chapter describes how the management of the central government debt is governed and the possibilities of evaluation.

2.1 Mandate

The Swedish National Debt Office (the Debt Office) borrows money on behalf of central government. These loans finance deficits in the central government budget. When there is a surplus, the Debt Office amortises the central government debt.

In addition to handling surpluses and deficits in the central government budget, the Debt Office borrows to replace loans that mature. This means that old budget deficits are refinanced.

The borrowing is mainly carried out by issuing bonds in the Swedish and international capital markets. The investors who buy Debt Office bonds thereby lend money to the State. These investors include insurance companies, banks, investment funds and central banks.

A small part of the central government debt is financed in the retail market through lottery bonds.

1.2 Objectives and governance of debt management

The overall objective for the management of the central government debt is to minimise the cost in the long term taking risk into account. In practice this means first setting the level of risk that can be accepted. Then the cost is determined by the prevailing market prices when each loan is raised.

The Government adopts *Guidelines for central government debt management* each year. The basis for that decision includes the Debt Office's proposed guidelines. The government guidelines determine, for example, the distribution of the debt between nominal krona debt, inflation-linked krona debt and foreign currency debt. The guidelines also regulate the maturity of the different debt types.

The government guidelines limit the exposure to different risks. However, they say nothing about financing as such, i.e. the types of debt and the maturities actually used in the borrowing. The Debt Office uses derivatives to be able to borrow in a flexible and effective way while keeping risks within the limits set out in the guidelines.

According to the government guidelines, the Debt Office is to adopt internal guidelines. These are intended to regulate the composition of the foreign currency debt, principles for market commitment activities and certain other matters. The Board of the Debt Office adopts these internal guidelines in *The Debt Office's Financial and Risk Policy*.

The Debt Office's main contribution to minimising costs is to work to make the market for Swedish government securities attractive to as many investors as possible. If many investors want to lend money to the Swedish State, the cost of the central government debt will be lower. This also promotes liquidity in the market, which in turn stimulates demand for government securities. Another aspect is that the financing risk is lower if many lenders are prepared to lend money to the Swedish State.

The Debt Office can also influence the cost of the debt to some extent by making use of occasions when the pricing in the market is favourable.

Government guidelines for 2017

According to the government guidelines for 2017 the central government debt was to have the following composition:

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



Background to the current guidelines

Shares of different types of debt

The cost of and risk in the debt depend on its composition. The task of the Debt Office is to minimise the cost taking risk into account by proposing suitable shares of the types of debt included. The purpose of borrowing in different types of debt is both to be able to attract a broad range of investors and to spread risks. The spreading of risk is a result of the fact that the borrowing cost for the different types of debt usually does not vary in the same way over time.

Nominal krona debt

The most important type of debt is nominal government bonds. Here the Debt Office has an important task to promote the functioning and infrastructure of the market, partly by meeting the need for bonds with different maturities.

The Debt Office also issues T-bills for short-term borrowing. Along with short-term borrowing in foreign currencies (see below), T-bills can be used to cope with seasonal variations in the borrowing requirement.

Inflation-linked krona debt

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

Foreign currency debt

In the international capital market the Debt Office is able to borrow large amounts in a short time. By borrowing regularly in foreign currency even when the borrowing requirement is small, the Debt Office maintains the preparedness to borrow large amounts if needed.

The Debt Office has reviewed its handling of the foreign currency debt without being able to demonstrate that currency exposure leads to lower long-term costs. It does however lead to more cost variation. The Government has therefore decided to gradually reduce the currency exposure.

Maturity of the central government debt

The maturity of the central government debt affects the interest cost of the debt. Historically, short (floating) rates have been lower than long (fixed) rates, so it has usually been cheaper to borrow in short than in long maturities. However, borrowing in short maturities means that the interest rate is less predictable since it is often altered. So the cost of the central government debt varies more with short-term borrowing.

The maturity is decided by weighing cost reduction against cost variation. In the past ten years the maturity of the central government debt has been between three and four years measured as duration.

For some time now the costs of short-term and long-term borrowing appear to have moved close to one another. As a result, the advantage of short-term borrowing has decreased. The Government therefore decided to extend the maturity of the central government debt in its guideline decisions for 2016–2018.

Practical aspects

The choice of maturity is also influenced by other aspects. For example, it is in the interest of the Debt Office to ensure that all bond in the Swedish krona market are large enough for trading in the bonds to function well.

In the nominal krona debt the Debt Office uses interest rate swaps to shorten the duration. In recent years the Debt Office has only used interest rate swaps on a very small scale since the Government has decided to increase the maturity of the central government debt.

The SEK inflation derivatives market is not deep enough to allow for steering the duration of the inflation-linked debt. Therefore the maturity of the inflation-linked krona debt is determined solely by the maturity of the bonds.

In foreign currencies there are deep markets for interest rate swaps and here the Debt Office is a relatively small participant. The maturity of the foreign currency debt can therefore be steered without influencing markets.

The maturity of the various types of debt, measured as duration, was to be:

- Foreign currency debt: 0–1 years
- Inflation-linked krona debt: 6–9 years
- Nominal krona debt:
 - For instruments with a maturity of up to twelve years 2.9–3.9 years
 - For instruments with maturities of more than 12 years, a long-term benchmark for the outstanding volume of SEK 70 billion.

Under the government guidelines the Debt Office may take positions in the derivatives market to reduce the cost of or risk in the debt. Positions in foreign currency may not exceed SEK 300 million, measured as daily Value-at-Risk with a 95 per cent confidence level. Positions in the Swedish krona exchange rate are limited to a maximum of SEK 7.5 billion.

Evaluation and intermediate objectives

Under the guidelines the evaluation of the management of the debt is to be carried out in the light of the knowledge available at the time of the decision. However, evaluating the overall objective of cost minimisation is a complicated matter. The cost depends on the prevailing market interest rates, and the government securities offered by the Debt Office influence these interest rates. To know whether the Debt Office did minimise the loan cost it would, in principle, be necessary to know what costs alternative borrowing strategies would have resulted in.

Consequently it is difficult to set quantitative objectives for central government's borrowing cost. Nor is it obvious that comparisons with other borrowers give good answers. The Debt Office borrows more cheaply than any other borrower in the Swedish capital market, and compared with almost all other borrowers for borrowing in foreign currencies (see section 6.3).

As already mentioned the Debt Office works to make the government securities market as attractive as possible to investors. To concretise this work the Debt Office has broken down the overall objective into several intermediate objectives. They support the overall objective but are easier to influence and measure.

The most important intermediate objectives are that

- the market in government securities is liquid and has well-functioning infrastructure
- Swedish government securities attract a broad range of investors
- the Debt Office has transparent and open communication
- the Debt Office is clear and predictable
- the Debt Office has good counterparty and investor contacts
- the Debt Office achieves lower cost or risk in the central government debt by taking derivative positions in foreign currencies.

The Debt Office uses several management strategies to achieve its intermediate objectives. An annual questionnaire survey in which primary dealers and investors are asked to rate the outcome and importance of the Debt Office's strategies and activities is one means used to evaluate how well the Debt Office is fulfilling these objectives.

The Debt Office's management strategies are described in more detail in the next chapter. The results of the latest survey are also reported there.

The result of position taking is reported in chapter 9.

2 Management strategies

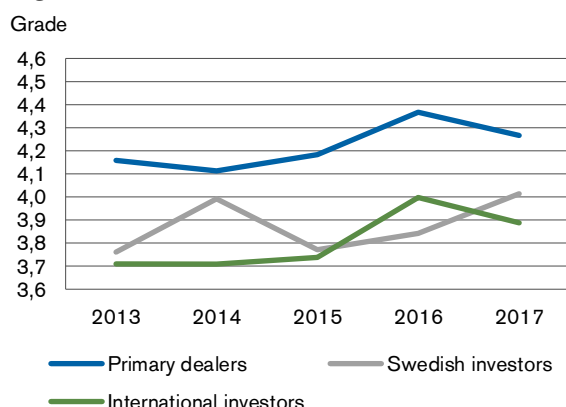
This chapter describes the management strategies intended to achieve the Debt Office's intermediate objectives. The chapter also reports what primary dealers and investors think about how the Debt Office is implementing these strategies.

The Debt Office's management strategies can be divided into two categories. The first consists of the strategies that support liquidity and infrastructure in the government securities market. The second covers those that promote transparency, predictability and clear communication.

Since 2004 Kantar Sifo Prospera (Prospera) has conducted a survey each year among the Debt Office's primary dealers and investors.¹ The respondents grade both the *importance* of the different strategies (see section 2.3) and how well the Debt Office *implements* these strategies. According to Prospera a grade of more than four should be interpreted as "excellent". Grades under 3 are interpreted as unsatisfactory.

Propsera also makes an overall assessment in which all the grades are weighted on the basis of the perceived importance of the strategies. Figure 1 shows the development of the overall assessment over time.

Figure 1 Overall assessment



The overall impression of the Debt Office is in line with the preceding year. In recent years these grades have consistently hovered around four. Swedish investors rate the Debt Office at the same

or a higher level compared with 2016, with information about both borrowing requirements and government bonds and also contacts showing the biggest change. In contrast, primary dealers and international investors give the Debt Office's information about government bonds and inflation-linked bonds a slightly lower rating than in the preceding year. Among primary dealers information about T-bills and the Debt Office's attentiveness is given a slightly lower rating.

2.1 Liquidity and infrastructure

Usually the demand for government securities is based on their low credit risk and good liquidity. The low credit risk follows from the fact that they are securities issued by central government. Sweden has strong central government finances, its own currency and its own central bank. Their attractiveness is also due to a great extent to the liquidity that the government securities market can offer.

To attract a broad range of investors the Debt Office is working actively to promote the liquidity and infrastructure of the government securities market. This is mainly done by:

- maintaining an active market and debt commitment with switches and repos
- concentrating borrowing on a limited number of benchmark loans
- maintaining several effective sales channels, partly with the aid of a system of primary dealers.

Market and debt management

To reduce the risk of the Debt Office's primary dealers in government securities not obtaining bonds or T-bills, the Debt Office offers standing repo facility² in government securities. The knowledge that this repo facility is available makes

The survey was conducted between 26 November and 20 December 2017. Seven primary dealers and 58 investors were polled. The response rate was 88 per cent.

² An agreement on the sale of a security in which, in addition to selling the security, the seller also undertakes to buy it back after a certain period of time, at a pre-agreed price.

it easier for primary dealers to quote prices, which then promotes the liquidity of the market. From experience, repos of government securities are viewed as important when primary dealers rank Debt Office activities. It is therefore satisfying that the Debt Office has been given the grade of 4.7 here.

The Debt Office also offers switches of less liquid government securities for more liquid issues. New bonds are normally introduced using switches so that the new loans quickly gain good liquidity. In addition, the Debt Office offers a standing facility for switches in inflation-linked bonds in order to improve liquidity in the market.

The grade for the standing facility for switches of inflation-linked bonds was 4.1 for 2017 compared with 4.3 for the preceding year. The Debt Office has not changed the conditions for the standing facility for switches of inflation-linked bonds during the year. One conceivable explanation of the lower grade is that the market for inflation-linked bonds has functioned less well on account of regulations, the Riksbank's purchasing programme and lower issue volumes. Section 6.2 discusses work on the market commitment for the inflation-linked bond market in more depth.

Few benchmark loans

Government bonds are the Debt Office's most important instrument and when the borrowing requirement is small, issues of these bonds are given priority ahead of other borrowing. Usually this borrowing is concentrated on a few benchmark loans. This makes the outstanding volume large enough to ensure good liquidity.

The Debt Office endeavours to maintain a relatively even maturity profile in its bond stock. By offering bonds with both short and long maturities the Debt Office is able to attract different types of investors. When the maturity profile is even, the refinancing risk is also lower since only a small part of the central government debt matures each year.

Further deterioration of liquidity

The Debt Office tries to create the conditions for good liquidity in the market, but has small possibilities of influencing liquidity directly.

This year's survey shows that both investors and primary dealers consider that liquidity in the Swedish government bond market has deteriorated,

for the third successive year. The reasons given are regulations that affect the possibilities for primary dealers to take on risk and the Riksbank's bond purchases (see the box *The Riksbank's purchases of government bonds* on page 21).

The liquidity measured as turnover in the government bond market is given the grade of 2.2 by primary dealers compared with 2.6 in the preceding year. In contrast, liquidity in terms of bid/offer spread improved during the year and is given the grade of 3.4 compared with 2.9 in 2016.

Liquidity in terms of volume 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. Nor is there any developed trading activity in derivative instruments here. However, this year's survey also shows that liquidity in terms of the interest rate difference between buy and sell prices has improved in the market for inflation-linked bonds.

Liquidity in the market for T-bills is unchanged at an already low level. The outstanding stock of T-bills has been more than halved in five years, and investors are increasingly using other instruments to invest money in the short term.

Effective sales channels

The Debt Office tries to maintain many, effective sales channels. A system of primary dealers is a guarantee for well-functioning infrastructure in the Swedish government bond market. It contributes to better liquidity and facilitates borrowing large volumes in a possible future crisis situation.

When the Debt Office sells bonds in foreign currencies, it does so through 'syndication'. This means that the Debt Office engages a group of banks, a syndicate, to execute the sale.

2.2 Transparency & predictability

To create an attractive market for government securities, these securities have to be managed with transparency and predictability. This means that all communication with the market should be as open and consistent as possible. If counterparties and investors have a good knowledge of the Debt Office's issue plans and are aware of how the Debt Office responds to external change, this creates stability and less uncertainty.

The Debt Office works to achieve the objectives of transparency, predictability and clarity by:

- maintaining good investor relations
- regularly publishing forecasts of the borrowing requirement for coming years
- handling borrowing in a consistent way with clear principles
- having clear communication both in written documents and in contacts with investors and counterparties
- providing detailed information about borrowing and the central government debt on its website: riksgsalden.se.

Investor relations

A broad investor base results in lower interest costs. Working for good investor relations is therefore one of the Debt Office's most important management strategies.

