RIKSGÄLDEN
SWEDISH NATIONAL DEBT OFFICE

Reg. no 2017/781
29 September 2017

Central government debt management

Proposed guidelines 2018-2021

Central government debt management

In this report the Swedish National Debt Office presents proposed guidelines for the management of the central government debt for 2018-2021. For the period from 2019 up to and including 2021 the proposals are preliminary.

Summary

The Debt Office proposes abolishing the present benchmark of SEK 70 billion for the nominal krona debt with maturities of more than twelve years and replacing it with a common maturity interval for all of the nominal krona debt. A further extension of the maturity of the nominal krona debt by 0.3 years is also proposed against the background of continuing low term premiums. Finally, in order to improve the link between the guidelines for the management of the central government debt and the evaluation of its management the Debt Office proposes wording to clarify the main cost measure in the guidelines

A new measure for the nominal krona debt with maturities of more than twelve years

As part of its guidelines work for 2018 the Debt Office has analysed the effects of merging the steering of long bonds with the maturity steering of the nominal krona debt with maturities up to twelve years. The Debt Office's conclusion is that the present benchmark of SEK 70 billion for the nominal krona debt with maturities of more than twelve years should be abolished and replaced by a common maturity interval for all nominal krona debt.

Extended maturity of the central government debt

In preparing this year's proposed guidelines the Debt Office has again analysed the importance of the maturity of the central government debt. As in last year's proposed guidelines, the Debt Office considers that the cost advantage of short-term borrowing has decreased. The Debt Office therefore proposes extending the maturity of the nominal krona debt by 0.3 years. Extending its maturity will lead to less variation in the cost of the krona debt. No changes are proposed for the other types of debt.

Wording to clarify the main cost measure in the guidelines.

In autumn 2016 the Debt Office investigated the question of whether the evaluation of the overall objective for management of the central government debt could be facilitated. In connection with this the Debt Office proposed new cost and risk measures for use in the evaluation. In order to improve the link between the guidelines for management of the central government debt and evaluation the Debt Office proposes wording to clarify that the new cost and risk measures proposed in the evaluation are also to be applied according to the guidelines

Proposed guidelines 2018-2021

Here the Debt Office presents proposed guidelines for central government debt management during 2018–2021. For the period from 2019 up to and including 2021 the proposal is for preliminary guidelines. In the cases where changes are proposed to the guidelines, the current wording is given in the left column and the proposed new wording in the right column. In order to provide an overview of the decisions that govern the management of the central government debt the relevant parts of the Budget Act (2011:203) and the Ordinance (2007:1447) containing Instructions for the National Debt Office have also been included.

The objective for the management of central government debt

1. The central government debt shall be managed in such a way as to minimise the cost of the debt in the long-term while taking risk in its management into account. The management of the debt shall be conducted within the framework of monetary policy requirements. Budget Act (2011:203).

The task of the Debt Office and the purpose of borrowing

2. The task of the Debt Office is to raise and manage loans for central government in accordance with the Budget Act (2011:203). Ordinance (2007:1447) containing Instructions for the National Debt Office.

3. Under the Budget Act (2011:203) the Debt Office may raise loans for central government in order to:

    1. finance current deficits in the central government budget and other expenditure based on decisions of the Riksdag (the Swedish Parliament);
    2. provide credits and perform guarantees decided by the Riksdag;
    3. amortise, redeem and buy back central government loans;
    4. meet the need for central government loans at different maturities in consultation with the Riksbank; and
    5. satisfy the Riksbank's need for foreign currency reserves.

The guidelines process

4. The Debt Office shall submit proposed guidelines for the management of the central government debt to the Government no later than 1 October each year. Ordinance (2007:1447) 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 (2011:203).

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 (2011:203).

7. The Debt Office shall submit information for the evaluation of the management of the central government debt to the Government no later than 22 February each year. Ordinance (2007:1447) 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 (2011:203).

9. The Debt Office shall adopt principles for the implementation of the guidelines for central government debt management adopted by the Government. Ordinance (2007:1447) containing Instructions for the National Debt Office.

10. The Debt Office shall adopt internal guidelines based on the Government's guidelines. The decisions shall concern the use of the position mandate the foreign currency distribution in the foreign currency debt and principles for market and debt commitment.

Composition of central government debt – debt shares

11. The share of inflation-linked krona debt in the central government debt is to be 20 per cent in the long term.

    The shares of the debt types in the central government debt are to be calculated as nominal amounts at the present exchange rate including accrued compensation for inflation.

