

CENTRAL GOVERNMENT DEBT MANAGEMENT

Proposed Guidelines 2020–2023



The Swedish National Debt Office's mandate

One of the Debt Office's primary responsibilities is to borrow money on behalf of the central government and manage the central government debt. The objective is to minimise the cost over the long-term while taking account of risk. Central government debt must be managed within the framework of monetary policy requirements.

At the general level, debt management is governed by the Swedish Budget Act and the Ordinance Containing Instructions for the Swedish National Debt Office. These statutes set out, for example, the permitted purposes of central government borrowing and the objective of the debt management. In addition, the Swedish Government adopts guidelines for this management that govern matters including the composition and maturity of the debt.

The Government adopts new guidelines each year no later than 15 November. This decision is taken after the Debt Office has submitted proposed guidelines on which the Riksbank has been given the opportunity to deliver an opinion.

The operational role of the Debt Office then includes borrowing the money required, in accordance with the framework set up, to finance deficits in the central government budget and replace loans that mature.

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

The proposed guidelines and the basis for evaluation are published on riksgalden.se.



Contents

Summary	2
Proposed guidelines 2020–2023	3
The objective of central government debt management	3
The Debt Office's mandate and the purposes of borrowing	3
Guidelines process	3
Composition of the central government debt – shares of debt	4
Term to maturity of the central government debt	4
Cost and risk	5
Market support and debt maintenance	5
Position taking	5
Borrowing to meet the need for central government securities	6
Management of funds etc.	6
Consultation and collaboration	6
Evaluation	6
Basic premises of the guidelines proposal	7
Continued low debt with new fiscal policy framework	7
Strained liquidity in the government bond market	9
The role of government bonds in sustainable development	10
Focus on the composition of the central government debt	11
Target for inflation-linked debt should remain despite decrease in total debt	12
Equivalent costs for nominal and inflation-linked funding	13
Capacity of nominal borrowing remains despite lower debt	15
Foreign currency exposure to be left unchanged	17
Weak krona makes reduction of currency exposure costly	17
Foreign currency exposure shall be re-evaluated	18
Combined steering of term to maturity provides a better overview	20

Summary

- In the coming years, conditions for managing the central government debt are expected to be characterised by a continued low level of debt, strained liquidity in the government securities market and an increased focus on sustainability. Due to these conditions, the issue has been raised of whether to alter the composition of the debt.
- The Debt Office has analysed whether to reduce the proportion of inflation-linked bonds to create additional scope for nominal bonds, which are the central government's most important source of funding. The analysis shows that there are currently no grounds for reducing the share of inflation-linked debt for such reasons, as the stock of inflation-linked bonds is expected to decrease significantly even under the current guidelines. There are also no distinct systematic differences in cost between inflation-linked and nominal borrowing.
- The Debt Office has identified a need for a new review of the foreign currency exposure of the central government debt because the underlying conditions of the previous analysis may have changed. Until there is a new review, the Debt Office proposes that the foreign currency exposure be left unchanged. In this case, the Debt Office would refrain until further notice from buying foreign currency to reduce the foreign currency debt.
- The strategy implemented in 2015 to reduce the foreign currency exposure has become relatively costly as a result of the krona development in recent years. In addition, the krona has especially weakened against the specific currencies that the Debt Office would need to buy in periods ahead to continue reducing the foreign currency exposure. This is another reason for proposing that the exposure be left unchanged until there is a new review.
- The Debt Office proposes a combined maturity target for the entire central government debt because it would improve the overview of the overall level of risk. Merging the steering of the term to maturity would result in a target interval of 3.5–6 years for the entire debt. This would also include the foreign currency debt, which currently has a separate maturity target.

Proposed guidelines 2020–2023

The proposed guidelines for central government debt management presented here are for 2020–2023. For the years 2021–2023, the proposal is for preliminary guidelines. Where there are proposed revisions to the current guidelines, the present wording is in the left column and the proposed new wording in the right column. In order to provide an overview of the framework that governs the debt management, the relevant parts of the Budget Act and the Ordinance Containing Instructions for the Debt Office are also included.

The objective of central government debt management

1. The objective of managing the central government debt is to minimise the cost of the debt over the long-term while taking account of the risk in its management. The debt must be managed within the framework of monetary policy requirements.
Budget Act (2011:203).

The Debt Office's mandate and the purposes of borrowing

2. The Debt Office is tasked with raising and managing loans for central government in accordance with the Budget Act. *Ordinance (2007:1447) Containing Instructions for the National Debt Office.*
3. Under the Budget Act, the Debt Office may raise loans for the central government in order to:
 - finance current deficits in the central government budget and other expenditure based on decisions of the Riksdag
 - provide such lending and perform such guarantees as decided by the Riksdag
 - amortise, redeem and buy back central government loans
 - meet the need for government securities at different maturities in consultation with the Riksbank
 - meet the Riksbank's need for foreign currency reserves

Guidelines process

4. The Debt Office shall submit proposed guidelines for central government debt management to the Government no later than 1 October each year. *Ordinance Containing Instructions for the National Debt Office.*
5. The Government shall request an opinion from the Riksbank on the Debt Office's proposal. *Budget Act.*
6. The Government shall adopt guidelines for the Debt Office's management of the central government debt no later than 15 November each year. *Budget Act.*
7. The Debt Office shall submit information for the evaluation of the management of central government debt to the Government no later than 22 February each year. *Ordinance Containing Instructions for the National Debt Office.*
8. The Government shall evaluate the management of the central government debt every other year. The evaluation shall be presented to the Riksdag no later than 25 April. *Budget Act.*

9. The Debt Office shall establish principles for the implementation of the guidelines for central government debt management adopted by the Government. *Ordinance Containing Instructions for the National Debt Office.*

Present wording

10. The Debt Office is to establish internal guidelines based on the guidelines from the Government. These decisions are to concern the use of the mandate for position taking, the term to maturity of the nominal krona debt and the inflation-linked krona debt, the currency distribution of the foreign currency debt, and principles for market support and debt maintenance.

Proposed new wording

10. The Debt Office is to establish internal guidelines based on the guidelines from the Government. These decisions are to concern the use of the mandate for position taking, the term to maturity of *individual debt types*, the currency distribution of the foreign currency debt, and principles for market support and debt maintenance.