Primary dealers have the most active role in sales of government securities. They provide investors with analysis and information about the Debt Office's issues. However, the Debt Office does not rely solely on the information given via its primary dealers but ensures that investors can obtain information without intermediaries. The Debt Office therefore meets Swedish and foreign investors at both personal meetings and in larger conferences. The Debt Office also holds investor meetings when new borrowing forecasts are presented.

In 2017 there were visits to investors in Sweden, the rest of Europe, the US and Asia. The Debt Office participated as speakers at seminars and conferences both in Sweden and abroad.

In this year's survey the Debt Office got a grade of 3.8 for contacts with Swedish investors, which can be compared with 3.6 in the preceding year. This is an increase for the second successive year. One point is that investors have given higher ratings to information about the central government borrowing requirements and borrowing in government bonds.

The share of investors who have direct contacts with the Debt Office has decreased slightly. The share who do not have such contacts, but would like to, has also decreased. Around 20 per cent of the Swedish investors polled have direct contacts, compared with 40 per cent in the preceding year.

For international investors the figure is just under 30 per cent.

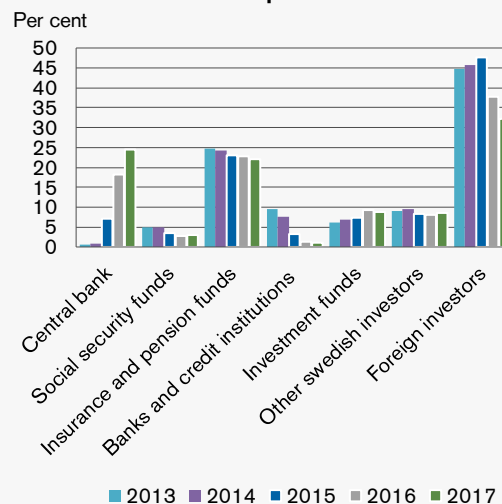
Interest in the Debt Office's large meetings for investors has increased among international investors. For Swedish investors this interest is in line with the preceding year.



Who owns Sweden's central government debt?

Historically Swedish insurance companies and pension institutions and foreign investors have been large owners of bonds issued by the Swedish State, see the figure below. Since 2015 the Riksbank has become a large owner as the bank has increased its asset purchases. At the end of the third quarter in 2017 the Riksbank owned just less than 25 per cent of outstanding government securities.³ As the Riksbank has increased its holding, foreign investors have reduced their ownership.

Owners of Swedish government securities 2013-2017 qu. 3



Sources: Statistics Sweden, Financial Accounts

Over time the banks have also reduced their holdings of bonds, which is probably due to greater balance sheet costs. The holdings of insurance companies and pension institutions have also been relatively stable in recent years and amount to more than 20 per cent of the outstanding stock.

³ In terms of market values.

Predictability and clear communication

The report *Central government borrowing – forecast and analysis* is important as a way of enabling the Debt Office to communicate its plans to all market participants at the same time. This report is published three times a year and describes in detail how the Debt Office intends to borrow in the coming two years.

The issue plan is based on a forecast of the gross central government borrowing requirement (budget deficit and refinancing of maturing loans). The Debt Office then adapts borrowing to the conditions in the government guidelines. The issue plan and the forecast of the net borrowing requirement normally remain in place until the next report is published. Good forecasts are necessary in order to be able to act in a predictable way (see chapter 4 for a description of the accuracy of the forecasts).

The report *Sweden's Central Government Debt* is published on a monthly basis and contains detailed information about the composition of the central government debt.

The Debt Office also communicates its plans via annual guidelines proposals. It also publishes the basis for evaluation of the central government that is sent to the Government each year.

For 2017 the Debt Office was given a grade of 4.4 for communication concerning borrowing requirements and financing and a grade of 4.4 for clear and consistent action. These grades are slightly better than those for 2016.

The website riksgalden.se

The Debt Office's website remains the most important information channel for information about central government borrowing requirements and financing, auction terms, outstanding securities and auction outcomes. All primary dealers use the website. For domestic and international investors the corresponding figures are 86 and 91 per cent. All of those who visit the website consider that they find the information they are looking for even though they would like it to be easier to navigate.

High overall grade

Prospera's summary of this year's results reads as follows: "The market's demands on the Debt Office remain high, with all but two assessment criteria being given an importance of more than 4 on a scale from 1 to 5. On the whole, the assessment of the Debt Office is at the same level as in 2016."

The survey shows that confidence in the Debt Office remains high and that, as before, the Debt office is given a high ranking for its transparency compared with other Debt Offices.

When respondents were asked to rank the importance of the Debt Office's strategies the standing repo facility came top. Table 1 shows the five most important demands made by market players.

Table 1 The market's most important requirements

Requirement	Importance
Standing repo facility for government securities	4.7
Standing repo facility for switches of inflation-linked bonds	4.6
Communication about borrowing requirements and financing	4.5
Clear and consistent actions	4.4
Information about volumes and other conditions concerning government securities	4.4

Table 2 ranks the grades given by participants. The same factors figure in both of the above tables. A reasonable conclusion from this is that the Debt Office is focusing on the right things.

Table 2 The Debt Office's main strengths

Strengths	Grade
Standing repo facility for government securities	4.7
Standing repo facility for switches of inflation-linked bonds	4.6
Communication about borrowing requirements and financing	4.4
Clear and consistent actions	4.4
Information about volumes and other conditions concerning government securities	4.4

3 Cost and risk

This chapter gives an account of various measures of cost and risk in the central government debt. It also describes how the composition and maturity of the debt have been steered on the basis of the guidelines that applied in 2017.

The overall objective of the management of the central government debt is to minimise the long-term cost of the central government debt while taking account of risk.

However, evaluating whether the overall objective has been met is a complicated matter. Since the Debt Office is the dominant state borrower in Swedish kronor, there are no natural comparisons against which to evaluate the loan strategy. Comparisons with hypothetical alternatives are also difficult, partly because the size of the central government debt means that interest rates are affected by the borrowing strategy actually implemented.

The evaluation of the cost therefore has to make use of several measures. The risks in the administration of the debt are described in both quantitative and qualitative terms.

3.1 Costs

The cost of the central government debt can be derived from the cash flows (payments) that the debt generates. In the case of the nominal krona debt, these cash flows are solely due to the interest rate at which the loans were raised.

In the case of the inflation-linked krona debt, these cash flows also depend on inflation, and the flows for the foreign currency debt are affected by exchange rates.

The cost of the central government debt can be described in several different ways. In this report the Debt Office has chosen to report the cost using three different measures:

- Interest payments
- Period cost
- Average issue yield

Interest payments is a cash flow measure that shows how much is paid (in coupon interest etc.). The measure is based on a nominal valuation principle for the central government debt. This means that when the Debt Office issues an instrument at a premium (in relation to its nominal value) the difference between the actual and the nominal amount is counted as income immediately rather than being spread over the term of the loan. In the same way, the expenditure is charged when an instrument is issued at a discount. Outcomes of buybacks are not accrued.

In the *period cost* measure, which is based on the valuation principle of accrued cost, the cost is spread evenly over the term of the instrument.⁴ For the nominal krona debt the cost is determined by the issue yield. In the case of the inflation-linked and foreign currency debt, whose cash flows are not known in advance, assumptions are made about the future development of inflation and exchange rates.

Average issue yield is a weighted average of the yields at which the outstanding loans were raised. The weighting is based on the nominal amounts of the loans. This measure does not take account of either inflation compensation or changes in exchange rates and only gives a snapshot of the average borrowing cost.

Interest payments

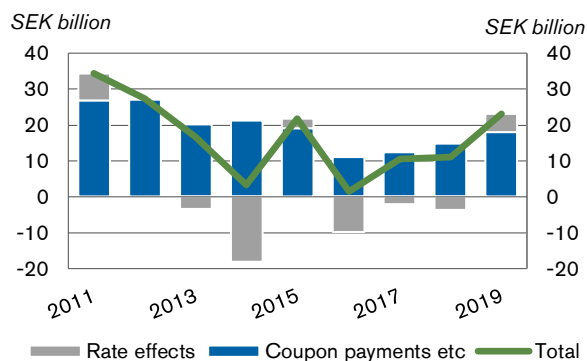
Central government interest payments amounted to SEK 10.5 billion in 2017. This is in line with the average of the past five years, but SEK 9.0 billion higher than in 2016.⁵ Interest payments vary a great deal over time, as shown in figure 2. Factors affecting the payments include the bonds the issued by the Debt Office, movements in market interest rates and exchange rate effects on the part of the debt exposed to foreign currencies.

⁴ Cash flows attributable to FX Forwards are not included in the measure.

⁵ The average for the past five years is SEK 10.7 billion.

The increase in interest payments between 2016 and 2017 is mainly explained by lower premiums in connection with the issue of government bonds. This is, in turn, because in 2017 the Debt Office issued government bonds with a coupon closer to the market rates to a greater extent than in 2016.⁶

Figure 2 Interest payments⁷



Period cost

The period cost is based on the valuation principle of accrued cost and contains all the components that affect the cost of the central government debt: interest, inflation compensation and exchange rate fluctuations. This measure is based on the assumption that unrealised market values are not recognised.

The cost for a particular period is made up of the change in the accrued cost plus the cash flows paid during the period. For the inflation-linked debt, the foreign currency debt and swaps the future cash flows are not known. In order to spread these cash flows over the term of the bond, assumptions need to be made about future developments.

In the calculations set out below the Debt Office has assumed that future inflation will follow what is called break-even inflation, i.e. the inflation that can be derived from the market pricing of inflation-linked bonds in relation to government bonds. Future exchange rates and short-term interest rates are assumed to stay at the same level as at the end of 2017.

Over time these assumptions are replaced by the actual outcomes, which means that earlier costs are revised. The earlier cost is also affected when the Debt Office buys back government securities

⁶ When the coupon on a bond exceeds the market interest rate, the price of the bond is higher than the amount paid back when the bond matures. The opposite applies when the coupon is lower than the market interest rate. The difference between the price and the amount paid back on the due date is booked as interest income (premium) or an interest expense (discount) in connection with the sale.

since gains or losses are then realised and replace the assumption that all loans are held to maturity.

The cost of every instrument is spread evenly over its term. For a foreign currency loan, for example, this means that day-to-day fluctuations in exchange rates do not affect the cost if they are not realised. It is only the exchange rates that affect the actual cash flows that have an effect on the cost.

Figure 3 Period cost for all types of debt

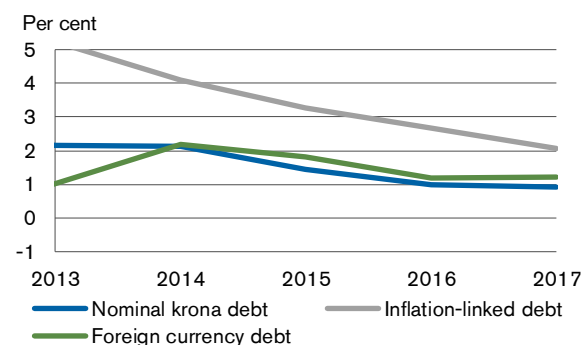
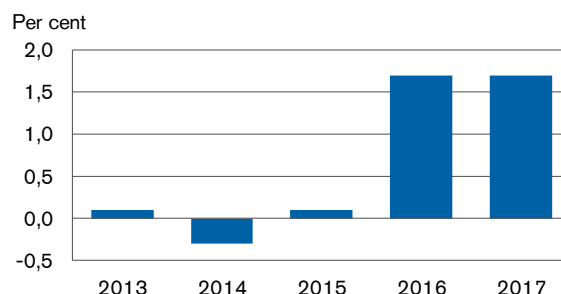


Figure 3 shows the period cost for all types of debt. For the nominal krona debt the cost was 0.9 per cent in 2017, which is the same level as in the preceding year. This is a break in the trend. For several years the cost has shown a falling trend against the background of the general decline in interest rates. This declining trend in interest rates now appears to have halted.

In 2017 the cost of the inflation-linked debt was 2.1 per cent. The cost of the inflation-linked debt has also shown a falling trend for a long period as real interest rates have fallen. Moreover, inflation has been low, as illustrated in figure 4.

Figure 4 Inflation rate, annual CPI change



Rate effects include issues sold at a premium and discount, capital gains and losses in connection with switches and buybacks and currency exchange gains and losses realised.

The cost of the inflation-linked krona debt has been higher than the cost of the nominal krona debt for a long time. This is mainly because the maturity of the inflation-linked debt is longer, so the inflation-linked debt stock contains a larger share of loans raised long ago at much higher interest rates.

For the foreign currency debt the cost was 1.2 per cent, which is in line with last year's cost.

The krona exchange rate is of great importance for the cost of the foreign currency debt. In general, a weaker krona leads to higher costs for the foreign currency debt, while a stronger krona leads to lower costs. In 2017 the krona weakened against the euro, but strengthened against other currencies. Overall the krona strengthened by just over 2 per cent in relation to the currencies in the foreign currency debt, see figure 5.

Figure 5 Annual change in the krona exchange rate ⁸

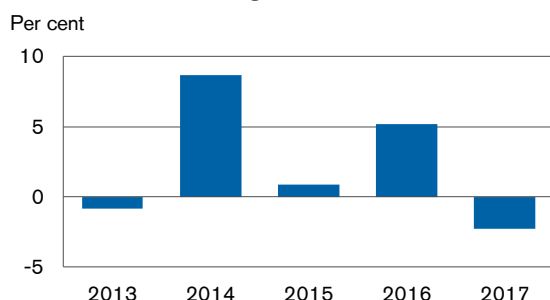
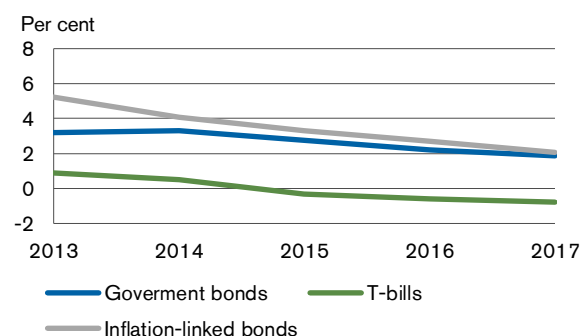


Figure 6 shows the period cost for various government securities. In 2017 the cost of T-bills was negative, and amounted to -0.8 per cent. For government bonds the cost was 1.9 per cent, and for inflation-linked bonds it was 2.1 per cent.