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.

13. The Debt Office is to set a benchmark for the distribution of the foreign currency debt across different currencies.

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

Maturity of the central government debt

Present wording	Proposed wording
15. The maturity of the nominal krona debt for instruments with maturities of up to twelve years is to be between 2.9 and 3.9 years.	15. The maturity of the nominal krona debt is to be between *4.3* and *5.5* years.
16. For nominal krona instruments with maturities of more than twelve years, the long-term benchmark for the outstanding volume is to be SEK 70 billion.	16. *This point has been removed.*

17. The maturity of the inflation-linked krona debt is to be between 6 and 9 years.

18. The maturity of the foreign currency debt is to be between 0 and 1 year.

19. The maturity of the types of debt may deviate temporarily from the maturities given in points 15, 17 and 18.

20. Maturity is to be measured as duration.

Cost and risk

Present wording	Proposed wording
21. The trade-off between expected cost and risk is primarily to be made through the choice of the composition and maturity of the central government debt.	
22. The main cost measure is to be the average issue yield.	22. The main cost measure is to be the average issue yield. *The cost is to be calculated using the valuation principle of amortised cost value with continuous revaluation by inflation and changes in exchange rates.*
23. The main risk measure is to be the average issue yield risk.	23. The main risk measure is to be the *variation of the average issue yield*.
24. The Debt Office is to take account of refinancing risks in the management of the central government debt.	24. The Debt Office is to take account of refinancing risks in the management of the central government debt, *including by issuing instruments with more than twelve years to maturity.*

25. 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.

26. Positions are not to be included in the calculation of debt shares and maturities.

27. When taking positions, market values are to be used as the measure of the costs and risks in the management of the debt.

Market and debt commitment

28. The Debt Office is to contribute, through market and debt commitment, to the efficient functioning of the government securities market in order to achieve the long-term cost minimisation objective while taking account of risk.

29. The Debt Office is to adopt principles for market and debt commitment.

Position-taking

30. 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 in 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 and that are potentially a borrowing currency in the context of debt management.

31. Positions in foreign currency are limited to SEK 300 million, measured as daily Value-at-Risk with a 95 per cent probability. The Debt Office is to decide how much of this scope may be used at most in its operational management.

    Positions in the krona exchange rate may not exceed 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.

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

Retail market borrowing

33. The Debt Office is to contribute through retail market borrowing to reducing the costs of central government debt in the long term compared with equivalent borrowing in the institutional market.

Borrowing to meet the need for central government loans

34. The possibility of raising loans to meet the need for central government loans under Chapter 5, Section 1 of the Budget Act (2011:203) may only be used if required on account of threats to the functioning of the financial market.

    The Debt Office may have outstanding loans with a maximum nominal value of SEK 200 billion for this purpose.

35. Investment of funds raised through loans to meet the need for central government loans should be guided by the principles set out in the Preventive Government Support to Credit Institutions Act (2015:1017).

Management of funds etc.

36. The Debt Office shall place its funds, to the extent that they do not need to be used for payments, 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. Deposits may be made abroad and in foreign currency. Ordinance (2007:1447) containing Instructions for the National Debt Office.

37. The Debt Office shall cover the deficits that occur in the Government central account. Ordinance (2007:1447) containing Instructions for the National Debt Office.

38. The management of exchanges between Swedish and foreign currency (currency exchanges) shall be predictable and transparent. Ordinance (2007:1447) containing Instructions for the National Debt Office.

Consultation and collaboration

39. The Debt Office shall consult with the Riksbank on matters concerning the parts of its borrowing operations that may be assumed to be of major importance for monetary policy. Ordinance (2007:1447) containing Instructions for the National Debt Office.

40. 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 (2007:1447) containing Instructions for the National Debt Office.

41. The Debt Office should obtain the Riksbank's views on how the funds borrowed to meet the need for central government loans under the Budget Act (2011:203) are to be invested.

Evaluation

42. Evaluation of the management of the central government debt is to be carried out in qualitative terms in the light of the knowledge available at the time of the decision. Where possible, the evaluation shall also include quantitative measures.

    The evaluation shall cover five-year periods.

43. The evaluation of the operational management shall include borrowing in and the management of the different types of debt, market and debt commitment measures and management of currency exchanges.