Composition of the central government debt – shares of debt

11. The proportion of inflation-linked krona debt is to be 20 per cent of the central government debt over the long term. The proportions of different debt types in the central government debt are to be calculated as nominal amounts at the present exchange rate including accrued inflation compensation.

Present wording

12. The foreign currency exposure of the central government debt shall decrease. The decrease is to be no more than SEK 30 billion per year. The exposure shall be calculated in a way that excludes changes in the krona exchange rate.

Proposed new wording

12. The foreign currency exposure of the central government debt shall *be left unchanged*. The exposure shall be calculated in a way that excludes changes in the krona exchange rate.

13. The Debt Office is to set a target value for the distribution of the foreign currency debt among different currencies.

14. In addition to inflation-linked krona debt and foreign currency debt, central government debt is to be composed of nominal krona debt.

Term to maturity of the central government debt

Present wording

15. The term to maturity of the krona debt is to be between 4 and 6.5 years.
16. The Debt Office is to determine a term-to-maturity interval for the nominal krona debt, and the inflation-linked krona debt.
17. The term to maturity of the foreign currency debt is to be between 0 and 1 year.
18. The term to maturity of the types of debt may deviate temporarily from the maturities stated in points 15 and 17.
19. Term to maturity is to be measured as duration.

Proposed new wording

15. *The term to maturity of the central government debt is to be between 3.5 and 6 years.*
16. *The Debt Office is to determine a term-to-maturity interval for the nominal krona debt, the inflation-linked krona debt, and the foreign currency debt.*
17. *The point is removed (because the separate term to maturity for foreign currency debt, and for the other types of debt, is set in accordance with point 16).*
18. *The term to maturity of the central government debt may deviate temporarily from the maturity interval stated in point 15.*

Cost and risk

20. The trade-off between expected cost and risk is primarily to be made through the choice of the composition and term to maturity of the central government debt.
21. The main cost measure shall be the average issue yield. The cost is to be calculated using the valuation principle of amortised cost, taking into account exchange rate changes and accrued inflation.
22. The main risk measure shall be variation in the average issue yield.
23. The Debt Office shall take account of refinancing risks in the management of the central government debt, including by issuing instruments with more than twelve years to maturity.
24. Borrowing shall be conducted in such a way as to ensure a broad investor base and diversification in a range of funding currencies in order to maintain good borrowing preparedness.
25. Positions are not to be included in the calculation of debt shares and term to maturity.
26. When taking positions, market values are to be used as the measure of cost and risk in the management of the debt.

Market support and debt maintenance

27. The Debt Office is to contribute, through its market support and debt maintenance, to the effective functioning of the government securities market in order to achieve the objective of long-term cost minimisation while taking account of risk.
28. The Debt Office is to establish principles for its market support and debt maintenance.

Position taking

29. The Debt Office may take positions in foreign currency and the krona exchange rate.

Positions in foreign currency may only be taken using derivative instruments. Positions may not be taken in the Swedish fixed income market.

Positions refer to transactions that are intended to reduce the costs of the central government debt while taking account of risk, or to reduce the risks for the central government debt while taking account of cost, and that are not motivated by underlying borrowing or investment requirements.

Positions may only be taken in markets that permit the management of market risk through liquid and otherwise well-developed derivative instruments that are also potentially a borrowing currency in the context of debt management.

30. Positions in foreign currency are limited to SEK 300 million, measured as daily Value-at-Risk at 95 per cent probability.

The Debt Office is to decide how much of this scope may be used at most in day-to-day management.

31. Positions in the krona exchange rate are limited to a maximum of SEK 7.5 billion. When the positions are built up or wound down, this is to be done gradually and announced in advance.

The Debt Office is to decide how much of this volume may be used at most in continuous management in connection with exchanges between the krona and other currencies. This volume shall be of a limited size and the positions do not need to be announced in advance.

Borrowing to meet the need for central government securities

32. The possibility of raising loans to meet the need for government securities under Chapter 5, Section 1 of the Budget Act may only be exercised if necessary in the event of a threat to the functioning of the financial market. The Debt Office may have outstanding securities with a maximum nominal value of SEK 200 billion for this purpose.
33. Investment of funds raised through loans to meet the need for government securities should be guided by the principles set out in the Preventive Government Support to Credit Institutions Act (2015:1017).

Management of funds etc.

34. The Debt Office shall place its funds, to the extent that they are not needed for disbursement, in an account at the Riksbank, a bank or a credit market company, or in government securities or other debt instruments with a low credit risk. Investments may be made abroad and in foreign currency. *Ordinance Containing Instructions for the National Debt Office.*
35. The Debt Office shall cover the deficits that occur in the government central account. *Ordinance Containing Instructions for the National Debt Office.*
36. The management of exchanges between Swedish and foreign currency (currency exchanges) shall be predictable and transparent. *Ordinance Containing Instructions for the National Debt Office.*

Consultation and collaboration

37. The Debt Office shall consult with the Riksbank on matters concerning the components of its borrowing operations that can be considered of significant importance to monetary policy. *Ordinance Containing Instructions for the National Debt Office.*
38. The Debt Office shall collaborate with the National Institute of Economic Research and the National Financial Management Authority on matters concerning the Debt Office's forecasts of the central government borrowing requirement. *Ordinance Containing Instructions for the National Debt Office.*
39. The Debt Office should obtain the Riksbank's views on how the funds borrowed to meet the need for government securities under the Budget Act are to be invested.

Evaluation

40. Evaluation of the management of the central government debt is to be carried out in qualitative terms based on the knowledge and information available at the time of the decision. Where possible, the evaluation shall also include quantitative measures. The evaluation shall cover five-year periods.
41. The evaluation of the operational management shall include borrowing in and management of the different types of debt, market support and debt maintenance measures, and management of currency exchanges.
42. For inflation-linked borrowing, the realised cost difference between inflation-linked and nominal borrowing is to be reported.
43. For retail-market borrowing, the cost savings compared with alternative borrowing is to be reported.
44. Gains and losses shall be recorded continuously for holdings within a position taking mandate and evaluated in terms of market values.