Figure 6 Period cost of government securities

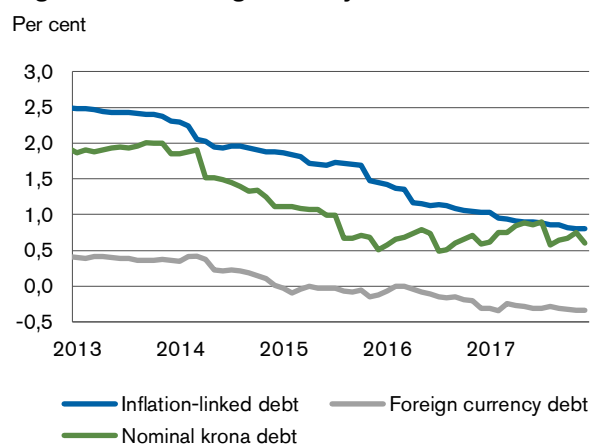


Measured according to the exposure in the foreign currency debt. A plus sign means that the krona weakened and a minus sign that it strengthened.

Average issue yield

The average issue yield for the outstanding nominal krona debt was 0.60 per cent at the end of 2017, to be compared with 0.59 per cent one year earlier (see figure 7). So its level was virtually unchanged even though issue yields were lower in both the money and the capital market. This is chiefly because the decline in interest rates was countered by the fact that swaps previously entered into on terms favourable to the Debt Office matured during the year. The extension of maturity also contributed to a slightly higher average yield.

Figure 7 Average issue yield



The average issue yield in the foreign currency debt also remained at roughly the same level during the year. At the end of 2017 the issue yield was calculated as -0.34 per cent, which was marginally lower than in 2016.

In contrast, the average issue yield for the outstanding inflation-linked debt fell by almost a quarter of a percentage point in 2017. The reduction was largely due to switches in connection with the introduction of a new bond. At the end of the year the interest rate was 0.80 per cent.

It should be noted that the issue yields for different types of debt are not fully comparable. In the cases of the inflation-linked and foreign currency debt, the whole cost is not shown since inflation compensation and exchange rate fluctuations are not included in the calculations. In addition, the debt types have different maturities.

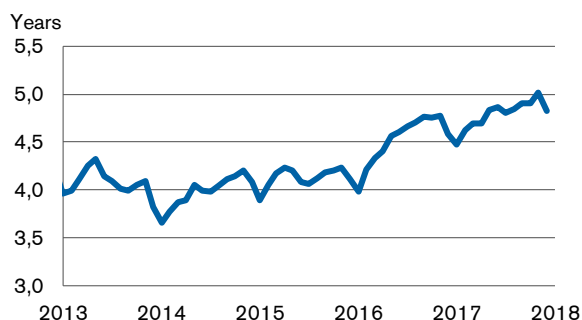
3.2 Risks

Maturity

According to the government guidelines, the duration of the nominal krona debt consisting of instruments with a maturity of up to twelve years was to be between 2.9 and 3.9 years in 2017.⁹ The duration inflation-linked debt was to be between six and nine years, whereas the foreign currency debt duration was to be one year or lower. For nominal instruments with a maturity in excess of twelve years the Government decided that the long-term benchmark for the outstanding volume was to stay at SEK 70 billion.

Figure 8 shows the duration of the central government debt as a whole. Its duration continued to increase in 2017. This was partly because its maturity was increased in the guidelines decision. The unexpectedly large surpluses in central government finances in 2017 also contributed.

Figure 8 Duration of the total central government debt

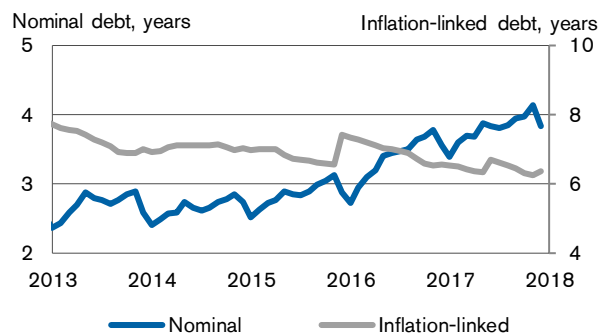


The duration of the nominal krona debt varies because central government payments are uneven over time. On days with large deficits the Debt Office borrows more at short maturities and vice versa. Borrowing is planned so as to hold the average value of duration between 2.9 and 3.9 years during the forecast period. The purpose of the interval is to avoid having to make transactions so as to steer maturity if exogenous events have resulted in the duration being longer or shorter than intended. The Government has therefore decided that temporary deviations from the maturity intervals are permitted.

Figure 9 shows the duration of the nominal and inflation-linked krona debt. In 2017 the average duration of the nominal krona debt was 3.8 years,

while it was 6.4 years for the inflation-linked krona debt. The average duration of the foreign currency debt was 0.2 years.

Figure 9 Duration of the nominal krona and inflation-linked debt

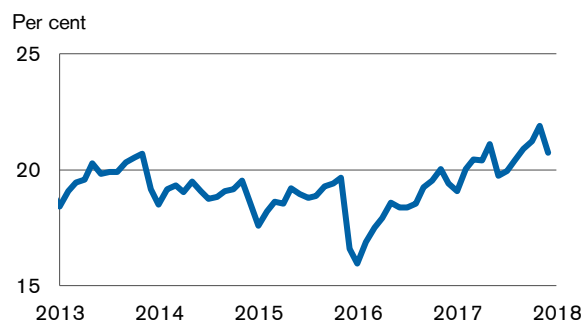


The conditions for steering maturity are different for the different types of debt. In the international capital market the Debt Office is a small participant, and it is easy to use derivatives to steer the duration of the foreign currency debt. The duration of the nominal krona debt can also be steered to some extent by varying the volume of interest rate swaps. But when it comes to the inflation-linked debt, there is no possibility of using derivatives to adjust maturity. The duration of the inflation-linked debt is therefore determined solely by the maturity of the outstanding bonds and changes in market interest rates.

Inflation-linked krona debt

According to the guidelines the inflation-linked krona debt was to be 20 per cent of the central government debt.¹⁰ The share was 20.5 per cent on average in 2017. The benchmark of 20 per cent is a long-term figure and the share is hard to steer in the short term. For example, it falls considerably when a bond loan matures.

Figure 10 Inflation-linked share



⁹ Duration is a way of measuring the average fixed interest period of a bond. Duration is also a common measure of risk for a bond.

¹⁰ This share is calculated on the basis of the nominal amount of the inflation-linked debt including accrued inflation compensation.

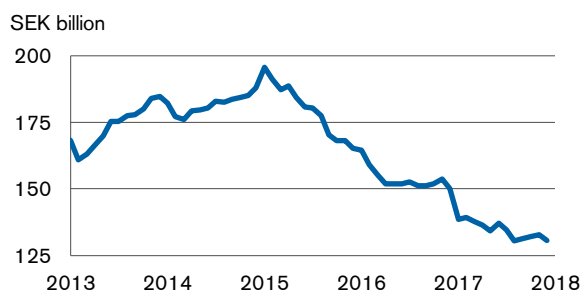
The inflation-linked share increased gradually in 2017 and was 20.7 per cent at the end of the year. The increase is chiefly explained by the decrease in the central government debt.

Foreign currency debt

The foreign currency debt consists of several currencies. In 2017 the Debt Office decreased the foreign currency debt by exchanging CAD 720 million, EUR 520 million, GBP 400 million and USD 600 billion, which corresponds to SEK 20 billion when calculated using the method laid down by the Debt Office in its Financial and Risk Policy.¹¹ The reason why the reduction was made in these specific currencies was that this was judged to be the most cost-effective way of reducing the risk in the foreign currency debt. The exchanges were made at an even pace over the year to avoid a few potentially unfavourable points in time.

The size of the reduction of the total foreign currency debt during the year can be measured in several ways. Measured using exchange rates on 30 November 2016, the foreign currency debt decreased by SEK 14.9 billion, i.e. SEK 5.1 billion less than planned CAD, EUR, GBP and USD reduction. This difference is explained by the fact that currency exposure increased slightly in EUR as part of the currency exchanges that the Debt Office performs continuously on behalf of central government. Measured at current exchange rates the foreign currency debt decreased by about SEK 16 billion in 2017, see figure 11.

Figure 11 Foreign currency debt at current exchange rates, monthly average



Refinancing risk

The refinancing risk means the risk that loans reaching maturity can only be replaced with new loans at appreciably higher costs or, in the extreme

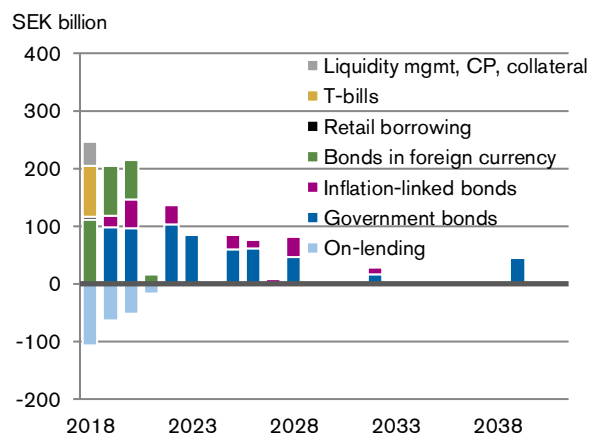
case, cannot be refinanced at all. The refinancing risk is higher the larger the loans that are maturing in the immediate future. To some extent this is a simplification since a bond that is maturing seldom needs to be financed right away by issuing another bond. With long-term issue planning and small issue volumes at regular auctions refinancing is spread over a long period of time and old bond loans are often replaced before maturing.

Bond maturities work just like other central government payments. The net amount of daily central government income and expenditure (the net borrowing requirement) varies and may be between SEK 50 and 100 billion on certain days. The refinancing risk is therefore only part of what is usually called liquidity risk (or financing risk), which is to do with the possibility of managing payments in a broader sense.

Nevertheless the refinancing risk should be controlled. The ways in which the Debt Office tries to limit it is 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 12 shows the maturity profile of the central government debt, i.e. the size of the sums in the outstanding debt that mature in every single year. The figure also shows claims that mature in the form of on-lending to the Riksbank. These claims match the bond loans in foreign currency to a great extent.

Figure 12 Maturity profile, December 2017



¹¹ According to this method the decrease in foreign currency exposure is calculated using the exchange rates on 30 November 2016.



Comparison of maturities

The overall objective for the management of the central government debt is to minimise the cost of the debt without the risk becoming too high. The cost of and risk in the debt depend on its composition and each year the Debt Office proposes a suitable distribution between different types of debt and what maturity the debt should have. Starting from this proposal the Government then makes a decision on the final design of the borrowing strategy.

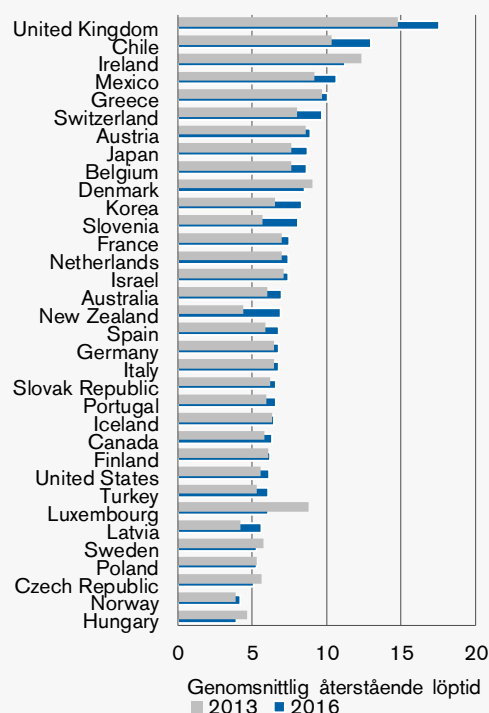
Historically it has been cheaper to borrow at short than at long maturities since short interest rates have usually been lower on account of positive term premiums. For this reason the Debt Office has actively for many years to reduce the duration of the debt with the aid of derivatives.

However, many studies indicate that term premiums have become ever lower in recent years, both in Sweden and internationally. So the cost advantage of short-term borrowing has decreased. Therefore the Government has decided, on the advice of the Debt Office, to extend the maturity of the nominal krona debt in three steps in 2016–2018. In all, the extension amounts to 0.9 years expressed as duration. The change is expected to contribute to lower cost variation without a rise in the long-term cost of the debt.

Sweden is not alone in having extended the duration of its central government debt in recent years. Several other countries have made a corresponding change, including Denmark, the Netherlands and Germany.¹² The OECD has produced a summary of the outstanding maturity of central government debt in various countries and how it has changed over time. The figure shown below presents figures for 2013 and 2016 showing that maturity measured in this way has increased in a large number of countries. It can also be noted that, despite extensions in recent years, Sweden has a relatively short maturity compared with most other countries studied.

It should be noted that the measures outstanding maturity and duration used by Sweden in maturity steering do not show the same thing. Duration is a measure of the average interest rate refixing period while outstanding maturity only captures the term to maturity. It should also be noted that the numbers in the figure are not wholly comparable between countries. In certain countries assets are included in reporting (Norway, for example), other countries include short-term borrowing (Denmark and the UK, for example) or exclude it (Ireland, for example). There are also differences regarding the effect of derivatives. For example. France and Norway include swaps in their reporting while Sweden has not included derivative instruments in its data to the OECD. For this reason it looks as though the maturity of Sweden's central government debt decreased between 2013 and 2016.

Average outstanding maturity in various countries, 2013 och 2016



Source: OECD Sovereign Borrowing Outlook 2017.