44. The realised cost difference between inflation-linked and nominal borrowing is to be reported for inflation-linked borrowing.

45. The cost saving compared with alternative borrowing is to be reported for retail market borrowing.

46. Positions within a position mandate given are to be recorded continuously in income, and evaluated in terms of market values.

Reasons for the proposals

This section gives the background to and reasons for the Debt Office's proposed guidelines for central government debt management. The Debt Office proposes introducing a common maturity measure for all nominal krona debt. An extension of the maturity of the nominal krona debt is also proposed. No changes are proposed for the other types of debt. In order to achieve a clearer link between the guidelines and the evaluation of central government debt management the Debt Office proposes clarifying the wording concerning the cost measure of average issue yield in the guidelines by stating that the cost is to be based on the valuation principle of amortised cost value.

1. A new measure for steering the maturity of nominal krona debt

The Debt Office considers that there are some deficiencies in the maturity steering of the nominal krona debt. As part of its guidelines work for 2018 the Debt Office has therefore analysed the conditions for new and more appropriate steering.

In the current management model the duration of the nominal krona debt with maturities of up to twelve years has to be kept within a duration interval, while the nominal krona debt with maturities of more than twelve years (long bonds) has a volume target of SEK 70 billion. The volume target generates detailed steering that is a departure from the principle that characterises the rest of the guidelines, i.e. that the Government steers the trade-off between cost and risk by deciding on exposure (in this case maturity), while the Debt Office is responsible for how the borrowing is executed.

The present steering model is also blunt since it treats all bonds with maturities of more than twelve years equally while there is a great difference in terms of exposure between maturities of, for example, 15 and 50 years. The choice of maturity determines the balance between expected cost and risk. Historically, borrowing at short maturities has led to lower costs but higher risk (greater cost variation) at the same time since loan conditions are renewed more often. So, by not making any distinction between bonds of different maturities this steering model makes it more difficult for the Government to steer the trade-off between cost and risk.

There is also a technical complication in the present steering model. As the outstanding maturity of a long bond decreases it will eventually pass the maturity boundary of twelve years. This then means that the duration interval for the nominal krona debt with maturities up to twelve years needs to be adjusted.

The Government has decided that maturity is to be measured as duration (point 20 of the present guidelines). Against this background an analysis is made of the effects of merging the steering of long bonds with the other maturity steering of the nominal krona debt. To be more specific, this involves replacing the volume target of SEK 70 billion for long bonds with a common duration interval for the whole of the nominal krona debt.

The changes proposed only apply to steering. At present the Debt Office has no plans to change the issue volumes of long bonds.

1.1. Background to present steering

On 30 March 2009 the Debt Office borrowed SEK 38 billion by issuing a 30-year nominal government bond (SGB 1053) through syndication. At the time of that issue, forecasts pointed to an extensive borrowing requirement for central government and the Debt Office feared that the outstanding stocks of individual bonds could become too large. Another argument for issuing the bond was that the borrowing terms were considered to be good in the subsequent low interest rate environment during the financial crisis. The new long-term borrowing would make it possible to reduce the cost of the central government debt by the Debt Office locking into interest rates that appeared low from a long-term perspective. This was a departure from the previous strategy of borrowing at relatively short maturities in order to reduce the costs of the central government debt.

One positive side-effect pointed out at the time of the issue was that this borrowing also satisfied the need among insurance companies and other managers to extend maturity, thereby obtaining a better match between assets and liabilities in their portfolios. A further reason for issuing a longer bond was that doing so was held to contribute to reducing the refinancing risk in the management of the central government debt since borrowing was spread over more maturities.

The benchmark in force at that time for the maturity of the nominal krona debt was removed in connection with the issue of the 30-year government bond. In its proposed guidelines for 2010 the Debt Office proposed a split in maturity steering. Nominal krona debt with maturities of up to twelve years would be steered towards a maturity benchmark of three years. The remainder – which, at that time, only consisted of the recently introduced 30-year bond – would not be followed up in relation to the maturity benchmark but would instead be given a volume ceiling of SEK 60 billion. Doing so created scope for further issues of the new bond without its volume becoming too large.

The guidelines decision for 2011 raised the ceiling, at the initiative of the Government, from SEK 60 to 65 billion.