Basic premises of the guidelines proposal

In the guidelines for central government debt management, an overall trade-off between cost and risk is made by determining the composition and maturity of the debt. The balancing of cost and risk – and of different risks – can vary depending on the conditions present. The main factors expected to affect conditions for central government debt management in the coming years are: a continued low level of debt, strained liquidity in the government securities market, and an increased focus on sustainability.

The objective of the debt management is to minimise costs over the long term while taking risk into account. A long-term perspective requires a strategy designed to achieve the lowest possible cost of the debt as a whole over time, as opposed to for individual issues or instruments. In developing the guidelines, it is important to consider how the debt portfolio is to be structured by types of debt and maturities, but other factors also affect the potential for keeping the borrowing cost low over the long term. Those factors include safeguarding a well-functioning government securities market and maintaining confidence in the Swedish state as an issuer.

The foremost risk is the degree to which the cost of the debt is expected to vary. The significance of this risk depends on the size of the central government debt. If the debt is large, high cost variation can lead to major fluctuations in central government finances, whereas a small debt carries a lower risk of impact from variation in cost.

The Debt Office must also consider other risks in the operational management. These include maintaining a low level of funding risk, i.e. having good preparedness to borrow large amounts at reasonable cost when necessary. Other examples include reputational risk and counterparty risk.

In the guidelines, a balance between cost and risk is determined based on long-term structural factors. This is thus not a matter of adapting the guidelines to expected interest-rate or exchange-rate movements. The Debt Office identifies the following three main structural factors to affect conditions in the coming years:

- the size of the central government debt
- the functioning of the government securities market
- the role of central government debt management in the shift towards sustainable development

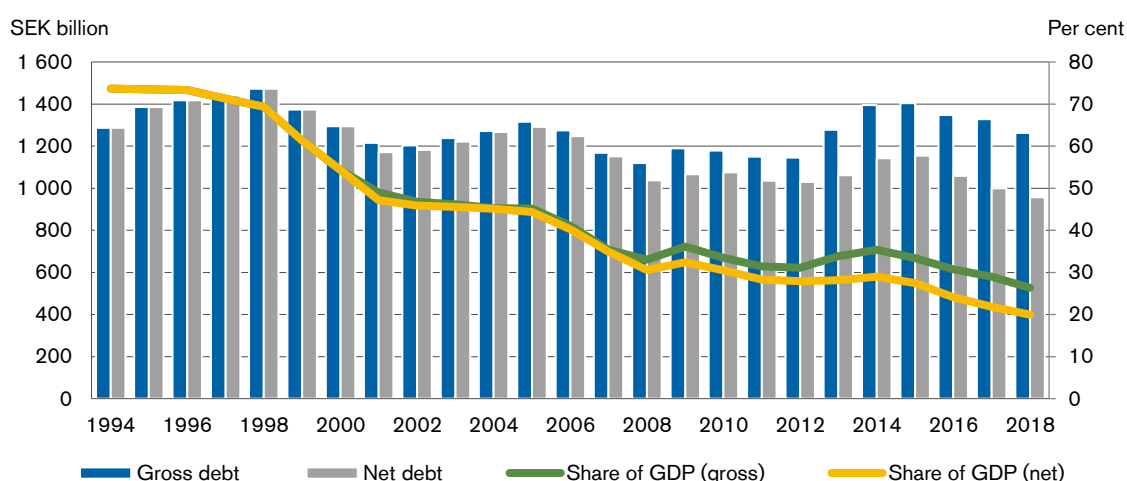
Continued low debt with new fiscal policy framework

The central government debt as a share of GDP has declined since the mid-1990s. The current level is low, both from an international and historical perspective. Figure 1 shows the debt in kronor and as a share of GDP, in gross and net terms. As shown in the figure, net debt has also decreased in absolute terms. Gross debt is the official measure comprising the sum of all outstanding loans.

Net debt is derived by deducting assets under management from gross debt. These assets mainly consist of claims on the Riksbank as well as short-term investments as part of liquidity management.

Both measures are relevant for central government debt management, although in different ways. The net debt is that which is used in the guidelines because its composition determines how high the cost will be and how much it will vary. But the gross debt shows how much the Debt Office has issued in total and provides a better indication of the potential for maintaining a presence in different markets. On-lending to the Riksbank has allowed the Debt Office to borrow relatively large amounts in foreign currency without increasing the foreign currency exposure of the net debt. This has enabled the Swedish state to maintain its presence in the international capital market without detriment to the issuance of government securities in kronor.

Figure 1. Development of the central government debt



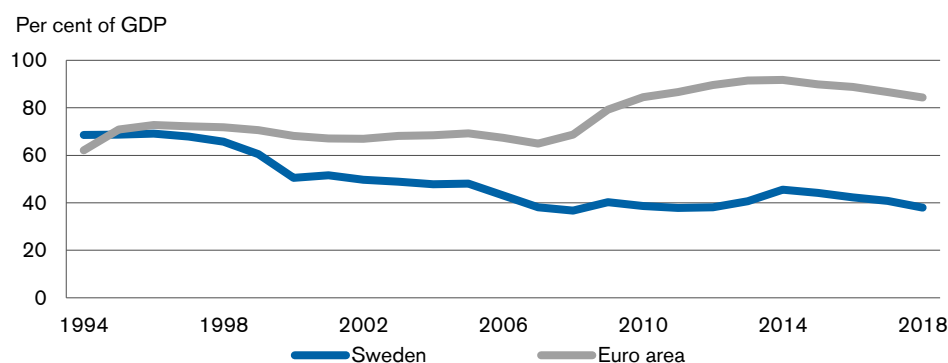
Note: Gross debt (official measure) and net debt after deduction of assets (exposure measure in the guidelines)
Sources: The Debt Office and Statistics Sweden

Given the fiscal policy framework, it is likely that the trend of central government debt decreasing will continue. The Riksdag has established that net lending for the general government sector, as a percentage of GDP, is to amount to one-third of GDP over an economic cycle. This surplus target is also supported by an anchor for the general government consolidated gross debt (Maastricht debt) of 35 per cent of GDP. In addition to central government debt, this measure includes the municipal sector, county councils and the national pension scheme. If the Maastricht debt deviates from the debt anchor by more than 5 per cent of GDP, the Government is to report to the Riksdag on why the deviation occurred and how it is to be dealt with.