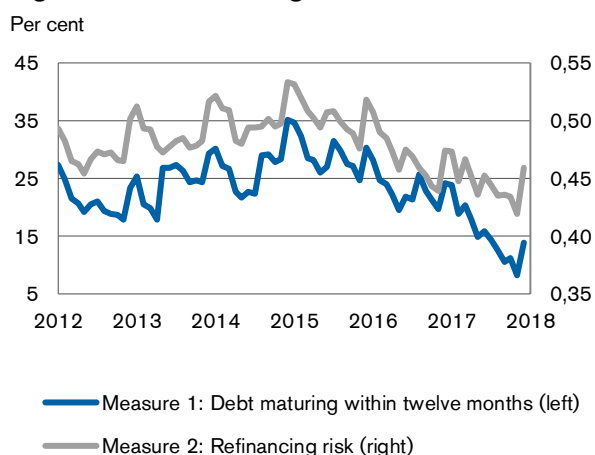
¹² Denmark, for example, uses interest rate swaps to shorten the maturity of the debt. In 2016 the average interest rate refixing period was just under 12 years. This can be compared with an interest rate refixing period of just over 11 years in 2013. The Netherlands has increased its interest rate refixing period from 5.5 years in 2016 to 6.0 years at the end of 2017. At the end of 2019 its interest rate refixing period is expected to be 6.4 years. Germany has increased its interest rate refixing period from just over 6 years in 2010 to 6.8 years at the end of 2016.

Normally a large part of the debt matures in the coming year. This is because of the large scale of liquidity management and the handling of seasonal fluctuations in the net borrowing requirement. At the end of the year the short-term maturities are at their largest level since a large part of central government payments take place in the month of December. These payments are financed initially by money market borrowing and are then gradually replaced by borrowing at longer maturities. Chapter 7 gives a more detailed description of money market borrowing.

Otherwise the maturity profile is relatively even up until ten years, and this influences future refinancing risks as time passes. An uneven maturity profile could give rise to greater risks in the future when large maturities must be refinanced. However, what is most important for risk at a given point in time is what is maturing in the near future.

Figure 13 shows two measures of refinancing risk. The first shows what share of the debt will mature within twelve months. The second is defined by giving a loan maturing immediately the value of one while a loan that never matures is given the value of zero. All loans are then weighted together and this results in a figure between zero and one for the total central government debt.

Figure 13 Refinancing risk



The measures show the same pattern even though measure 2 does not have the sharp break at 12 months. The figure also shows a clear seasonal variation on account of the extensive money market borrowing around the turn of each year.

The decrease in short-term financing in 2017 is largely because central government finances showed a surplus.

Counterparty risk

Counterparty risk is the risk that a counterparty in a transaction will not fulfil its obligations. Such risks arise both when investing surpluses in 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 in both cases the Debt Office sets minimum requirements concerning the credit rating of its counterparty.

Through liquidity management the Debt Office borrows or invests funds on a daily basis. To handle the counterparty risk for these investments there are limits based on the counterparty's credit rating that restrict the maximum exposure and maturity.

Derivative transactions are used to steer the maturity and currency mix of the central government debt and to take positions. Transactions can either be made bilaterally or through central counterparty clearing.

In order to handle derivative instruments that are not cleared centrally, an ISDA agreement is required, with a downgrade clause and a Credit Support Annex (CSA). Under the CSA agreement a counterparty must provide the Debt Office with collateral if the value of the instruments is positive for the Debt Office. This collateral provides protection in the event that the counterparty is unable to meet its commitments. The Debt Office's ISDA/CSAs are bilateral in the sense that the Debt Office not only accepts but also provides collateral if the counterparty has a positive exposure in relation to the Debt Office. A review of the ISDA/CSA agreements was completed during the year. One outcome of the review is that collateral will begin to be exchanged earlier, in line with current market practice. The change will be introduced as the Debt Office and its counterparties sign new, revised agreements. Regulations of this type are defined and updated in the context of the Debt Office's Financial and Risk Policy.

In 2017 there were no material events that affected the Debt Office's credit risk. However, the investment needs in the Debt Office's liquidity management have been great. These investments were made with counterparties with good credit ratings and therefore resulted in very limited risk exposure. There were also minor changes in the credit ratings of the Debt Office's counterparties, principally in the form of improved ratings.

4 Borrowing requirement forecasts

This chapter evaluates the Debt Office's forecasts of the net borrowing requirement on an annual, monthly and daily basis. A comparison is also made with forecasts of the annual borrowing requirement made by other government agencies.

The net central government borrowing requirement is normally the single most important factor for the development of the central government debt. The Debt Office therefore makes detailed forecasts of the net borrowing requirement, in both the short and the long term. The purpose of these forecasts is to create conditions for stable issue plans and effective liquidity management. In somewhat simplified terms, the annual forecasts steer long-term bond borrowing and the monthly forecasts steer short-term borrowing in T-bills and commercial paper, while the daily forecasts affect day-to-day liquidity management.

Annual forecasts for 2017

The net borrowing requirement was overestimated in all forecasts for 2017. The forecasts were gradually adjusted downwards but not by enough. Compared with the forecast published in *Central Government Borrowing 2016:3*, which was published in October 2016, the net borrowing requirement turned out to be SEK 94 billion lower.

A large part of the forecast differences can be explained by stronger macroeconomic growth than expected. GDP growth was underestimated in all forecasts, at least up until the final forecast published in October 2017. In addition, Statistics Sweden has revised the level of previous years upwards, which means that GDP in 2017 was much higher than estimated in the initial forecasts.

Table 3 Annual forecasts for 2017

SEK billion	2016:3	2017:1	2017:2	2017:3	Outcome
Primary borrowing requirement	21	7	5	-40	-72
of which on-lending	11	13	12	9	4
of which sales income	0	0	0	0	0
Interest on the central government debt	12	13	12	12	10
Net borrowing requirement	33	20	17	-28	-62

The strong growth contributed to tax income being higher and expenditure lower than forecast. Among current payments of tax it was mainly tax on consumption and corporate profits that was underestimated. In addition, supplementary payments of tax were larger than estimated. It is not possible to say with certainty what tax bases these payments refer to until the final tax assessment becomes available in December 2018. On the expenditure side the main contributions came from lower transfers and a much lower contribution to the EU budget than expected.

Table 4 Difference between forecast in Central Government Borrowing 2016:3 and outcome

Total difference in net borrowing requirement	-94
Tax income	-54
of which excess deposits/early payments	-20
of which macroeconomic factors	-34
Transfers	-12
Contribution to the EU budget	-7
Other items	-6
Net lending by the Debt Office	-13
Interest on the central government debt	-2
Total	-94

A further explanation is that the Debt Office underestimated the effects of excess deposits in tax accounts. The reduction of the interest rate on tax accounts from 1 January 2017 has not resulted in decreases in excess deposits by households to the extent assumed in the forecasts. Moreover, the continued inflow from companies was higher than estimated. A risk-free zero interest rate is still attractive to many legal entities.

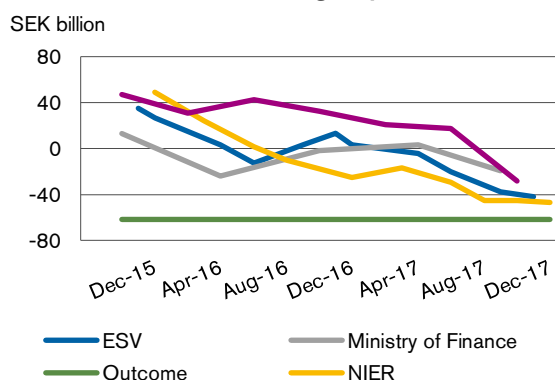
In addition to pure investments in tax accounts this may also involve companies and private individuals choosing to make early payments of tax on account of the situation regarding interest rates. The overall effect of investments and early payments compared with the forecast from October 2016 is judged to be around SEK 20 billion. This was not clear until the end of 2017.

The Debt Office's net lending to government agencies etc. was overestimated in all forecasts. The principal reason was that Ireland chose to repay prematurely the loans from the Swedish State. This only became known in the autumn and was, as a result, not included in the forecast until October 2017. In addition, net lending decreased on account of higher than estimated deposits from the Swedish Pensions Agency.

Comparison with other forecasts

In addition to the Debt Office, the National Institute of Economic Research (NIER), the National Financial Management Authority (ESV) and the Ministry of Finance also make forecasts of the central government net borrowing requirement. These agencies and the Ministry of Finance have different principles for dealing with sales income in forecasting contexts. To simplify comparisons this income has been excluded from figure 14.

Figure 14 Different analysts' forecasts of the net borrowing requirement



All the forecasters had similar profiles in their forecasts. The net borrowing requirement was overestimated and their forecasts were gradually adjusted downwards. From autumn 2016 the NIER made the most accurate forecasts.

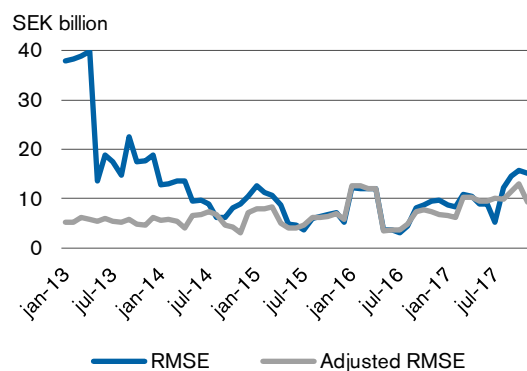
Monthly forecasts

The Debt Office is the only government agency to publish monthly forecasts of the net borrowing requirement. Comparisons with other forecasters are therefore not possible. The Debt Office follows up the precision of its monthly forecasts using the measure of Root Mean Square Error (RMSE).

Figure 15 shows the development of RMSE since 2013. It can be seen that precision decreased slightly in 2017. This is mainly due to under-estimates of the net borrowing requirement in the second half of the year.

Periodically the net borrowing requirement has been affected strongly 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 15 Deviations in monthly forecasts according to RMSE, 2013-2017

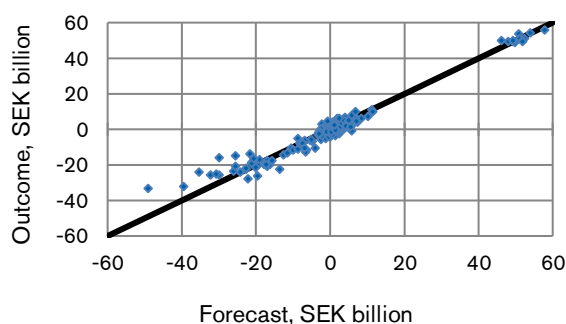


Daily forecasts

The Debt Office also makes daily forecasts for at least the coming six months so as to plan its liquidity management. Unlike the annual and monthly forecasts, the daily forecasts are updated continually as new information becomes available.

The average deviation per day was SEK 170 million in 2017, which is an improvement compared with SEK 288 million in 2016. Figure 16 shows daily outcomes and forecasts for the net borrowing requirement when the Debt Office's where net lending to other agencies has been excluded. The distance from the line represents the deviation for each day.

Figure 16 Forecast/outcome on a daily basis



The largest deviations at the daily level concerned tax income. Despite the reduction of the interest rate on tax accounts the trend of paying a larger share of taxes early in the month and paying a considerably smaller share on the due date became stronger.

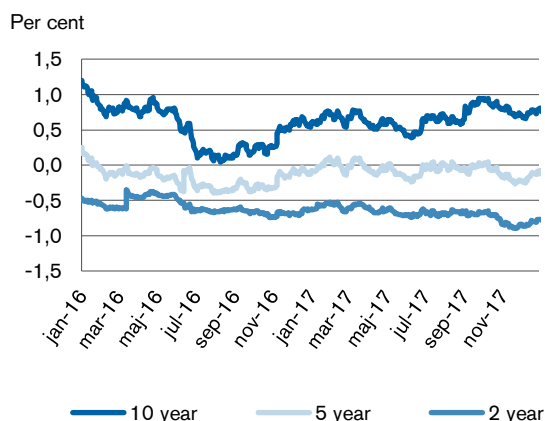
5 Market developments in brief

This chapter gives a summary overview of market developments and the Debt Office's borrowing in 2017. The unexpectedly strong development of the economy led to the surpluses in central government finances being higher than expected and the Debt Office therefore gradually reduced its borrowing. However, this reduction was made slightly too late and, as it subsequently turned out, on too small a scale. This led to growing surpluses in the Debt Office's liquidity management. Purchases of government bonds by the Riksbank continued to worsen liquidity in the government securities market. This poorer liquidity contributed to a sharp increase in the volumes of the Debt Office's standing repo facility for primary dealers.

5.1 Strong economic growth and low interest rates

Strong domestic demand contributed to the continued growth of the Swedish economy at a good pace in 2017 and to resource utilisation becoming more strained. However, monetary policy remained expansive and the Riksbank kept the repo rate at -0.5 per cent throughout the year and continued its purchases of government securities. At the end of the year the Riksbank's nominal holdings of Swedish government securities amounted to just over SEK 300 billion. This corresponds to just under 40 per cent of the outstanding volume, see the box about The Riksbank's purchases on page 21.

Figure 17 Yield on 2-, 5- and 10-year government bonds



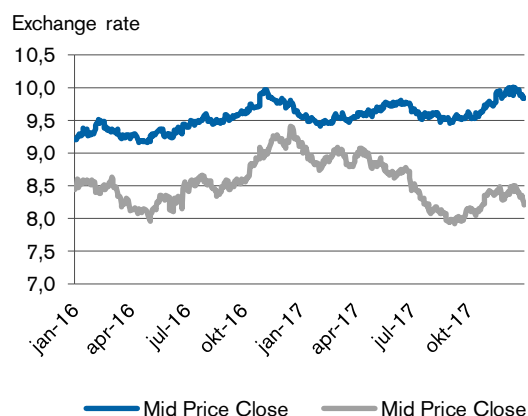
Source: Thomson Reuters

The market for Swedish government bonds was relatively stable in 2017 and market interest rates remained at low levels. The yield on a Swedish ten-year government bond traded in an interval of 30 basis points during the year and the interest rate at the end of the year was largely the same as at the beginning of the year.

The strengthening of the US dollar that was noted after the US presidential election was dampened at the start of 2017. Dampened expectations of economic growth in the US and geopolitical unrest contributed to this development.