The following year the Government replaced the ceiling of SEK 65 billion with a benchmark of SEK 60 billion. In practice, this meant a clear indication from the Government that the outstanding volume of long bonds was to increase. The Government's motive was to reduce refinancing risks by spreading maturities over a longer period of time. In the same year the Government commissioned the Debt Office to review how the guidelines could take more account of refinancing risks in debt management, see section 1.2 for more information. In the light of the amended guidelines the Debt Office decided to introduce a new 20-year government bond (SGB 1056) via a syndicated switch.

In the guidelines decision for 2013 the Government raised the benchmark for long bonds, on its own initiative, by a further SEK 10 billion to SEK 70 billion. Since then the benchmark has remained at that level. The Government subsequently clarified, on the advice of the Debt Office, that the target level is to be a long-term benchmark.

1.2. Long bonds and refinancing risk

In its proposed guidelines for 2013 the Debt Office discussed in detail how refinancing risks arise and how they can be steered. The Debt Office noted that refinancing risks are to do with the consequences of concentrated maturities in the coming few years and that there is no appreciable difference between a ten-year and a 30-year bond in terms of refinancing risk. Both maturities occur beyond the time horizon that there is normally reason to take into account in an analysis of refinancing risks.

The Debt Office considered that refinancing risk should instead be handled by ensuring an even maturity profile for the bonds so that only a small part of the bond stock must be refinanced each year. In addition, small volumes should be issued regularly at auctions so as to spread refinancing over a long period of time. In this way a large portion of the bonds that mature are replaced in advance.

The Debt Office's conclusion was that it would be inappropriate to introduce any form of quantitative steering of refinancing risks in the guidelines since this risks leading to unnecessary operational restrictions that ultimately lead to higher costs.

The Government shared the Debt Office's view that it would be inappropriate to limit refinancing risks by having quantitative measures in the guidelines. Such a measure would force the Debt Office to borrow at long maturities when the borrowing requirement increases temporarily and to then buy the loans back in order to achieve the maturity profile stipulated when the borrowing requirement deceases.

The Government supported this argument by referring to experience from the period 1999–2003. During that period the maturity profile was subject to a restriction to the effect that no more than 25 per cent of the central government debt could mature in the coming twelve months. This guideline was removed in 2004 when it was noted that a specific restriction of short maturities was not an appropriate way to limit refinancing risks.

Nevertheless, the Government considered that it should be made clear that the Debt Office has to take account of refinancing risks. A new point was therefore introduced in the guidelines for 2013

(the present point 24) and given the following wording: “The Debt Office is to take account of refinancing risks in the management of central government debt”. The Debt Office was also instructed to report in its annual basis for the evaluation of central government debt management on how it had lived up to the requirement to take account of refinancing risks.

Since 2013 the Debt Office has reported various measures of refinancing risks and given an account of how it has handled these risks. Since then the Government has not found reason to make any further comment on refinancing risks.

1.3. Long borrowing from a broader perspective

It has been said in various contexts that long borrowing may have positive macroeconomic effects that are outside the Debt Office’s present remit of minimising the cost of the central government debt in the long term without the risk in the debt becoming too high. This can, for example, involve enabling better maturity matching between assets and liabilities held by pension institutions and life insurance companies or the Swedish State's long bonds acting as a benchmark for other long borrowing.

The Debt Office’s assessment is that there is no possibility of considering such matters when the authority makes financing decisions. The Budget Act provides that the central government debt shall be managed in such a way as to minimise the cost of the debt in the long-term while taking the risk in its management into account. Therefore, to the extent that other matters are to be considered, a decision by the Government and the Riksdag is probably required.

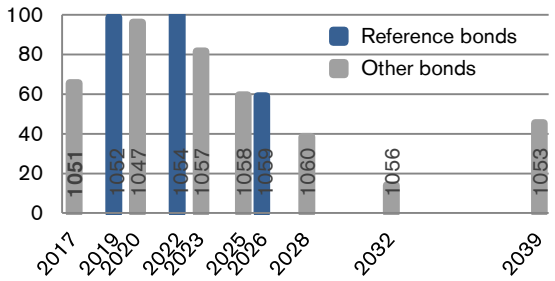
1.4 A common maturity measure for the nominal krona debt

A common maturity measure for the nominal krona debt covers all debt instruments in Swedish kronor (except for inflation-linked bonds) and all derivatives in Swedish kronor that the Debt Office has outstanding.

The total outstanding stock of nominal government bonds was SEK 659 billion on 30 June 2017. The volumes of each bond are shown in figure 1.