In the proposed guidelines, the Debt Office has therefore presumed that the decrease will continue and the Maastricht debt will reach 30 per cent of GDP within a few years, i.e. 5 percentage points below the anchor. If the debt in the rest of the general government sector remains at around the current proportion, this would entail a central government (gross) debt of under 20 per cent of GDP, or approximately SEK 1,000 billion. If the on-lending of around SEK 200 billion to the Riksbank remains at the current level, the net debt would amount to SEK 800 billion. This is a small central government debt both in historical terms and in comparison with other countries (see Figure 2).

If the central government debt is small and the borrowing requirement low, the risk in terms of cost variation is less significant than if the debt corresponds to a large share of GDP. It is then reasonable to shift focus slightly from trying to reduce that risk by diversifying debt types to instead maintaining important borrowing channels to ensure future borrowing at low cost.

Figure 2. An international comparison of general government debt (Maastricht measure)



Source: IMF

Strained liquidity in the government bond market

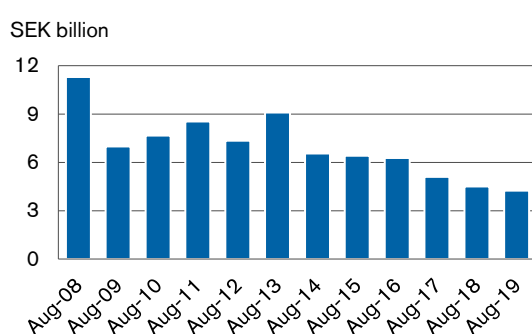
Liquidity in government securities markets, in Sweden as well as internationally, has deteriorated gradually since the global financial crisis of around ten years ago. Liquidity refers here to the possibility to buy or sell large volumes quickly without affecting the market price. When conditions for trading in government securities worsen, the liquidity premium can increase. This means that investors demand a higher return to buy government securities. There is also a risk that investors will abandon the market altogether in favour of other investment alternatives. Investors who have chosen to leave may demand higher returns to re-enter the market.

The regulations implemented after the financial crisis, including higher capital requirements and liquidity buffers, are probably the most important cause of the deterioration in conditions. The regulations have made it more difficult and more expensive for primary dealers of government securities to maintain their inventory and quote prices. The central banks' government securities purchases are also considered to have contributed to a deterioration in market liquidity. Sweden has been particularly affected, as the Riksbank has purchased a relatively large share of the outstanding stock of government securities at a time when supply has decreased.

Nominal government bonds are the central government's largest and most important borrowing channel, as this market provides the best conditions for borrowing large amounts over time at relatively favourable terms. When the borrowing requirement is low, nominal government bonds are therefore prioritised over other issuance in order to safeguard liquidity in that market. However, with the large central government budget surplus of recent years, the Debt Office has also significantly reduced this supply, which has contributed to a shortage of bonds and worsened liquidity in the market. The Debt Office still borrows on very good terms, but there is an increased risk of rising borrowing costs in the long term as a consequence of the deteriorated liquidity.

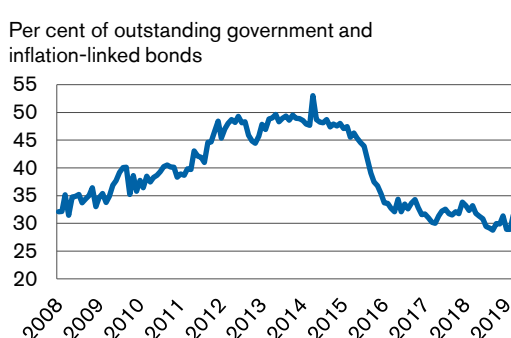
Liquidity is difficult to measure directly, especially because there is very limited access to data on prices and transactions in the secondary market for government securities. A factor that may provide some indication is turnover in the market. Figure 3 shows that turnover of Swedish (nominal) government bonds decreased in recent years. The Debt Office also conducts an annual survey in which primary dealers and investors assess liquidity in terms of volume, difference between buy and sell prices (spread) and price transparency. In the latest survey from 2018, primary dealers gave liquidity in terms of volume a higher rating than a year earlier, but it was still rated at a level considered unsatisfactory. At the same time, ownership statistics indicate that some foreign investors have left the Swedish government bond market (see Figure 4).

Figure 3. Turnover per day



Source: the Riksbank
Note: Average daily turnover of nominal government bonds over the last 12 months

Figure 4. Foreign holdings



Sources: Statistics Sweden and the Debt Office

Primary dealers and investors point to the Riksbank's bond purchases as an increasingly important explanation for the worsened liquidity. As the Riksbank has decided to continue to purchase government bonds, its holding is going to increase further in 2019 – to over half of the outstanding stock of government bonds. Even if the Riksbank's holding subsequently decreases, the purchases are a monetary policy tool that may be used again.

The regulations will also remain in place and, if the surplus target for government finances stays the same, the supply of government bonds will continue to be limited. This means that market liquidity will remain a factor that must be taken into account in the debt management.

The role of government bonds in sustainable development

Another factor that will affect future central government debt management is the financial market's role in the shift towards sustainable development. In recent years, demand for sustainable investments has grown rapidly and several countries have issued green bonds. Such bonds differ from traditional bonds in that the money borrowed will be linked to environmental and climate initiatives, the effects of which investors shall be able to monitor.

The Debt Office will also issue green bonds no later than 2020, according to a mandate set by the Government this July. The mandate stipulates that the issuance volume be determined in accordance with the objective of central government debt management and be easily accommodated within the scope of green expenditure identified in the central government budget. The issuance is to be evaluated in respect of, among other things, compatibility with effective management of the central government debt and the effects on the rest of the bond market.

The Debt Office's assessment is that there is no need for specific guidelines for green bonds and that they shall fall within the general guidelines for composition and term to maturity. Adjustments to reach the maturity target can be made with derivatives, as is done for standard nominal government bonds. However, the introduction of green bonds has significance for the distribution of the debt among different debt types.

Focus on the composition of the central government debt

The basic premises of the debt management described above bring up, above all, the issue of how the composition of the debt should be adjusted to new conditions. In 2010, the Debt Office was commissioned by the Government to analyse what proportions the different debt types should have if the debt were to become significantly larger or smaller. The Debt Office then made an assessment that, in a scenario of a much smaller debt, the share of inflation-linked bonds could need to be reduced in order to provide sufficient scope to maintain liquidity in nominal bonds.