In the spring and summer growth prospects became brighter in Europe and political uncertainty decreased after the elections in the Netherlands and France. This resulted in a stronger euro. At the same time the dollar weakened further against the background of weak inflation statistics and political deadlock in the US.

Figure 18 Krona exchange rate against the euro and US dollar



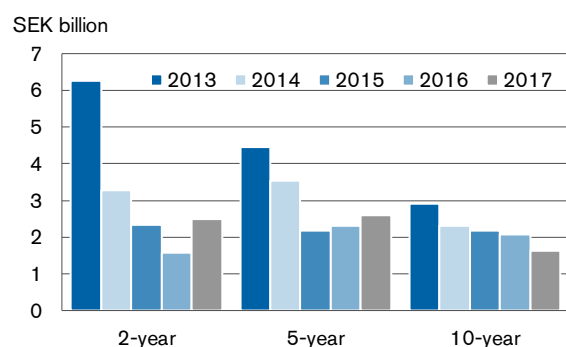
Source: Thomson Reuters

The Riksbank's continuation of its expansive monetary policy in combination with concern about the Swedish housing market led to a weakening of the krona against the euro in particular in the third quarter, despite stronger Swedish inflation figures. There was also something of a weakening in relation to the US dollar. Despite this weakening towards the end of the year, the krona has strengthened in relation to the dollar on a yearly basis.

5.2 Poorer liquidity in the government securities market

Along with the low borrowing requirements in recent years and new regulations, the Riksbank's purchases of government securities have resulted in a decrease in daily turnover of government bonds, see figure 19. There are many indications that the situation in the market for government bonds has become increasingly strained over time.

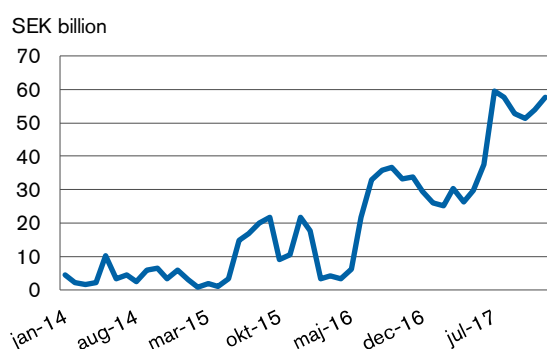
Figure 19 Average daily turnover of 2-, 5- and 10-year government bonds



Source: Nasdaq

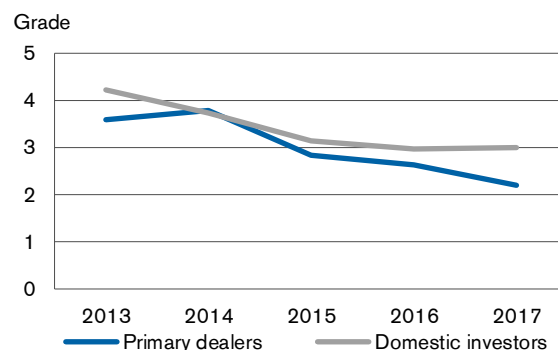
One sign of poorer liquidity is that the volumes of the Debt Office's repos with primary dealers have increased substantially, as is shown in figure 20. In the second half of the year the Debt Office repoed out about SEK 55 billion in government bonds on a daily basis.

Figure 20 Repos in government bonds with the Debt Office



The survey that the Debt Office carries out each year shows that the market for government bonds is felt to be functioning less well than in the past. Both primary dealers and Swedish investors judge that the liquidity of the market has deteriorated gradually, see figure 21.

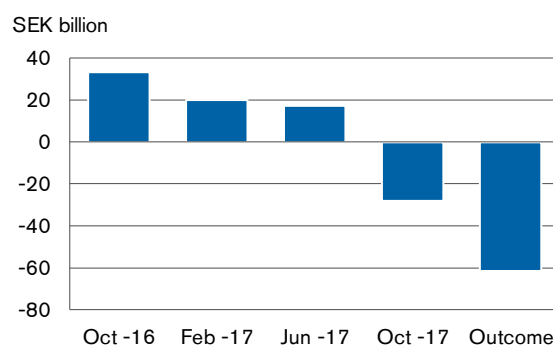
Figure 21 Perceived liquidity in the market for government bonds



5.3 Surprisingly strong central government finances

Central government finances developed more strongly than expected in 2017. In its forecast in October 2016 the Debt Office expected the net borrowing requirement to be SEK 33 billion. One year later, in October 2017, the forecast was revised to a net borrowing requirement of SEK -28 billion. The final outcome was SEK -62 billion, i.e. SEK 94 billion lower than originally estimated. The gross borrowing requirement (i.e. the net borrowing requirement plus maturities, swaps and purchases) was SEK 246 billion, see table 5.

Figure 22 Net borrowing requirement – forecast and outcome



To cope with the surprisingly low net borrowing requirements the Debt Office gradually reduced borrowing during the year. The planned auction volume of government bonds was reduced from SEK 66 billion in October 2016 to SEK 51 billion in October 2017 (which corresponds to an annual rate of SEK 40 billion). In addition, the auction volume of T-bills was reduced from SEK 110 to 88 billion. Finally, borrowing in inflation-linked bonds was reduced from SEK 14 to 12 billion.

Table 5 Gross borrowing requirement

SEK billion	2016	2017
Net borrowing requirement	-85	-62
Business day adjustment etc. ¹	-7	4
Retail market & collateral, net ²	6	14
Maturities, money market³	284	144
T-bills	141	84
Liquidity management instruments	143	60
Maturities, switches and buybacks, capital market	104	145
Government bonds	53	69
Inflation-linked bonds	1	15
Foreign currency bonds	49	62
Total borrowing requirement, gross⁴	302	246

¹ Adjustment for difference in the reporting of borrowing and net borrowing requirement. The differences refer to settlement date and trade date and calculation of interest payments for money market instruments.

² Net change in retail market borrowing and collateral.

³ Initial stock maturing within 12 months.

⁴ Refers to borrowing requirement in the institutional market.

Borrowing in government bonds and inflation-linked bonds was the lowest in five years. Compared with the preceding year bond borrowing decreased by SEK 34 billion, see table 6.

Table 6 Total gross borrowing

SEK billion	2016	2017
Money market, borrowing¹	144	122
T-bills	84	88
Liquidity management instruments	60	35
Capital market, borrowing	157	124
Government bonds	81	51
Inflation-linked bonds	16	12
Foreign currency bonds	61	61
On behalf of central government	0	0
On-lending to the Riksbank	61	61
Total gross borrowing	302	246

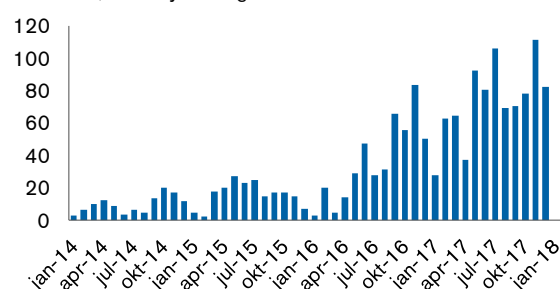
5.4 Growing surpluses in liquidity management

Even though the Debt Office reduced borrowing in all types of government securities the cash balance in liquidity management was positive for the greater part of the year. This was due both to the unexpectedly strong development of central government finances and to liquidity received via the Debt Office's standing repo facility (on average SEK 42 billion per day in 2017). These repos are extra financing over and above the financing that the Debt Office normally plans for. However, the high volume of repos in 2017 meant that the Debt Office was obliged to cut back other short-term borrowing in order to avoid excessive and protracted surpluses in liquidity management. This cut-back is even more pronounced by the end of the year when the issue volume was reduced to SEK 5 billion per T-bill, resulting in a total stock of SEK 20 billion going forward.

On average the Debt Office needed to invest SEK 74 billion per day in liquidity management (see figure 23) in 2017. This is SEK 38 billion more than the average in the preceding year. To handle its cash surpluses the Debt Office has made use of the possibility of buying Riksbank certificates via its primary dealers, see the section on liquidity management for more information. Riksbank certificates have a maturity of one week and the investment is made at the Riksbank's repo rate.

Figure 23 Assets in liquidity management

SEK billion, monthly average





The Riksbank's purchases of government bonds

Up until December 2017 the Riksbank had purchased government bonds for SEK 304 billion, of which SEK 267 was nominal bonds. These purchases have been concentrated on bonds with maturities of up to 10 years. The Riksbank owned just over 48 per cent of the outstanding stock of these bonds at the end of 2017, see the figure.

In 2017 the Riksbank increased its holding of government bonds by SEK 29 billion. At the same time the total stock of government bonds increased by only SEK 19 billion. The bonds bought by the Riksbank in 2017 had a shorter maturity than the average maturity of the central government debt. As a result the Riksbank's holding at the end of the year exceeded 50 per cent of the outstanding stock of most short government bonds.

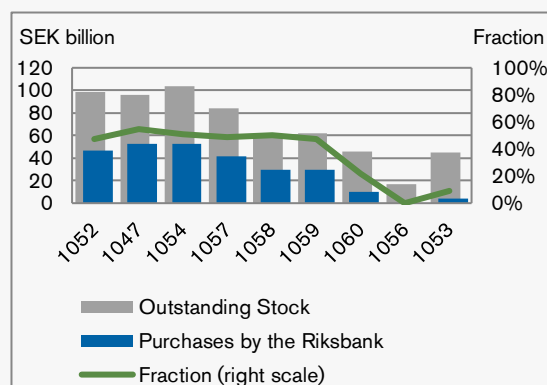
As a result of the Riksbank's purchases the shortage of bonds with short maturities grew during the year. The repo volumes in the standing repo facility increased more in shorter than in longer bonds. For example the yield on SGB 1052 with an outstanding maturity of around two years fell more than that on the ten-year bond SGB 1059 when compared both with the swap interest rate and with German government bonds with corresponding maturities.

The Riksbank has decided to reinvest around SEK 65 billion of funds from coupon payments and maturities as of January 2018. Most of the funds relate to maturities occurring in the first half of 2019. The earlier timing of these reinvestments means that the Riksbank's holding of government bonds will increase in 2018 and in early 2019.

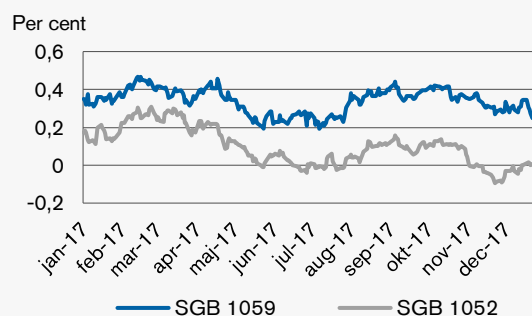
The share of the bond stock being traded actively has decreased on account of the Riksbank's purchases. Along with the lower central government borrowing requirement and new regulation this has contributed to a gradual deterioration of liquidity in the government bond market.

The Debt Office's assessment is that the situation in the market for government bonds has become more strained in the past year. One sign of this is that the volume of the Debt Office's repos with primary dealers has increased sharply.

Outstanding stock of nominal government bonds and the Riksbank's purchases as on 31/12/2017



Interest rate difference compared with Germany



6 Capital market borrowing

Most of the central government debt is financed by issuing government bonds, inflation-linked bonds and foreign currency bonds. This chapter describes the Debt Office's policy for borrowing using each of these instruments and to what extent the instruments were used in 2017.

6.1 Government bonds

Government bonds are the Debt Office's largest and most important funding source. Government bonds are therefore given higher priority than other instruments in borrowing. The volume issued is of great importance for the liquidity and pricing of these bonds in the secondary market.

The Debt Office offers regular issues according to a pre-determined issue plan. Selling small volumes on many occasions reduces the risk of needing to borrow large volumes in unfavourable market situations. At the same time investors are offered continuous access to the primary market. The size of the issues is chiefly influenced by the net borrowing requirement in the long term.

Policy

- The Debt Office gives priority to borrowing in government bonds so as to maintain a liquid bond market.
- Fluctuations in the borrowing requirement are primarily handled using money market instruments.
- The Debt Office seeks to maintain an even maturity profile up to ten years. New ten-year government bonds are introduced at intervals of 12–18 months. When the borrowing requirement is small, the Debt Office can choose to have a longer interval between these issues in order to ensure a sufficient volume of and good liquidity in the bonds.
- The Debt Office primarily issues in ten-year and five-year maturities.
- Issues in two-year maturities are made to support liquidity in the forward market or to spread borrowing when the borrowing requirement is large. Issues may also be made of loans with maturities between 2, 5 and 10 years to support liquidity in situations of shortages.
- When the market situation permits, the Debt Office may issue bonds with a maturity longer than 12 years.

Deliberations during the year

Lower issue volume

At the start of the year the Debt Office expected to borrow SEK 66 billion in government bonds. The issue volume was then SEK 3 billion per auction. As a result of the continual decrease in the net borrowing requirement the auction volume was reduced on two occasions during the year, first to SEK 2.5 billion and then to SEK 2 billion. The total borrowing reached SEK 50.5 billion.

Table 7 **Planned borrowing in government bonds**

SEK billion	2017	2018	2019
2016:3	66	66	
2017:1	52	50	
2017:2	52	50	
2017:3	51	40	40
Outcome	51		

New ten-year government bond in 2017

The Debt Office introduced a new ten-year government bond at the beginning of 2017 as planned. At the end of 2017 the new bond had reached a volume of SEK 46 billion.

Increased issue volume in long bonds

According to the government guidelines for 2017 the long-term benchmark for the stock of government bonds with maturities of more than twelve years was SEK 70 billion. The Debt Office regularly examines market interest in long bonds. During the year a total of SEK 4 billion was issued. The outstanding stock of long bonds increased from SEK 58 billion to 62 billion.

Result of borrowing activities

The Debt Office held 20 auctions of government bonds in 2017. At 16 of these the auction volume was split between two bond loans in order to meet demand for different maturities.