Figure 1 Outstanding government bonds

SEK Billion, 30 June 2017



Nominal government bonds with a maturity of more than twelve years account for nine percent, or just over SEK 59 billion, of the total stock of SEK 659 billion. The long bonds are SGB 1053 with a remaining maturity of 22 years and SGB 1056 with a remaining maturity of 15 years. In aggregate, the duration of these bonds is just under 16 years.

The maturity of the outstanding bonds is an important factor for the duration of the nominal krona debt. Its duration is also affected by the volumes of T-bills, instruments in liquidity management and the Debt Office's derivatives portfolio. The outstanding stock of T-bills was SEK 77.5 billion on 30 June 2017.

Historically the Debt Office has made extensive use of interest rate swaps to shorten duration. This can be illustrated by the outstanding volume of interest rate swaps in Swedish kronor which totalled around SEK 122 billion on 30 June 2017. However, against the background of the decisions in recent years to gradually increase the maturity of the central government debt the Debt Office has drawn down the volumes of new interest rate swaps to a minimum.

1.5. Conditions for the calculation of a new maturity interval

This section presents calculations of the duration of the nominal krona debt when long bonds are included in the maturity benchmark. The purpose is to motivate a single maturity interval that includes the whole of the nominal krona debt. The calculations cover the period 2018-2021 and are based on the Debt Office’s latest forecast of the primary central government borrowing requirement. The Debt Office has not yet made a forecast for 2019-2021. For these years a technical assumption has instead been made that the primary borrowing requirement will remain at the same level as in 2018.

The present maturity steering uses the Macaulay duration to measure maturity. This measure is affected by changes in interest rates. To capture how sensitive the measure is to changes in interest rates a range of interest rate scenarios are used in the following calculations. The base scenario builds on cut-off rates on 30 June 2017. Then the whole interest rate curve is shifted down by one percentage point and up by one and two percentage points.

In other respects the calculations have been made as realistic as possible. New ten-year government bonds are issued at intervals of about 18 months and switches are offered from the previous ten-year government bond in conjunction with each of them. Issues of the long bonds SGB 1053 and SGB 1056 have been planned at the rate of SEK 2 billion per year, which is the same level as in the existing issue plan. The volume of interest rate swaps in the calculations is SEK 5 billion per year. This is also the same level as in the current issue plan.

There is one more factor than can affect duration in the short term but that is not taken into account in the calculations. It is unexpected surpluses or deficits in the primary borrowing requirement. In such circumstances large investment or borrowing requirements that affect the duration of the nominal krona debt may arise at relatively short notice in liquidity management.

1.6. Duration in different interest rate scenarios

With the new maturity measure duration is calculated at an average of 4.8 years in 2018, given present interest rate levels, see table 1.

Table 1 Duration in different interest rate scenarios

	2018	2019	2020	2021
Current guideline	3.6	3.5	3.7	3.7
Lower interest rates -1 percentage point	5.2	5.1	5.1	5.0
Base scenario	4.8	4.7	4.7	4.5
Higher interest rates +1 percentage point	4.4	4.3	4.4	4.2
Higher interest rates +2 percentage points	4.1	4.0	4.0	3.9

As the remaining maturity of the stock of long bonds shortens, duration falls to 4.5 years in 2021. Interest rates that are 1 percentage point higher or lower add about ±0,4 years to these figures. If interest rates rise by 2 percentage points from present levels, duration falls by 0.7 years to 4.1 years in 2018.

1.7. Duration with different issue strategies in existing long bonds

If the benchmark for outstanding long bonds is abolished and replaced by a common maturity measure for the nominal krona debt, there is a need to establish what issue strategy will be applied in the future in the long segment. A strategy, which is used in the base scenario, is to maintain the present issue rate of a total of SEK 2 billion per year in SGB 1053 and SGB 1056. At the end of 2021 the volume of these bonds will then be SEK 9 billion higher than the present volume. i.e. a total of SEK 68 billion.

To shed light on the sensitivity of maturity the Debt Office has also calculated two alternative scenarios: one in which there are no issues in the long bonds at all and one in which SEK 4 billion is issued each year, i.e. a doubling of the base scenario. The results of these calculations are shown in table 2.