As described above, the market for government bonds is strained and borrowing is already down to a minimum. In light of this, the Debt Office has reviewed the share of inflation-linked debt. The results of this analysis are presented in the next chapter.

The Debt Office also considers there to be grounds for a new review of the foreign currency exposure of the debt. Just prior to the guidelines for 2015, the Debt Office conducted an analysis that led to gradually decreasing the foreign currency exposure. Financial market developments in recent years indicate that the underlying conditions of that analysis may be viewed differently from a forward-looking perspective rather than historically. Therefore, the Debt Office plans to conduct a new review and intends to readdress the issue in coming proposals for debt management guidelines (read further in the chapter *Foreign currency exposure to be left unchanged*).

Target for inflation-linked debt should remain despite decrease in total debt

The analysis shows no distinct systematic differences in cost between inflation-linked and nominal borrowing. Therefore, the choice of target share for inflation-linked debt depends more on balancing various risks in order to ensure good borrowing preparedness and low cost over the long term. With a decreasing central government debt, this decision becomes primarily an operational issue of how to distribute the borrowing among different government securities. The Debt Office currently sees no reason to lower the target value for the share of inflation-linked debt in order to create additional scope for nominal government bonds. The stock of inflation-linked bonds is already expected to decrease substantially under the current guidelines. Along with decreasing foreign-currency and retail-market borrowing, this provides scope for nominal government bonds.

The Debt Office began issuing inflation-linked government bonds in 1994, and they have since been one of the more important forms of borrowing. The central government chose to issue inflation-linked bonds for several reasons. The first of these was that it was expected to lower the cost of the central government debt, as investors would be prepared to pay extra to have insurance against inflationary shocks. The fact that the central government would bear the bonds' inflation risks was also considered to lend greater credibility to the recently introduced inflation target. Such increased credibility could lower the expected cost of all central government borrowing, even in nominal instruments. The second reason was that inflation-linked bonds would contribute to increasing the diversification of the debt in terms of both lower cost variation and a broader investor base.

Today, conditions are different. The inflation target is now well established, and the importance of hedging against high inflation should have declined accordingly. Under the Swedish regulatory framework governing how pension commitments are valued and managed, the instrument also no longer fulfils the function of insuring against inflation as originally assumed. The bonds are used more for diversification in nominal portfolios than as an inflation hedge for pension liabilities.

In pace with the decline in central government debt, the significance of diversifying the debt has also diminished. If the debt is large, borrowing in inflation-linked bonds could ease the burden on the nominal government bonds market. On the other hand, if the debt is small then inflation-linked borrowing could crowd out the issuance of nominal bonds. This is because the share of inflation-linked debt can only be steered through borrowing and not with the aid of derivatives. A crowding out of nominal bonds could lead to a deterioration in liquidity in that market – the central government's largest and most important funding source. Worsened liquidity, in turn, could lead to higher cost and poorer borrowing preparedness in the long term.

In light of the change in conditions and the fact that the central government debt is expected to continue to decrease, there are grounds for a new review of the proportion of inflation-linked debt.

The section below presents an analysis of the cost-savings argument as well as the preconditions for maintaining good borrowing preparedness and low borrowing cost over the long term.

Equivalent costs for nominal and inflation-linked funding

The analysis to identify whether there is a systematic cost difference between inflation-linked and nominal borrowing is conducted under the premise that the borrowing is within the same maturity segment, which also reflects the current strategy. The evaluation is made from an ex ante perspective and is based on analysing the yields on a nominal government bond and an inflation-linked bond with the same maturity.

The yield on a nominal government bond can be divided into five parts:

1. Inflation expectations
2. Inflation risk premium to compensate for inflation uncertainty
3. Expected real rate of return
4. Risk premium to compensate for uncertainty regarding real rate of return
5. Liquidity risk premium

The yield on an inflation-linked bond does not contain the first two subcomponents, because investors are compensated for the realised inflation and the issuer thereby bears the inflation risk.

However, the yield on an inflation-linked bond is expected to contain a higher liquidity risk premium than the yield on a nominal government bond. The liquidity risk premium is the excess return that investors require to invest in an asset that is less liquid. It is reasonable to assume that inflation-linked bonds are less liquid than nominal government bonds because the inflation-linked bond market is smaller in terms of outstanding stock and the turnover is lower.

The difference between nominal interest and real interest for a certain maturity is represented as break-even inflation (BEI). This is because the interest rate differential corresponds to the rate of inflation that must be realised during the term to maturity in order for the returns on both bonds to be the same. To gain an understanding of how the market values the two alternatives, BEI is compared with inflation expectations for the same period.

If BEI is higher than expected inflation, investors are prepared to accept a lower return on the inflation-linked alternative. This implies that investors value the protection against high inflation offered by inflation-linked bonds over the advantage of the superior liquidity of nominal bonds. Accordingly, the inflation risk premium is greater than the (relative) liquidity premium. In other words, high BEI means that, compared with nominal bonds, inflation-linked bonds provide expected savings for the central government.

Conversely, if BEI is lower than market expectations of inflation, inflation-linked borrowing entails an expected additional cost for the central government. In this case, the liquidity premium is larger than the inflation risk premium. The latter can even be negative, because the risk of downside inflation surprises is considered higher than the risk of upside surprises.