The Debt Office's policy is to chiefly issue ten- and five-year bonds. The emphasis is on the ten-year

maturity segment in order to quickly build up the volume of new bonds. During the year just over SEK 25 billion was issued in bonds with a maturity of ten years, see table 8. The proportion of issues made in ten-year maturities corresponded to 50 per cent, which is more than in 2016. Against the background of the limited demand for government bonds with short maturities and a small borrowing requirement the Debt Office did not issue bonds with a maturity shorter than about five years in 2017.

Table 8 Volume issued and average yield

Bond	Reference loan ¹	Volume issued, SEK billion	Average yield, per cent ²
SGB 1052 4.25% 12 Mar 19	2-year	0.0	-
SGB 1047 5% 1 Dec 20	2-year	0.0	-
SGB 1054 3.5% 1 Jun 22	5-year	9.0	-0.07
SGB 1057 1.5% 13 Nov 23	5-year	7.0	0.17
SGB 1058 2.5% 12 May 25		5.0	0.36
SGB 1059 1.0% 12 Nov 26	10-year	10.5	0.59
SGB 1060 0.75% 12 May 28	10-year	15.0	0.81
SGB 1056 2.25% 1 Jun 32		4.0	1.24
SGB 1053 3.5% 30 Mar 39		0.0	-
Total		50.5	0.51

¹Reference loans in the electronic interbank market in 2017.

² Average issue yield in the auctions.

Market conditions

Demand for bonds with maturities from five years and upwards was very good during the year. On average the auctions were oversubscribed just over three times, which is the same level as in the preceding year, see table 9.

The average yield at the auctions rose from 0.28 to 0.51 per cent. One explanation of the higher yields is that the average maturity of the bonds sold by the Debt Office in 2017 was longer than in the preceding year.

Table 9 Cover ratio and average yield

Per cent	2013	2014	2015	2016	2017
Cover ratio ¹	2.38	3.08	2.52	3.06	3.02
Average yield ²	1.87	1.35	0.48	0.28	0.51

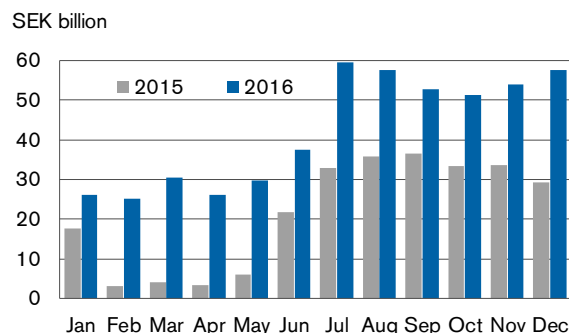
¹ Bid volume received as a proportion of issue volume offered.

² Only pure auctions, i.e. switch auctions and syndication not included.

Market commitment

Figure 24 shows that the volumes in the standing repo facility for government bonds were much larger in 2017 than in 2016 and this is related to the gradual deterioration of liquidity in the government bond market.

Figure 24 Standing repo facility, monthly average



6.2 Inflation-linked bonds

Inflation linked government bonds are a complement to nominal government 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.

Policy

- The Debt Office seeks to maintain an even maturity profile for its inflation-linked debt.
- New inflation-linked bonds are matched with government bonds in terms of maturities as far as possible.
- Auctions are held regularly with small volumes to reduce the risk of borrowing large volumes in unfavourable market situations.

Deliberations during the year

Index-linked share was in line with benchmark

Under the government guidelines inflation-linked debt is to make up 20 per cent of the total central government debt. This share is a long-term benchmark and in the event of periodic deviations the Debt Office does not take any immediate action to reach this target. The inflation-linked share has been lower than the benchmark for several years, but as a result of the decreasing central government debt, this share rose to 20.7 per cent at the end of the year, see figure 10 in chapter 3.

The inflation-linked share mainly depends on the development of the net borrowing requirement and the central government debt. Large increases or decreases in the net borrowing requirement cannot be addressed by large changes in the stock of inflation-linked bonds. Nor is the Debt Office able to use derivatives to adapt the share of inflation-linked debt.

As a result of lower borrowing requirement forecasts the Debt Office reduced the supply of inflation-linked bonds on two occasions in 2017. In the February forecast the auction volume was kept at SEK 750 million but one auction during the year was cancelled. The next reduction was made in the October forecast when the Debt Office reduced the auction volume to SEK 500 million. Table 10 shows that the volume issued at auctions in 2017 was SEK 12.0 billion.

Table 10 Change in inflation-linked debt in 2017, SEK billion

Outstanding stock at the end of 2016	199.9
Auctions	12.0
Net outcome of auction switches	-0.5
Maturities	-15.0
Net outcome of switch facility	0.7
National Debt Savings, inflation-linked	-0.1
Inflation adjustment	2.6
Outstanding stock at the end of 2017	199.7

The inflation-linked stock was largely unchanged in 2017 since one bond matured with a volume that corresponded to the total issue volume for the year including the adjustment for inflation. The other items that affect the stock of inflation-linked bonds were very small, see table 10.

Result of borrowing activities

Auctions were held on 17 occasions during the year. At ten of them the action volume was divided between two different bonds. This enabled the Debt Office to draw on the interest in bonds with different maturities. The Debt Office issued six different inflation-linked bonds with outstanding maturities of between 2 and 15 years. The issue volumes are presented in table 11.

Table 11 Volume issued and average yield

<i>Inflation-linked bond</i>	Volume issued SEK billion	Average yield, per cent
SGB 3110 (2019)	0.8	-2.05
SGB 3102 (2020)	0.0	-
SGB 3108 (2022)	1.3	-1.82
SGB 3109 (2025)	2.1	-1.39
SGB 3112 (2026)	2.0	-1.32
SGB IL 3113 (2027)	4.7	-1.11
SGB 3111 (2032)	1.1	-0.59
Total	12.0	-1.28

In addition to its recurring auctions the Debt Office held switch auctions in two periods. In February switches were carried out in connection with the introduction of the ten-year bond SGB IL 3113. In

December the Debt Office offered switches of SGB IL 3110, which matures on 1 June 2019. The Debt Office has a policy of letting about SEK 20 billion of an inflation-linked bond go to maturity. During the final year of the bond there are no issues or switches of the bond.

Market conditions

Investors' interest in inflation-linked bonds varied during 2017, as in the preceding year. Slightly lower market interest rates in combination with the varying inflation expectations resulted in strong fluctuations in demand. The cover ratio in the auctions was 2.44 in 2017, which was slightly higher than in 2016, see table 12.

Table 12 Cover ratio and average yield

	2013	2014	2015	2016	2017
Cover ratio ¹	3.88	2.98	3.41	2.10	2.44
Average yield, per cent ²	0.23	0.03	-0.78	-1.26	-1.28

¹ Bid volume received as a proportion of issue volume offered.

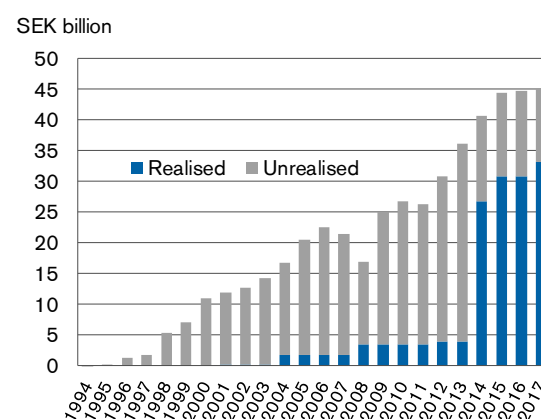
² Only pure auctions, i.e. exchange auctions not included.

Cost evaluation of inflation-linked borrowing

Since inflation-linked bonds were introduced in 1994, inflation has been lower than the average break-even inflation in the issues. The cost of the inflation-linked debt has therefore been less than for a hypothetical nominal debt with the same maturity.

Figure 25 shows that the calculated result since 1994 has accumulated to SEK 45 billion, of which SEK 33 billion has been realised. A large part comes from the initial years when the inflation-linked stock was built up. At that time break-even inflation was much higher than it has been recently. The result for 2017 was SEK -0.4 billion.

Figure 25 Result of inflation-linked borrowing



The inflation adjustment in 2017 was 1.7 per cent measured as CPI growth.¹³

Market commitment

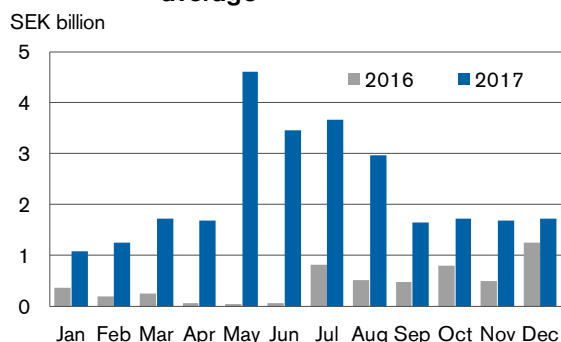
The Debt Office offers primary dealers the possibility of switching inflation-linked bonds for other such bonds in order to improve liquidity in the market.

When an inflation-linked bond has one year left to maturity the switch offer ends. Instead a limited buyback facility is offered. The objective is for no bond to be larger than SEK 20 billion when it matures, since large maturities can result in strains on the market.

For several reasons the Debt Office has spread the inflation-linked debt over many issues with a smaller volume of each individual bond. If there are many, relatively small issues, this reduces the need for switches and buybacks of bonds with short maturities. The idea is that a single bond should not be so large that it cannot mature without causing problems. Another aspect that points to spreading the inflation-linked debt over a number of different maturities is that this makes it easier for primary dealers to handle interest rate risk when they quote prices for inflation-linked bonds.

In addition, investors usually have restrictions on how much they can invest in an individual bond, and this can inhibit the demand for large loans. A substantial proportion of investors who track an index are unable to allocate more than 30 per cent to a single issue under the investment rules in place. For this reason the Debt Office seeks to ensure that no single bond will exceed 30 per cent of the inflation-linked bond index.

Figure 26 Standing repo facility, monthly average



¹³ Inflation-linked bonds are indexed to the CPI with a lag of three months. This figure therefore refers to inflation in the period October 2016 to October 2017.

The standing repo facility in inflation-linked bonds has had considerably lower volumes than for government bonds. However, compared with the preceding year there has been a strong increase in repo volumes. In 2017 the average repo volume was about SEK 2.3 billion compared with about SEK 0.4 billion in 2016, see figure 26.

6.3 Foreign currency bonds

Issuing foreign currency bonds spreads the financing of the central government debt across several markets and broadens the investor base. In contrast to the auctioning of government bonds, the Debt Office uses syndication to sell public bonds in foreign currencies (see the fact box on the next page).

In the international capital market the Debt Office is able to borrow large sums in a short space of time. So there are reasons for borrowing regularly in foreign currency even when the borrowing requirement is small since this maintains the preparedness to borrow large amounts if needed. For the same reason the issuance of public bonds has priority ahead of private placements when foreign currency borrowing is small.

Policy

- Bonds in foreign currencies are a complement to bonds in Swedish kronor. The volume issued in foreign currencies depends primarily on the size of the net borrowing requirement.
- The Debt Office issues small volumes in foreign currencies even when the net borrowing requirement is small so as to maintain its market presence.
- The Debt Office also finances on-lending to the Riksbank by issuing bonds and commercial paper in foreign currencies.

The timing and terms of an issue determine whether the issue is successful. This means that both the Debt Office and investors have to be satisfied. For the Debt Office, the point is to borrow the volume planned at as low a cost as possible. But for investors to be satisfied, there must still be demand for the bond after the issue. Well-considered loan terms create a demand that is so large that most,

but not all, investors receive an allocation in the issue. This plays its part in, at least, preventing the value of the bonds from falling in the secondary market.

Result of borrowing activities

Thanks to its high credit status and transparent borrowing policy the Debt Office is able to borrow at favourable terms irrespective of the currency. In recent years the Debt Office has only borrowed in US dollars and euros in the international capital market. As a rule this borrowing has taken place through syndication.

In 2017 the Debt Office only borrowed for on-lending to the Riksbank. The refinancing of this on-lending enabled the Debt Office to maintain a presence in the international capital market despite the surpluses in central government finances.

The Debt Office issued three bonds totalling USD 7 billion, which corresponds to SEK 61 billion. The maturities of the bonds were two and three years respectively, according to the wishes of the Riksbank.

In addition, the Debt Office borrowed the equivalent of SEK 16 billion in commercial paper on behalf of the Riksbank, also to replace maturing loans; for more information see section 7 on money market borrowing.

The Riksbank reimburses the Debt Office for the interest expense and administrative costs the Debt Office has for raising the loans.

Market conditions

The Debt Office was also able to raise new loans on favourable terms in 2017, and this was due both to the continued low level of interest rates and to the interest shown by investors in government securities with high credit ratings. Figure 27 shows that the yield difference in relation to the US Government for a USD bond issued by the Debt Office in April 2017. The yield on the bond was between 10 and 20 basis points above corresponding US government securities, which is lower than, for example, the Bank of England or the Nordic Investment Bank.

On account of stable capital markets and interest rate increases in the US investors focused mainly on five-year maturities. Most syndications of USD bonds on the market also had a five-year maturity.



Public bonds and private placements in foreign currencies

The Debt Office sells foreign currency bonds through what is called syndication. This means that the Debt Office engages a group of banks, a syndicate, to execute the sale. The bonds are marketed publicly and investors are offered the opportunity to subscribe to buy bonds. Such a bond is called a 'public bond' since it is sold openly to many investors.

Borrowing by syndication is practice when a state issuer is going to raise funding in another currency or wants to borrow a larger amount than usual on a single occasion. One of the advantages of syndication is that the bond is then marketed to a larger number of investors, which decreases the likelihood of the issue failing. From the point of view of investors the syndication process means that pricing is more transparent and that all investors have to pay the same price for the bond.

As a rule, syndicated loans are priced in relation to the swap curve in the currency concerned. The lead banks in the syndicate give an indicative price for a new loan by expressing how the loan should be priced in relation to a swap with the same maturity. The price indication is affected by the volume to be borrowed.

A 'private placement' in foreign currency is also a bond, but it is not marketed publicly and is sold direct to one investor or a few investors instead. In these cases it is normal to only engage one bank to sell the bond.