Table 2 Duration with different issue strategies

	2018	2019	2020	2021
Lower issue volume of long bonds	4.8	4.6	4.6	4.5
Base scenario	4.8	4.7	4.7	4.5
Higher issue volume of long bonds	4.8	4.7	4.7	4.6

1.8. Discussion

The Debt Office's calculations show that duration of the nominal krona debt will be around 4.8 years in 2018 given present interest levels. As the remaining maturity of the stock of long bonds shortens, duration falls to 4.5 years in 2021. As long as the Debt Office does not introduce a new long bond, an appropriate maturity interval ought to be able to accommodate such a mechanical decrease to some extent. This indicates that the interval should not be centred around the base scenario but should have a slightly lower focal point; 4.6 years is suggested.

There is also another fact in favour of such a choice: The probability distribution of the future development of interest rates is not likely to be symmetric around the base scenario. Higher interest rates ought to be more likely than lower and if interest rates rise, the duration of the debt falls.

As mentioned above the duration measure is affected by changes in interest rates. When the long bonds are included in the duration measure, it varies 10–20 per cent more than it does today. It may therefore be appropriate to widen the interval from 1 year to 1.2 years. With a central point at 4.6 years this means that the lower boundary of the maturity interval will be 4 years and the upper boundary will be 5.2 years. The selection of an appropriate interval has primarily been carried out with a focus on the coming 2–3 years and is based on the present issue rate in the long bonds.

1.9. Conclusion

The Debt Office proposes abolishing the volume benchmark for the nominal krona debt with maturities of more than twelve years. A common maturity measure for the nominal krona debt should be introduced instead. All else equal, this means that the present maturity interval needs to be raised from the level of 2.9–3.9 years to 4.0–5.2 years. The proposed interval is slightly wider than the present interval, which is justified by the fact that duration will vary more when the long bonds are included in the maturity measure.

The Debt Office intends to continue issuing bonds with long maturities. To underline this, the following wording is proposed as a supplement to point 24 of the present guidelines (in italics) "The Debt Office is to take account of refinancing risks in the management of the central government debt, *including by issuing instruments with more than twelve years to maturity.*"

On top of the technical increase that follows from the inclusion of long bonds in maturity steering, the Debt Office proposes an additional increase of 0.3 years against the background of continuing low term premiums, see under section 2 for more information.

2. Extended maturity of the central government debt

In preparing its proposed guidelines for 2018 the Debt Office has again analysed how the maturity of the central government debt affects its cost. This analysis confirms the conclusions presented by the Debt Office in the proposed guidelines for 2017.

The Debt Office considers that the cost advantage of short-term borrowing is currently smaller than in the past and proposes also extending the maturity of the central government debt in 2018.

2.1. Background

The overall objective of central government debt management is to minimise the cost of the debt in the long term while taking account of risk. The cost of and risk in the debt depend on its composition, and the Debt Office has the task of proposing suitable shares and maturities for the types of debt included in the central government debt

For many years the analysis made by the Debt Office as the basis for the choice of maturity assumed that there were positive term premiums. Term premiums being positive means that long interest rates are usually higher than short interest rates, and this has been true historically. So, in the past, it has been cheaper to borrow at short than at long maturities.

In its proposed guidelines for 2016 and 2017 the Debt Office showed that the advantage of short-term borrowing had decreased. The Debt Office made the assessment that the trade-off between the saving and the higher risk that short-term borrowing entails should be adjusted and recommended extending the maturity of the debt. At the same time it emphasised that the extension must take place in small steps. For 2017 the proposal was to increase the maturity interval for the nominal krona debt from 2.6–3.6 to 2-9–3.9 years. In its decision the Government followed the Debt Office's proposal.

2.2. Yield curve and term premiums[1]

The yield curve describes the maturity structure of interest rates. The curve can take many forms and its appearance varies over time. According to the expectation hypothesis, the curve slopes upwards when market participants expect rising interest rates and vice versa. But the appearance of the curve is also due to the fact that investors and borrowers can have different maturity preferences.

On the one hand, investors normally require a higher return to tie up their money for a long time

[1] *See the Debt Office's proposed guidelines for the management of the central government debt 2016–2019 for a more detailed discussion of the yield curve and term premiums.*

since uncertainty about the future grows the further ahead you look. One historically important uncertainty has been future inflation. On the other hand, certain investors are willing to pay a higher interest rate in order to secure their long-term funding. If investors in general have more of a short-term preference than borrowers, the yield curve may slope upwards even if market participants believe that rates will fall. In other words, the term premium will then be positive.