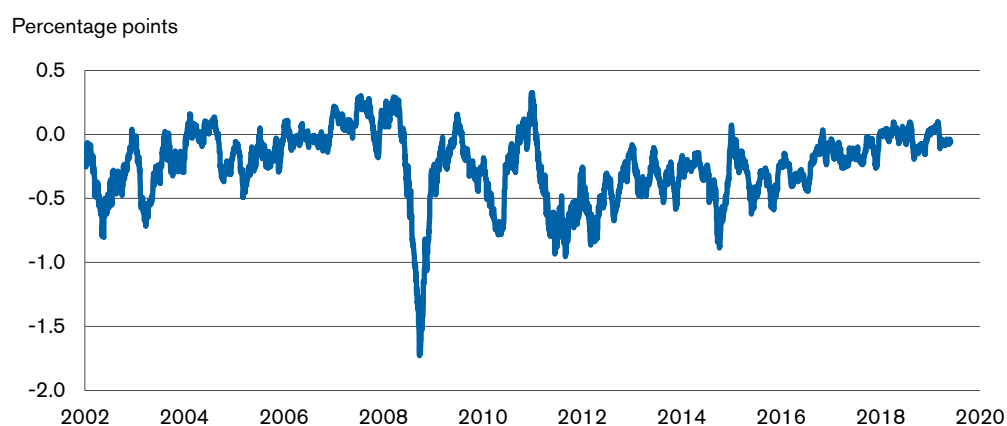
Because neither inflation expectations, the inflation risk premium, nor the liquidity risk premium are observable, a method is needed for estimating the difference in expected cost. The Debt Office has used two approaches. With the primary method, investors' inflation expectations are approximated

with the help of a survey by Kantar Sifo Prospera. To supplement this, the Debt Office has used a structural yield curve model that enables expectations and premia to be estimated on the basis of market yields on inflation-linked bonds and nominal bonds.

Results of the cost analysis

Figure 5 shows the expected savings (ex ante) in issuing inflation-linked instead of nominal bonds with the same maturity, given the inflation expectations presented in the survey. A positive value means that the expected cost is lower for inflation-linked borrowing than for nominal borrowing.

Figure 5. Expected savings from inflation-linked borrowing compared with nominal bonds



Sources: Refinitiv, Macrobond, Kantar Sifo Prospera and the Debt Office's own computations

Note: Expected savings is shown as five-year BEI minus inflation expectations, according to surveys, over the same period. BEI is based on daily nominal and real yield curves that are derived from market quotes for treasury bills, nominal and inflation-linked government bonds.

When estimated according to this method, inflation-linked borrowing would have entailed an average expected additional cost of around 0.2 percentage points since 2002. The calculations are robust in the sense that different computational assumptions have little significance for the outcome. The results indicate that both alternatives were more comparable prior to the global financial crisis of 2008 but that nominal bonds have been more advantageous to issue since the crisis. However, the expected additional cost for inflation-linked bonds has decreased trend-wise since 2012, and there has been virtually no difference over the last two years.

The results also show that investors clearly prefer nominal bonds in times of financial turbulence, such as during the global financial crisis and the European sovereign debt crisis. This confirms the Debt Office's assessment that inflation-linked bonds cannot fulfil the same function for borrowing preparedness as nominal bonds do.

The Debt Office has also employed the AACM model developed by the Federal Reserve Bank of New York¹ to calculate the same measure in order to verify the results. This model is a valuable complement because it does not rely on inflation expectations derived from a survey.

¹ Abrahams, M., Adrian, T., Crump, R.K., Moench, E., 2015. *Decomposing Real and Nominal Yield Curves*. Staff Report 570, Federal Reserve Bank of New York.

The estimations according to the AACM model confirm the trends in expected cost difference between inflation-linked and nominal borrowing above. However, the level of difference appears to be sensitive to the time period in which the analysis is performed. Therefore, the average expected additional cost for inflation-linked borrowing indicated by the primary method cannot be verified with certainty, but the results confirm that the difference in expected cost between inflation-linked and nominal borrowing is small.

It is worth emphasising that these calculations are intended to describe how inflation-linked and nominal bonds are priced in the market *ex ante*. This is to gain an understanding of whether a difference in borrowing cost is to be expected from a forward-looking perspective. However, the result does not provide a picture of what the actual cost has become *ex post*. Because inflation has turned out lower than expected over a long period following the introduction of inflation-linked bonds, inflation-linked borrowing has been favourable historically for the central government. The historical result is presented in more detail in the report on the evaluation of central government debt management that the Debt Office publishes each year.

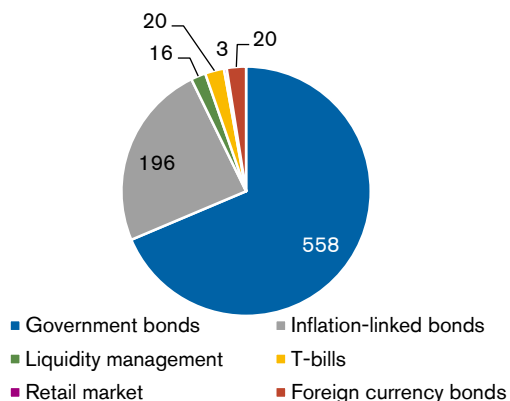
In summary, the quantitative analysis indicates that there is no major systematic cost difference between inflation-linked and nominal borrowing. Because the uncertainty in the estimates is so great in relation to the cost difference, it cannot be said conclusively that one alternative is preferable to the other. The question then becomes whether the proportion of inflation-linked debt needs to be reduced for more operational reasons – to provide increased capacity for nominal government bonds.

Capacity of nominal borrowing remains despite lower debt

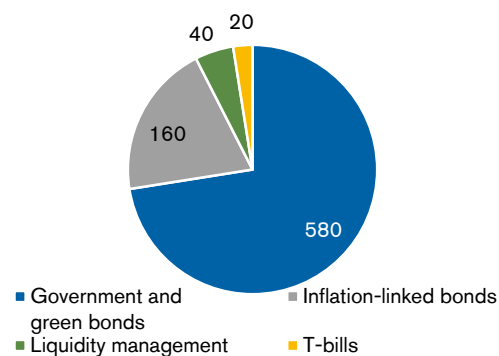
The operational analysis is based on the preconditions established by the fiscal policy framework. Given the surplus target for the general government sector, the central government debt (gross) could decrease to around SEK 1,000 billion in a few years from now (see the chapter *Basic premises of the guidelines proposal*). Provided that the on-lending to the Riksbank of SEK 200 billion remains, this would mean that the central government debt would decrease to SEK 800 billion net. With the current target for the share of inflation-linked debt at 20 per cent, this corresponds to a stock of inflation-linked bonds amounting to SEK 160 billion.

Figure 6 shows the distribution of the central government debt (net) among different instruments as at the end of August 2019 and what it would be in the scenario described above, in which borrowing in treasury bills and within liquidity management remains at the current level.