Both public bonds and private placements are sold with documentation under English law and are termed eurobonds. A eurobond can be issued in any currency.

This meant that the supply of shorter-maturity bonds with the highest credit rating was limited in 2017. Against this background the Debt Office's issues of bonds with maturities of between two and three years did, nonetheless, attract relatively substantial demand. On average, the USD bonds

were issued at 10 basis points above three-month USD Libor. Euribor and USD Libor are standardised bank interest rates used for comparisons.

Figure 27 Yield difference in relation to US Government

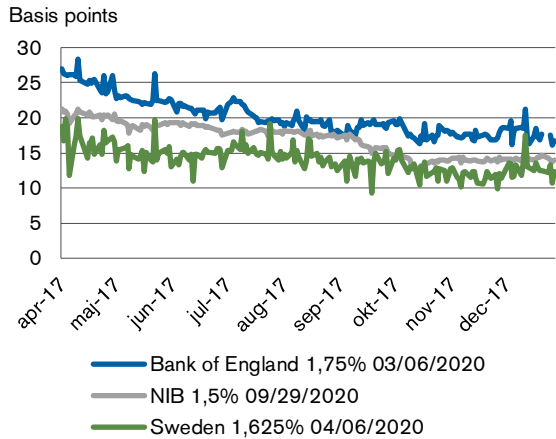


Table 13 Relative funding cost of foreign currency bonds

Basis points	2013	2014	2015	2016	2017
USD Libor ¹	−5	−7	−7	12	−6
Euribor ²	−11	−15	−24		

¹ Three-month bank interest rate.
² Six-month bank interest rate.

The Debt Office's investor base is broad in terms of both categories and geography. Central banks were the largest single category of investors, and this has been a clear pattern historically. Most of the investors were Asian, followed by investors from the American continent.

7 Money market borrowing

This chapter presents the Debt Office's borrowing in T-bills and commercial paper as well as loans and investments in the Debt Office's liquidity management.

In the money market the Debt Office borrows at short maturities, mainly by issuing T-bills and commercial paper. These instruments are used both in regular borrowing and in liquidity management. For example, T-bills are included in the Debt Office's issue plan, but T-bills can also be used to respond to temporary fluctuations in the borrowing requirement. In other words, there is no sharp dividing line between regular borrowing and liquidity management.

7.1 T-bills

Using T-bills the Debt Office can borrow at short maturities in the Swedish krona market. T-bills are issued regularly via auctions. Borrowing in T-bills can be adapted to some extent to seasonal variations in the borrowing requirement. The central government borrowing requirement is generally largest in December.

Policy

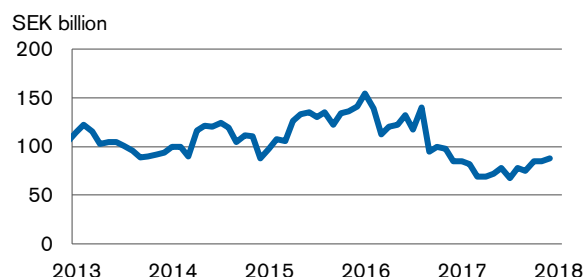
- The Debt Office issues T-bills with maturities of up to six months.
- Every third month the Debt Office issues a new six-month bill. In the other months a new three-month bill is introduced.
- The two T-bills with the shortest maturity are issued on tap when required, as are liquidity T-bills (T-bills with customised maturities).

Deliberations during the year

The planned average auction volume in T-bills deviation was SEK 10 billion in 2017. The Debt Office had originally planned four extra issues, of SEK 15 billion each, in October and December. Against the background of the surprisingly low borrowing requirement these issues were reduced to SEK 10 billion in conjunction with the October 2017 forecast.

During the year the outstanding stock of T-bills decreased from SEK 110 billion at the start of the year to SEK 88 billion at the end of the year, see figure 28.

Figure 28 Outstanding stock of T-bills



Result of borrowing activities

The average interest rate in the auctions was marginally lower than in the preceding year. The cover ratio was at the same level as in previous years, see table 14.

Table 14 Cover ratio and average yield

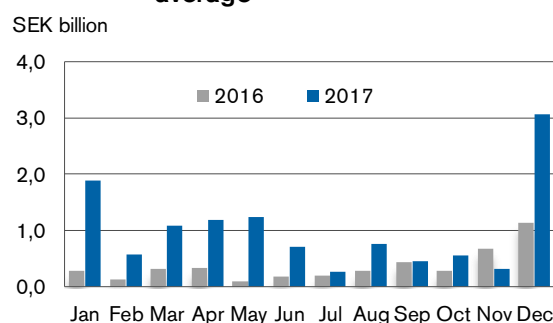
Per cent	2013	2014	2015	2016	2017
Cover ratio ¹	2.14	2.21	2.15	2.12	1.96
Average yield	0.90	0.41	-0.34	-0.69	-0.74

¹ Bid volume received as a proportion of issue volume offered.

Market commitment

Figure 29 shows that the volumes in the standing repo facility increased in 2017 compared with the preceding year.

Figure 29 Standing repo facility, monthly average



T-bills are often used as collateral in the and as the outstanding volume has decreased a shortage has arisen that has increased the volumes in the Debt Office's standing repo facility.

7.2 Commercial paper

When required the Debt Office also borrows by issuing commercial paper (short-maturity securities) in foreign currencies. These loans can be viewed as a complement to borrowing in T-bills.

The advantage of commercial paper is that the Debt Office is able to exploit the international demand for short instruments in for, example, USD and EUR. In the international money market the Debt Office is able to borrow large amounts in a short space of time, which is valuable in responding to large variations in the central government cash flow.

In previous years commercial paper has been an important instrument for the Debt Office. One reason for this is that the T-bill market has not been deep enough to enable the Debt Office to increase the stock rapidly if the borrowing requirement increases. However, the surpluses in recent years have meant that the need to borrow in commercial paper has been small.

Market conditions

The market for commercial paper has functioned well on the few occasions when the Debt Office has issued. In 2017 the Debt Office issued commercial paper in USD for SEK 3.4 billion, of which SEK 1.6 billion was on its own behalf.¹⁴ This is much less than in the preceding year, which is due to the lower borrowing requirement. At the end of the year the outstanding stock was USD 0.5 billion. The whole of this sum was for on-lending to the Riksbank.

7.3 Liquidity management

In liquidity management the Debt Office borrows or invests money so that central government can discharge its payment commitments every day. In addition to T-bills and commercial paper the Debt Office also uses bank loans and bank deposits, liquidity bills (T-bills with customised maturities), Riksbank certificates, repos and three-party repos (repos with a basket of collateral administered by a third party) and investments in, for example, covered housing bonds with a maturity of less than one year.

The Debt Office mainly conducts transactions in SEK, but also conducts transactions in foreign currency.

Policy

- The Debt Office will handle central government's day-to-day borrowing and investment requirement in a safe and cost-effective way in both Swedish kronor and foreign currency.
- Incoming and outgoing central government cash flows will be matched as much as possible.
- Currency exchanges between Swedish kronor and other currencies are spread evenly over the year.

Market conditions

The repo rate was unchanged at -0.50 per cent and the market continued to be characterised by low short-term interest rates.

The Riksbank continued to purchase government bonds, which meant that the bank system's liquidity surplus in relation to the Riksbank increased from SEK 366 billion at the start of the year to SEK 418 billion at the end of the year. Much of this surplus was invested each week in Riksbank certificates at the repo rate. The remainder was invested each day in overnight funds via the Riksbank's fine-tuning transactions at the repo rate minus 10 basis points.

One effect of the Riksbank's purchases of government bonds has been that the quantity of bonds available for repo transactions has decreased since the Riksbank is not active in the repo market. This probably contributed to a continued strong increase in the use of the Debt Office's standing repo facility in 2017, see figure 20 on page 19.

These repos mean that the Debt Office borrows more than it normally plans to. In the second half of 2017 this extra inflow was about SEK 55 billion per day.¹⁵ This meant that the Debt Office needed to cut back other short-term borrowing in order to avoid excessive and protracted surpluses in liquidity management.

The large liquidity surplus in the payments system has meant that it has been cheaper for the Debt Office to borrow money in the short term than to

¹⁴ When converted into Swedish kronor this corresponds to just under SEK 30 billion and just over SEK 14 billion.

¹⁵ Repo volumes are usually higher in the period July–December, see figure 24.

invest money in the deposit market. Previously the Debt Office could both borrow and invest money overnight at the repo rate but during the year the interest rate on investments has often been 10 basis points under the repo rate. To avoid overnight investments the Debt Office therefore tries to plan its liquidity so that a borrowing requirement arises at the end of the day.

Liquidity planning requires good forecasts on a daily basis of the central government borrowing requirement. Even though the Debt Office's daily forecasts generally have high precision (see figure 16 in chapter 4), there are sometimes payments that are hard to foresee.

In 2017 the net borrowing requirement was substantially lower than in the Debt Office's original forecasts.

In all, the strong increase in volumes in the standing repo facility and the surprisingly strong central government finances have meant that the Debt Office has needed to handle substantial surpluses in liquidity management during large parts of the year.

Result of borrowing activities

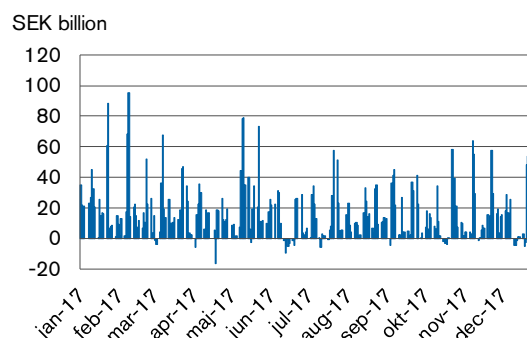
In liquidity management the Debt Office handles central government's daily borrowing and investment needs, where incoming and outgoing payments are matched as far as possible. On the days when outgoing payments are larger than incoming payments the Debt Office borrows to finance the deficit and on the days when incoming payments exceed outgoing payments the surplus is invested.

By having good forward planning the Debt Office can borrow and invest on better terms and reduce risks. During most of 2017 liquidity management handled large surpluses. The Debt Office invested these surpluses in the Riksbank's weekly certificates at the repo rate. The Riksbank certificates were judged to be the best investment alternative in terms of yield and risk. The Debt Office has also used repos in housing bonds with short outstanding maturities, repos in covered housing bonds and three-party repos to invest the surpluses.

Figure 30 shows the Debt Office's transactions in the deposit market, after investments in Riksbank

certificates in particular. There the Debt Office mostly borrows at the repo rate. During the year the Debt Office has been more active in longer maturities in the EUR and USD deposit market. This has made it possible to reduce borrowing costs in liquidity management.

Figure 30 Loans in the deposit market



Flows in foreign currencies and currency exchanges

The Debt Office also has flows in currencies other than SEK and regularly carries out exchanges in the currency market.

New and maturing loans, interest payments, EU payments, FX forward maturities and collateral transfers (CSA flows) are examples of what generates cash flows in foreign currencies. Another example of flows in foreign currency is the exchanges that the Debt Office carries out for other government agencies. These exchanges can take place in two ways. Either by the Debt Office issuing an FX forward to a government agency that generally wants to buy a currency at some time in the future or exchanges made via the new multi-currency cash pool account.

This account is a result of the new framework agreement in place since spring 2017. At present only the Swedish Pensions Agency is affiliated to the multi-currency cash pool, but the plan is to also integrate other government agencies with large currency exchange needs in the future.

The purpose of the multi-currency cash pool is to gather government agencies' currency flows and to let the Debt Office handle the net of these flows. This will reduce the cost of currency exchanges by government agencies.



Year-end effects in the money market

In the past three years short Swedish interest rates have fallen substantially in conjunction with year-ends, which has thus made it more expensive to invest money during this period. One conceivable explanation of the low interest rates is that they are bound up with the attempts made by banks to adjust their balance sheets before the year-end in order to limit their resolution fee.

Under the Resolution Act the handling of banks in crisis to be financed primarily by shareholders and creditors meeting losses and recapitalisation costs. But in extraordinary circumstances external financing may be required. This is why there is a resolution reserve that is being built up with fees from the institutions.

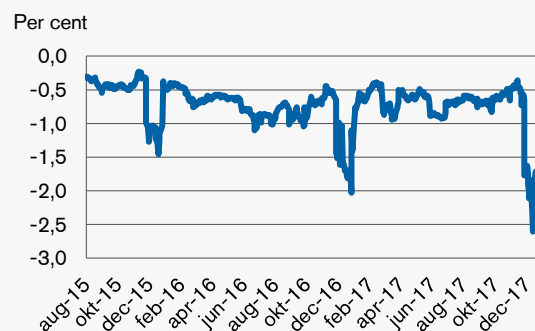
The resolution reserve is being financed with fees paid by the credit institutions and securities companies covered by the Resolution Act. The large institutions pay a fee that is proportionate to the risk they constitute to the system.

The base for the calculation of the annual fee is based on the size of the liabilities side of their balance sheet and on what their risk level is. The base is read off at year-end and this means that the institutions have an incentive to try to adjust their balance sheets to make the debt side as small as possible or to ensure that they recover costs for investments made at year-end. A total of some SEK 6.5 billion was charged in resolution fees in 2017.

In practice the interest rate change at year-end means that by keeping their investment interest rate down the institutions try to pass on some of the costs of the resolution fee to their customers, who therefore receive a lower return on their investments.

It can be seen from the figure below that the interest rate for one-month borrowing in USD that has been exchange hedged to Swedish kronor falls sharply in conjunction with the turn of the year. Corresponding interest rate movements have been seen in all short krona financing (up to three months) in the past three years. The STIBOR reference interest rate has followed the same pattern.

Interest rate on a one-week investment in US dollars that has been converted into Swedish kronor



8 Derivative instruments

The Debt Office uses interest rate swaps, basis swaps and FX forwards to achieve the desired interest rate and currency exposure in the central government debt.

By using derivatives the Debt Office is able to borrow in a flexible and effective way while keeping risks within the limits set out in the government guidelines.