Today's interest rates thus depend both on expectations about future rates and on term premiums. But neither expectations nor premiums are directly observable, so they are hard to measure. The academic literature about term premiums is extensive and the interest rate models used to measure premiums are now advanced. Despite this it is difficult to estimate the size of term premiums with precision.

The Debt Office uses an interest rate model developed at the Federal Reserve Bank of New York.[2] The model is estimated on 1–10 year swap rates from the period 1995–2017.[3]

Figure 2 Swedish ten-year swap interest rate and term premium

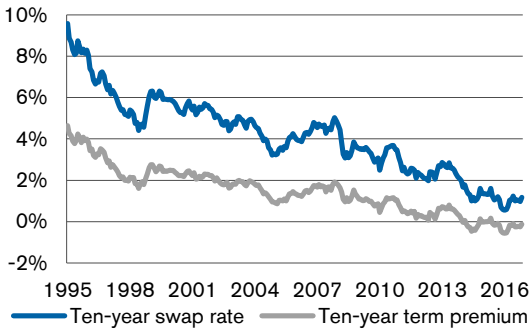


Figure 2 shows the Swedish ten-year swap interest rate and its term premium. In the latter half of the 1990s Swedish interest rates fell on account of lower inflation. As the inflation target gained credibility, uncertainty about future inflation also decreased, and this then contributed to the fall in the term premium.

In recent years the Riksbank's expansive monetary policy, which has included purchases of government bonds, has probably also contributed to the fall in term premiums. New regulations may also have played a role. Insurance companies must do more than in the past to match their long-term undertakings by investing in assets with long maturities, and this may have reduced term premiums.

Term premiums have probably also been affected by some borrowers changing their behaviour. Twenty years ago floating rate mortgages were unusual while at the beginning of 2017 they accounted for more than 70 per cent of new mortgages.[4] When borrowers demand more short-term loans, it is natural for term premiums to get lower. Future requirements concerning the long-term financing of banks may also increase the term premium in years to come.

2.3. Conclusion

Term premiums have fallen over time and now appear to be close to zero. Even if a rise in term premiums cannot be ruled out in the coming years, the Debt Office makes the assessment that the reasons for short-term borrowing have weakened and that the maturity of the central government debt should be extended.

The Debt Office proposes extending the maturity of the nominal krona debt by 0.3 years. Too substantial an extension of maturity might disturb the balance between supply and demand in the market in a way that would make long rates rise.

In the case of the inflation-linked krona debt the Debt Office is not proposing any changes in the maturity of the debt. Here it is not possible to steer maturity using interest rate swaps either, and the maturity of this debt is instead determined solely by the inflation-linked bonds issued by the Debt Office.

Nor is any extension of maturity proposed for the foreign currency debt. The Government has decided that foreign currency exposure is to decrease and the Debt Office is therefore gradually reducing this exposure. It is not appropriate to extend the maturity of the debt since this would hamper, or even delay, the

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

[3] *The model has also been estimated using interest rates on government securities with the same qualitative results. However, the time series for interest rates on government securities that the Debt Office has access to are shorter than the corresponding series for swap interest rates.*

[4] *Statistics Sweden,"SCB indicators number [SCB-indikatorer nummer] 4 2017", 3 May 2017, p 13*

reduction of the foreign currency exposure of the central government debt.

If a common maturity measure is introduced for the nominal krona debt as set out in the previous section, the following wording is proposed for the guidelines for 2018 (points 15, 17 and 18):

- The maturity of the nominal krona debt is to be between 4.3 and 5.5 years.
- The maturity of the inflation-linked krona debt is to be between 6 and 9 years.
- The maturity of the foreign currency debt is to be between 0 and 1 year.

3. Wording to clarify the main cost measure

In autumn 2016 the Debt Office addressed the question of whether the evaluation of the overall objective for the management of the central government debt could be facilitated. The background was a government commission based on results and observations from the Government Communication *Evaluation of central government borrowing and debt management 2011-2015 (Govt. comm. 2015/16:104).* The Debt Office presented its report on the commission in December 2016.[5]

3.1. New cost measure in the basis for evaluation

Briefly, the Debt Office proposed replacing the measures period cost and average issue yield in the basis for the evaluation of central government debt management with a new cost measure based on the valuation principle of amortised cost value. The new measure is based on the debt being valued at the amount borrowed on the issue date and then being revalued continuously using the issue yield, inflation and the currency exchange rate up to maturity.