As seen in the figure, the outstanding stock of inflation-linked debt would have to decrease by SEK 36 billion in the scenario for the share to meet the current target of 20 per cent. Foreign currency bonds would also decrease. The outstanding bonds corresponding to SEK 20 billion would not have to be replaced at their maturity. As long as the Debt Office issues bonds in foreign currency on behalf of the Riksbank, no further issuance is required to maintain a presence in the international capital market. This scenario also assumes that borrowing in the retail market has ceased completely.

Figure 6. Funding as at end of August 2019

Note: The amounts refer to the funding of outstanding net debt in SEK billion divided by instrument.

Figure 7. Funding in the scenario

Note: Funding given a net debt of SEK 800 billion and an inflation-linked debt share of 20 per cent

Considering all these factors, there would be greater scope for nominal bonds (including green bonds) in the scenario than there is currently, even if the target for the share of inflation-linked debt were retained. Therefore, the Debt Office does not presently see any grounds for altering the share of inflation-linked debt but instead proposes that it remain at 20 per cent until further notice. Rather, the problem in the near term is that the inflation-linked debt is too large in relation to the target than the target value itself. The Debt Office continually analyses these conditions and will readdress this matter if adjusting the share of inflation-linked debt is merited.

A key question is how small the stock of inflation-linked bonds could be before disrupting the functioning of the market. In order to justify lowering the target value, the benefit of a larger nominal debt would have to outweigh the disadvantages of a smaller inflation-linked debt. If the market for inflation-linked debt were to cease functioning, it could be costly to rebuild in a future scenario in which there is once again a need to distribute the borrowing among several instruments. As long as there are outstanding inflation-linked bonds, there is also a commitment to investors, and it is important to preserve the confidence in the Swedish state as an issuer.

Foreign currency exposure to be left unchanged

The Debt Office proposes a new review of the foreign currency exposure of the central government debt because the underlying conditions of the previous analysis may no longer apply in periods ahead. Therefore, the Debt Office deems it prudent to propose that the foreign currency exposure be left unchanged until a review is completed. This would entail that the Debt Office would refrain from buying foreign currency for the purposes of reducing the foreign currency exposure.

In its proposed guidelines for 2015, the Debt Office presented the results of an in-depth analysis of the foreign currency exposure of the central government debt. The conclusion was that foreign currency exposure could not systematically contribute to lowering the cost of the debt. However, the analysis did show with certainty that the risk from cost variation increases. Fluctuations in the krona exchange rate cause the cost of foreign currency debt to vary significantly more than that of the krona debt. Because there are no grounds for taking on foreign exchange rate risks unless there is some element of cost savings, the Debt Office proposed gradually reducing the foreign currency exposure.

Since 2015, the Debt Office has reduced foreign currency exposure by buying foreign currency equivalent to SEK 20 billion per year. When the proposal was submitted, it was presumed that buying at this pace would spread out the exchanges over a sufficiently long period in order to avoid excessively large exchanges in periods when the krona is weak.

In retrospect, this presumption has proven to be unsuitable. The krona development in recent years has made the reduction in foreign currency exposure relatively costly. As shown in Figure 8, the krona in competitiveness-weighted terms (measured with the krona index, KIX) has been at a historically low level. The Debt Office has thereby had to pay a relatively high price to buy foreign currency in the period. In addition, the krona has developed especially weakly against the specific currencies that would need to be purchased ahead in order to lower the foreign currency exposure.

The Riksbank has also stated that the krona is priced at a low level. In its monetary policy report from July 2019, the Riksbank writes that: *the krona is weak at present and can be expected to become stronger in the period ahead as interest rates rise more in Sweden than abroad and uncertainty over global trade policy abates. However, there is significant uncertainty over how large, how rapid and how soon an appreciation of the krona could be.*

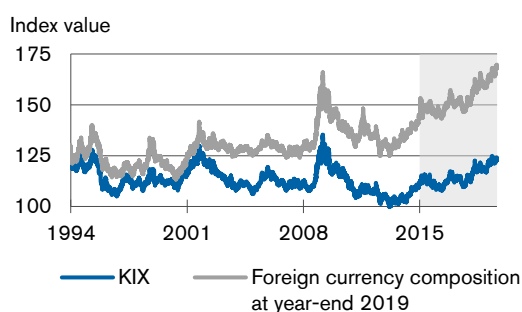
Weak krona makes reduction of currency exposure costly

It is relatively unfavourable to reduce the foreign currency exposure when the krona is weak. Conversely, it is advantageous to do so when the krona is strong. From January 2015 through August 2019, the Debt Office's foreign currency purchases for the purposes of reducing foreign currency exposure corresponded to SEK 96 billion. This can be compared with what it would have

cost to buy the same currencies, at the same pace, in different periods. Figure 9 shows such a comparison between different periods from 1994 onwards.

As shown in the last bar in the figure, the amount that the Debt Office has paid for foreign currency purchases is relatively high. In periods when the krona has been strong, such as the mid-1990s, just over SEK 83 billion would have been sufficient to achieve the same reduction.

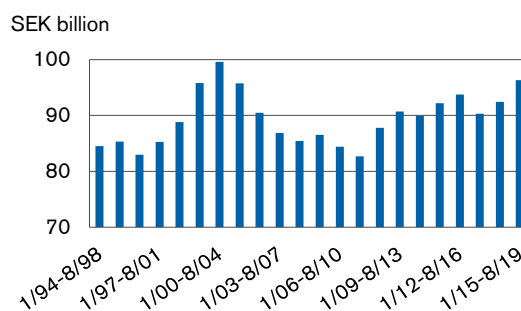
Figure 8. Development in the value of the krona



Source: Macrobond

Note: The composition of the foreign currency exposure at the end of 2019 consisted of the Swiss franc at 33% and the euro at 67%. The higher the index value, the weaker the krona is. The grey field shows the period in which the exposure has decreased.

Figure 9. Amortisation amount in kronor



Sources: Macrobond and the Debt Office's own computations

Note: The amount in kronor for buying foreign currency corresponding to the Debt Office's purchases in the period January 2015–August 2019 for the purposes of reducing the foreign currency exposure.

Foreign currency exposure shall be re-evaluated

Due to unexpected movements in both interest rates and exchange rates, there are grounds for re-evaluating the analysis of the foreign currency exposure that was conducted just prior to 2015. The underlying assumptions of that analysis may be viewed differently when looking forward compared with historically.