8.1 Interest rate swaps

Interest rate swaps are used to adjust the duration of the central government debt without affecting the refinancing risk. The Debt Office has previously made the assessment that it has been more cost-effective to have short rather than long interest rate exposure since short rates have historically been lower than long rates. On the basis of this analysis interest rate swaps were long used to shorten the maturity of the debt and therefore attain lower borrowing costs. In recent years the Debt Office and several other analysts have concluded that term premiums are probably very limited. So the cost advantage of short exposure has decreased and the Debt Office has therefore limited the use of interest rate swaps.

Policy

- The maturity of the swaps is to be between two and four years.
- The swap transactions are spread evenly over the year.

Deliberations during the year

In 2017 the maturity mandate for the Debt Office's interest rate swaps was adjusted. These interest rate swaps now have to have a maturity of between two and four years. Under the previous policy the maturity of the swaps was to be adapted to the maturity of the government bonds issued during the year.

During the year the Debt Office has swapped a total of SEK 5 billion to short interest rate exposure.



Interest rate swaps

An interest rate swap is an agreement to swap a fixed interest rate for a floating interest rate with a counterparty. The Debt Office uses interest rate swaps to shorten the duration of the debt. This can be done in the following way:

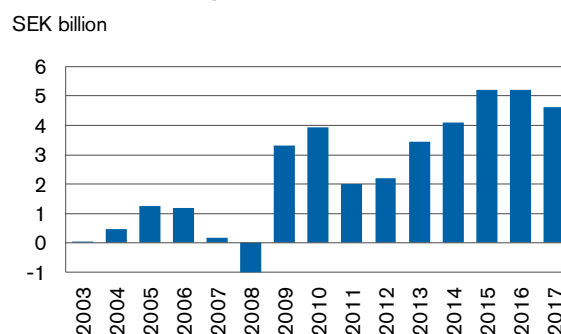
1. The Debt Office issues a government bond with, for example, a ten-year maturity and a fixed interest rate.
2. The Debt Office enters into an interest rate swap and receives fixed interest in return for paying three month interest (3M Stibor) for ten years.

The net effect is that Debt Office pays 3M Stibor with a deduction corresponding to the difference between the swap and bond interest.

Result of activities

Figure 31 shows the calculated result since swaps were introduced in 2003. This result is calculated as the difference between the floating interest paid by the Debt Office and the fixed interest received by the Debt Office so far in the swaps.

Figure 31 Net cash flow in interest rate swaps



Since the start the use of swaps has reduced the costs of the central government debt by SEK 36 billion. This saving is mainly because interest rates have been falling for a long time. In a period of rising interest rates the result would be significantly lower or even negative. The calculated result for 2017 was SEK 4.6 billion.

8.2 Basis swaps

With the aid of basis swaps and currency exchanges the Debt Office can transform Swedish krona loans into foreign currency exposure.

The Government has decided that the foreign currency exposure in the central government debt is to decrease. As a result, no new basis swaps were entered into in 2017.

8.3 FX Forwards

FX forwards are used to achieve the desired exposure in the foreign currency debt.

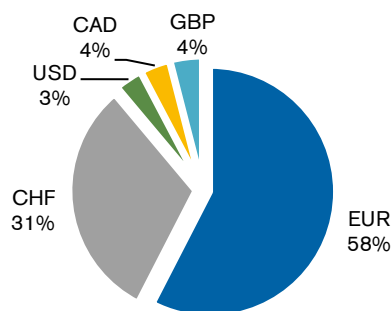
Policy

- FX forwards are used to adjust and maintain exposure in individual currencies.
- FX forwards with a maturity of about 3 months are used to maintain the maturity of the foreign currency debt within the interval 0–1 years and are replaced with new FX forwards when they mature.

By using derivatives the Debt Office can raise funds in one currency, but create foreign currency exposure in another. Figure 32 shows the exposure of the foreign currency debt to various currencies.

FX forwards are used to maintain exposure to US dollars (USD), Canadian dollars (CAD), sterling (GBP) and Swiss francs (CHF) while exposure to the euro (EUR) is chiefly maintained by basis rate swaps, but also by loans to some extent.

Figure 32 Currency exposure in the foreign currency debt excluding on-lending



Market conditions

The market for FX Forwards functioned well during the year. In the markets where the Debt Office operates, large volumes can be handled without affecting the price.

9 Positions

This chapter describes the conditions for and the result of the Debt Office's position-taking in foreign currency in 2017. It also reports the outcome of the position initiated at the end of 2014 to lock in a negative interest rate on the central government debt in Swiss francs.

The Debt Office can take positions in foreign currencies to achieve cost savings or reduce risk in the management of the central government debt. These activities are conducted both internally and with the assistance of external managers. Positions are taken in derivative instruments in liquid markets.

The gross result for 2017 was SEK -91 million, see table 15. The net result, which includes fees for external management, was SEK -102 million. The negative result for the year is attributable to external position taking. On average, the use of risk in continuous position taking was three per cent of the Value-at-Risk mandate assigned by the Government to the Debt Office.

Table 15 Result of position taking¹⁶

SEK million	2013	2014	2015	2016	2017	Total	Average
Internal	235	-216	-47	-1	13	-16	-3
External	-35	90	44	44	-104	39	8
Commissions	-11	-44	-25	-16	-11	-107	-21
Total	188	-170	-27	27	-102	-84	-17

Market conditions

2017 was characterised by global optimism about growth, low interest rates and stock exchanges reaching new record levels. Volatility was low in the interest rate and currency markets. In several countries yield curves became flatter, primarily because short interest rates rose more than long rates. The German yield curve was an exception with an almost unchanged slope. The euro-dollar exchange rate rose by more than 14 per cent during the year.

American politics was characterised by deadlock but at the end of the year the Senate and House of Representatives approved a new tax reform. In Europe several important elections were held in 2017. Most attention was directed at the elections in France and Germany. Negotiations on the UK leaving the EU continued during the year but a final

agreement is still not in place. As the global recovery became ever more pronounced, markets began to prepare for a less expansive monetary policy from central banks around the world.

Internal position-taking

Internal position-taking was resumed at the start of 2017. The year has mostly been used to build up operations on their new basis. At the end of the year Internal position-taking had generated a positive result of SEK 13 million (corresponding to 9 basis points). The use of risk was 11 per cent.

The bulk of the positions during the year were taken in currencies. This contributed to three-quarters of the profit coming from currency positions. For the year viewed as a whole it was positioning for a generally stronger Canadian dollar that generated most profit. Positions for a stronger Australian dollar and a stronger euro in relation to the US dollar and a weaker Swiss franc also made positive contributions to the result. On the interest side it was positioning for a steeper yield curve in Germany and a flatter yield curve in the US that produced positive results. Position that interest rates in France and Germany would diverge also contributed profit.

External position taking

At present the Debt Office engages five external managers in its continuous position taking. The group of external managers achieved a gross result of SEK -104 million (-29 basis points). The net result after management commissions was SEK -115 million.

Around three-quarters of the gross result, SEK -77 million, is attributable to currency positions. Positions for a stronger US dollar in relation to the Canadian dollar and sterling contributed particularly to the negative currency result. On the interest rate side positions in UK and German interest rates

¹⁶ The result is measured as change in the market value of the portfolios (including accrued interest) plus realised flows.

generated losses. Positions for a weaker appreciation/development of the Swiss franc and US interest rate positions helped to dampen losses slightly. The use of risk during the year was 21 per cent, which is the lowest level measured.

The weak annual result for the Debt Office's external managers is not unique. This can also be seen among other constant positive return mandates. Market conditions have been difficult, partly on account of extraordinary measures taken by central banks and generally low levels of interest rates that could not be captured fully in traditional valuation models.

It is worth noting that in 2017 all managers reported negative results. The last time that happened was in 1999, when only two managers were used. In terms of the gross result 2017 was the second worst year since the Debt Office started using external managers. Only 1994 was worse.

The current mandate for external managers was set up in other conditions on interest and currency markets. In the present situation managers are having increasing difficulty in establishing a desirable balance between currency and interest rate positions since limits on the interest rate side restrict the possibilities of attaining a desirable portfolio mix. This leads to a bias towards more currency than interest rate positions. In consequence the total use of risk by managers has also become more limited. The Debt Office has started to review the mandate.

Evaluation of the activities in the long term

The result of the Debt Office's position-taking varies from year to year and is therefore also evaluated in five-year periods.

The average gross result of position taking for the period 2013–2017 was SEK 5 million per year. The net result for the period was SEK -17 million per year on average. Internal continuous position-taking gave a deficit of SEK 3 million per year on average. External position-taking contributed a positive gross result of SEK 8 million per year on average. However, the net result for the period was negative by an average of SEK 14 million per year.

CHF position

At the end of 2014 the Debt Office initiated a position that locked in a negative interest rate of -0.16 per cent for the CHF debt. The main aim was to reduce cost variation. At most the size of this position was CHF 4.5 billion, corresponding to about SEK 38 billion at the present exchange rate. The position has now matured.

After the position was taken Swiss interest rates fell further. Most of the change occurred in January 2015 when the Swiss central bank decided to abandon the link to the euro. This decision resulted in a substantial strengthening of the Swiss franc. To counter this strengthening the Swiss central bank reduced its key interest rate by 0.5 percentage points to -0.75 per cent. With hindsight it would therefore have been better not to lock the interest rate at -0.16 per cent.

In December 2017 the final interest rate positions in Swiss francs expired. During the period December 2014 until and including December 2017 the Debt Office received SEK 534 million in interest income for the debt in Swiss francs. Without this interest hedging the Debt Office would instead have received SEK 965 million. The difference of SEK -431 million is thus the result of the position.

The cost variation for the debt in Swiss francs expressed as an annual standard deviation is estimated to have decreased by 0.1 per cent.

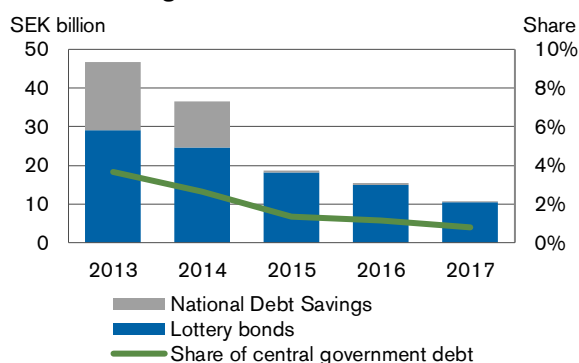
10 Retail market borrowing

The result of borrowing in the retail market is presented here. The objective is to borrow at a lower cost than in the institutional market. Because of the low interest rates in the institutional market, retail market borrowing was not able to make any contribution to reducing the costs of the central government debt in 2017.

Negative result from the retail market

The Debt Office borrows not only in the money and bond market but also from private individuals and other small investors who place money in lottery bonds and National Debt Savings. At the end of 2017 the retail market financed 0.8 per cent of the central government debt, which is a decrease of 0.3 percentage points compared with the previous year, see figure 33.

Figure 33 Retail market share of central government debt



Borrowing in the retail market is intended to cost less than corresponding borrowing in the capital market. Up until 2014 borrowing in the retail market did result in a saving for central government, but since 2015 this form of borrowing has been more expensive, see table 16.

Table 16 Saving from retail market borrowing

SEK million	2013	2014	2015	2016	2017	Total	Average
Lottery bonds	81	71	33	-23	-21	141	28
National Debt Savings	17	0	-40	-10	-3	-36	-7
Total	97	71	-7	-33	-24	104	21

Retail market borrowing increased the cost for central government by SEK 24 million in 2017. The main reason for the outcomes in 2015–2017 is that this borrowing has taken place at positive interest rates while the corresponding interest rates in the capital market have been negative. For the

five-year period 2013–2017 the aggregate cost saving (result) was SEK 104 million, corresponding to an average of SEK 21 million per year.

No new lottery bond during the year

In 2017 the result for lottery bonds improved by SEK 2 million to SEK -21 million. The improvement was because two bonds issued at a loss were repaid during the year.

As a result of the low level of interest rates the Board of the Debt Office decided on 13 December 2016 not to issue lottery bonds for the time being. In 2017 no new lottery bonds have been issued. Issuance will be resumed when this form of savings is again judged to be profitable.

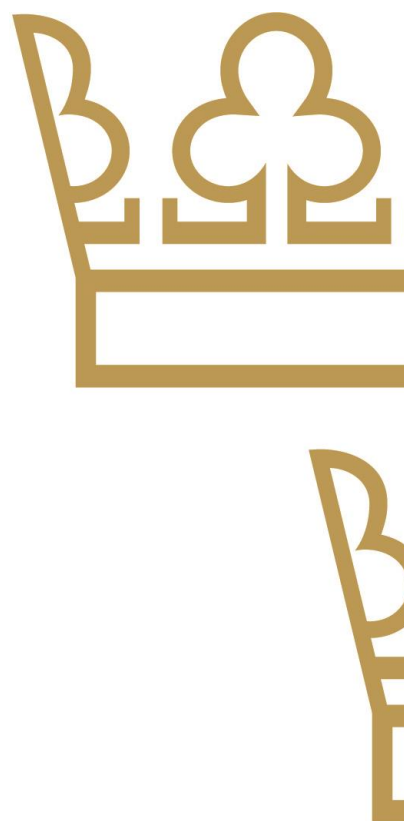
Continued winding down of National Debt Savings accounts

The bulk of the stock of National Debt Savings at floating interest rates was wound down in November 2015. Most of the remaining accounts were repaid in 2016 and the amount remaining at the end of the year was just over SEK 11 million. It was possible to repay more money in 2017 and at the end of December only just over SEK 7 million was left. The result from National Debt Savings improved by SEK 7 million to SEK -3 million.

Accounts in National Debt Savings were closed for new account holders in December 2012. Existing accounts continue to run to their due dates. The last accounts mature in December 2020. The amount remaining at the end of year was almost SEK 118 million.

Shrinking share of the interest savings market

At the end of the year lottery bonds and National Debt Savings accounted for 0.5 per cent of the interest savings market in Sweden (bank deposits, fixed income funds and private bonds). This is a decrease of 0.3 percentage points compared with the previous year and is due to greatly reduced volumes in a growing market.



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