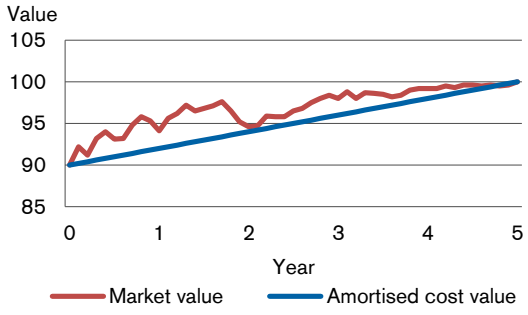
The Debt Office applies this method, which is sometimes also called the effective interest method, in its financial reporting of central government debt management. The method follows the international standard for the reporting of financial liabilities held to maturity and is common among participants with a long investment horizon.[6]

The valuation principle of amortised cost value thus means that a loan instrument is reported as the amount paid (excluding accrued interest) on the issue date and is then revalued continuously using the issue yield, see figure 3. When the period to maturity decreases the amortised cost value rises if the bond was sold at a discount (as in figure 3) and decreases if it was sold at a premium. Finally, when the instrument matures the amortised cost value is equal to the nominal amount (i.e. 100 in the present example).

The cost for a given period of time is the change in the amortised cost value (including revaluation for inflation and the currency exchange rate) plus accrued interest in the period.

This means that changes in market value due to changes in market interest rates have no impact on cost using the proposed method. In contrast, the cost is affected immediately by changes in market value due to changes in currency exchange rates and accrued inflation since the accrued cost is revalued continuously using these variables.

Figure 3 Market value and accrued cost of a nominal bond

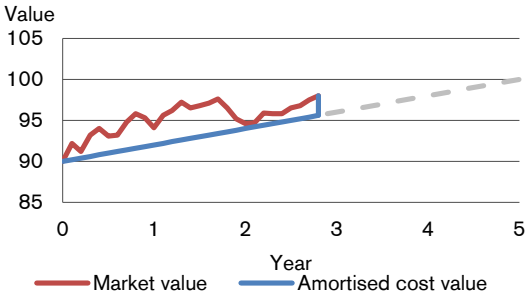


In cases of bond repurchases the Debt Office has proposed recognising the difference between the market value and the amortised cost value directly as a cost in conjunction with the purchase. This effect is illustrated in figure 4 by the vertical blue line at the time of the repurchase in year 2.

[5] *See the Debt Office's report "Report on the government commission to investigate whether the evaluation of the overall objective can be facilitated" (reg. no 2016/1345).*

[6] *The method is prescribed in, for example, IFRS/US-GAAP.*

Figure 4 Effect of repurchase with immediate recognition of cost



3.2. Present cost measure in the guidelines

In the context of the guidelines the established view has been that unrealised changes in market value should not be seen as a cost. Instead the cost of the central government should be determined on the basis of the interest rate that applied on the issue date plus the outcome of changes in inflation and currency exchange rates.[7] The reason is that management of the central government debt should be viewed from a long-term perspective and that the Debt Office has the strategy of not trading its bonds actively and of generally holding them to maturity instead.

Up to now this perspective has been transformed in the guidelines into a cost measure called average issue yield. This measure should not be confused with the measure average issue yield reported by the Debt Office in the basis for evaluation of central government debt management. The latter measure only measures the interest component of the total cost and does so in the form of a snapshot.

The fact that the evaluation measure average issue yield and the guideline measure average issue yield do not mean the same has created an unnecessary lack of clarity. This could be remedied by more precise wording about what cost measure is used in the guidelines.

3.3. Conclusion

The naming of the two cost measures used historically in guideline and evaluation contexts has led to an unfortunate confusion regarding terms.

In order to increase clarity and strengthen the link between the guidelines for the management of the central government debt and the evaluation of that management the Debt Office therefore proposes clarifying that the new cost and risk measures proposed in the evaluation are also to be applied in the guidelines. This means replacing the present text that the main cost measure is to be the average issue yield and that the main risk measure is to be the average issue yield risk (points 22 and 23) with new wording in the guidelines that clarifies the link to the evaluation. The following new wording is proposed:

- The main cost measure is to be the average issue yield. The cost is to be calculated using the valuation principle of amortised cost value with continuous revaluation by inflation and exchange rate changes.
- The main risk measure is to be the variation of the average issue yield.

[7] *This perspective is wholly analogous to the cost measure proposed in the evaluation.*

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