The value of the Swedish krona has fallen substantially and is valued at low levels. The present assessment is that the decrease in risk that a lower foreign currency exposure would entail does not justify the cost of reducing the exposure. Accordingly, there are now grounds for re-evaluating the previous standpoint. Awaiting the outcome of the review, caution shall prevail. Therefore, the Debt Office proposes to leave the foreign currency exposure unchanged. One reason for this is that a new analysis could reveal reasons for maintaining or even increasing foreign currency exposure in periods ahead. Another reason is that the risk (in terms of cost variation) of retaining the present exposure is not considered a problem. As a prudent measure, the Debt Office therefore deems it appropriate to cease buying foreign currency for the purposes of reducing foreign currency exposure until further notice.

The Debt Office proposes the following changes to the wording of the guidelines:

Present wording

12. The foreign currency exposure of the central government debt shall decrease. The decrease is to be no more than SEK 30 billion per year. The exposure shall be calculated in a way that excludes changes in the krona exchange rate.

Proposed new wording

12. The foreign currency exposure of the central government debt shall *be left unchanged*. The exposure shall be calculated in a way that excludes changes in the krona exchange rate.

Combined steering of term to maturity provides a better overview

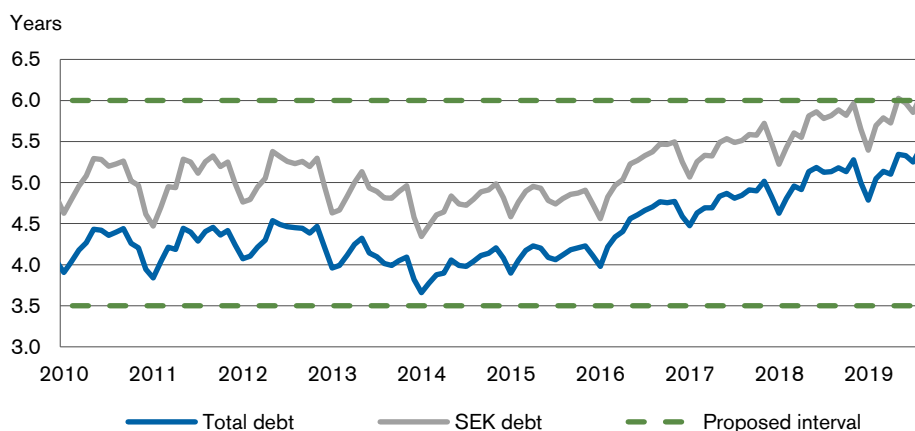
The Debt Office proposes a combined maturity target for the central government debt to provide a better overview of the overall level of risk. Merging the maturity steering would result in an interval for the overall term to maturity of 3.5–6 years for the central government debt. This interval includes the foreign currency debt, which currently has a separate target.

In recent years, several revisions have been made to the guidelines in order to refine the steering of term to maturity and facilitate the decision-making process for the Government in regard to the general level of risk – exposure – of the debt. The Debt Office is then responsible for how to conduct the borrowing and achieve the targeted level of exposure. In the guidelines for 2018, the volume target for bonds with long maturities was abandoned and replaced with a maturity interval for the entire nominal krona debt. In the 2019 guidelines, the steering of the term to maturity of inflation-linked bonds and nominal krona bonds was merged.

Now, the Debt Office is proposing an additional step in the same direction by imposing a combined term-to-maturity interval for the entire central government debt. Doing so provides a better overview of the debt's interest rate refixing risk. The merging does not entail any change of practice. Rather, the sole purpose of the merging is to enable the Government to set out a risk level for the debt as a whole.

Just as for nominal and inflation-linked debt, the Debt Office should then establish separate internal guidelines for the foreign currency debt. This is to ensure transparency in the debt management by clarifying how to treat the term to maturity of the different types of debt.

Figure 10. Term to maturity of the krona and foreign currency debt



Note: Term to maturity is expressed as Macaulay duration.

The foreign currency debt is small in relation to the krona debt and has a significantly shorter term to maturity. According to the current guidelines, the term to maturity of the foreign currency debt shall be between 0 and 1 year, compared with the interval for the krona debt, which is 4–6.5 years. When the target values for the krona and foreign currency debt are weighed together taking into account the sizes of each debt type, the term to maturity of the total debt is approximately six months shorter than for the krona debt. Hence, the proposed steering interval for the central government debt as a whole is 3.5–6 years (see Figure 10).

The Debt Office is currently also analysing whether to issue an ultra-long bond. An issuance of such a bond would fall within the proposed steering interval, given current market conditions.

The Debt Office proposes the following changes to the wording of the guidelines:

Present wording

10. The Debt Office is to establish internal guidelines based on the guidelines from the Government. These decisions are to concern the use of the mandate for position taking, the term to maturity of the nominal krona debt and the inflation-linked krona debt, the currency distribution of the foreign currency debt, and principles for market support and debt maintenance.
15. The term to maturity of the krona debt is to be between 4 and 6.5 years.
16. The Debt Office is to determine a term-to-maturity interval for the nominal krona debt, and the inflation-linked krona debt.
17. The term to maturity of the foreign currency debt is to be between 0 and 1 year.
18. The term to maturity of the types of debt may deviate temporarily from the maturities stated in points 15 and 17.

Proposed new wording

10. The Debt Office is to establish internal guidelines based on the guidelines from the Government. These decisions are to concern the use of the mandate for position taking, the term to maturity of *individual debt types*, the currency distribution of the foreign currency debt, and principles for market support and debt maintenance.
15. *The term to maturity of the central government debt is to be between 3.5 and 6 years.*
16. *The Debt Office is to determine a term-to-maturity interval for the nominal krona debt, the inflation-linked krona debt, and the foreign currency debt.*
17. *The point is removed (because the separate term to maturity for foreign currency debt, and for the other types of debt, is set in accordance with point 16).*
18. *The term to maturity of the central government debt may deviate temporarily from the maturity interval stated in point 15.*

The Swedish National Debt Office is the central government financial manager and the national resolution and deposit insurance authority. The Debt Office thereby plays an important role in the Swedish economy and the financial market.



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