RIKSGÄLDEN
SWEDISH NATIONAL DEBT OFFICE

2022-09-28

Central government debt management

Proposed guidelines 2023–2026

Reg.no 2022/391

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. The central government debt shall 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 thereafter 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 two years.

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

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Summary

- The Debt Office has concluded a review of the foreign currency exposure in the composition of the central government debt and is proposing that the foreign currency exposure be phased out.
- The foreign currency exposure of the central government debt should be phased out because it creates a higher risk without providing systematic cost advantages. There are also no operational reasons for having some foreign currency exposure.
- The Debt Office proposes phasing out the foreign currency exposure over four years, which entails an average reduction of approximately SEK 25 billion per year.
- Starting in 2027, the target level for the foreign currency exposure is to be zero. The actual exposure will continue to vary at around the target level as a result of the Debt Office's day-to-day management of currency flows and currency risks.
- A minor alteration proposed for the guidelines is to remove the point on the evaluation of retail market borrowing because the final lottery bond matured in 2021.
- The Debt Office also proposes that the Government should consider allowing the Debt Office to submit proposed guidelines based on comprehensive analyses every two years – and to only propose limited updates to the guidelines in the time in between. This would free up resources to enable more in-depth analysis.

Proposed Guidelines 2023–2026

Below are the Debt Office's proposed guidelines for central government debt management in 2023–2026. For the years 2024–2026, the proposed guidelines are preliminary. Where there are proposed revisions to the current guidelines, these are stated in bold as an introductory text to the point. Relevant parts of the Budget Act (2011:203) and the Ordinance Containing Instructions for the National Debt Office (2007:1447) are also included to provide an overview of the framework governing the debt management. The grounds for the changes that the Debt Office proposes are described in the next chapter.

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 over 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. (Chapter 5, Section 5 of the Budget Act)

Debt Office's task and purposes of the borrowing

2. The task of the Debt Office is to raise and manage loans for central government in accordance with the Budget Act. (Section 2 of the Ordinance Containing Instructions for the National Debt Office)

3. 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 (the Swedish Parliament)
   - provide such credits 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.

   (Chapter 5, Section 1 of the Budget Act)

Guidelines process

4. The Debt Office shall submit proposed guidelines for central government debt management to the Government by 1 October each year. (Section 26 f of the Ordinance containing Instructions for the National Debt Office)

5. The Government shall give the Riksbank the opportunity to state an opinion on the Debt Office's proposed guidelines. (Chapter 5, Section 6 of the Budget Act)

6. The Government shall adopt guidelines for the Debt Office's management of the central government debt by 15 November each year. (Chapter 5, Section 6 of the Budget Act)

7. The Debt Office shall submit information for the evaluation of the management of the central government debt to the Government by 22 February each year. (Section 26 f of the Ordinance containing Instructions for the National Debt Office)

8. The Government shall evaluate the management of the central government debt every two years. The evaluation shall be presented to the Riksdag by 25 April (Chapter 5, Section 7 of the Budget Act)

9. The Debt Office shall adopt principles for the implementation of the guidelines for central government debt management adopted by the Government. (Section 15 of the Ordinance containing Instructions for the National Debt Office)

10. The Debt Office is to adopt internal guidelines based on the Government's guidelines. 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 central government debt – debt shares

11. The share of inflation-linked krona debt is to be 20 per cent of the central government debt over 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 inflation compensation.

12. **Proposed new wording:** The foreign currency exposure of the central government debt is to be gradually phased out and attain the target value of zero as of 2027. The foreign currency exposure may, however, vary as a result of the Debt Office making currency exchanges in accordance with point 35.

    Present wording: The foreign currency exposure of the central government debt is to be unchanged. The exposure is to be calculated in a way that excludes changes in the krona exchange rate. However, the foreign currency exposure is to be allowed to vary as a result of the Debt Office making currency exchanges in accordance with point 35.

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 consist of nominal krona debt.

Term to maturity of central government debt

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 term to maturity of the central government debt may deviate temporarily from the maturity interval stated in point 15.

18. Term to maturity is to be measured as duration.

Cost and risk

19. The trade-off between expected cost and risk is to be made primarily through the choice of the composition and term to maturity of the central government debt.

20. The main cost measure is to be the average issue yield. The cost is to be calculated using the valuation principle of amortised cost taking accrued inflation and exchange rate changes into account.

21. The main risk measure is to be the variation of the average issue yield.

22. 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.

23. Borrowing is to be conducted in a way that ensures a broad investor base and diversification in a range of funding currencies in order to maintain good borrowing preparedness.

24. Positions are not to be included in the calculation of debt shares and term to maturity.

25. 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

26. 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.

27. The Debt Office is to adopt principles for market support and debt maintenance.

Position-taking

28. 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.

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

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

30. Positions in the krona exchange rate are limited to a maximum of SEK 7.5 billion. When the positions are built up or phased out, 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 its day-to-day management in connection with exchanges between the krona and other currencies. This volume is to be of a limited size and the positions do not need to be announced in advance.

Borrowing to meet need for government loans

31. The possibility of raising loans to meet the need for government loans under Chapter 5, Section 1 of the Budget Act may only be used if necessary in the event of a threat 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.

32. Investment of funds raised through loans to meet the need for 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.

33. The Debt Office shall place its funds, to the extent that they are not needed for outgoing 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. Investments may be made abroad and in foreign currency (Section 5 of the Ordinance containing Instructions for the National Debt Office).

34. The Debt Office shall cover the deficits that occur in the government central account (Section 7 of the Ordinance containing Instructions for the National Debt Office).

35. The management of exchanges between Swedish and foreign currency (currency exchanges) is to be predictable and transparent. (Section 6 of the Ordinance containing Instructions for the National Debt Office)

Consultation and collaboration

36. The Debt Office shall consult with the Riksbank on matters concerning the components of its borrowing operations that may be assumed to be of significant importance for monetary policy. (Section 12 of the Ordinance containing Instructions for the National Debt Office)

37. 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. (Section 11 of the Ordinance containing Instructions for the National Debt Office)

38. The Debt Office should obtain the Riksbank's views on how the funds borrowed to meet the need for central government loans are to be invested.

Evaluation

39. 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 is to also include quantitative measures. The evaluation is to cover five-year periods.

40. The evaluation of the operational management is to include borrowing in and management of the different types of debt, market support and debt maintenance measures, and management of currency exchanges.

41. For inflation-linked borrowing, the realised cost difference between inflation-linked and nominal borrowing is to be reported.

42. **Removed point:** For retail market borrowing, the cost savings compared with alternative borrowing is to be reported.

42. **Renumbered point from 43 to 42:** Gains and losses are to be recorded continuously for holdings within a position-taking mandate and evaluated in terms of market values.

43. **New point:** The phasing out of the foreign currency exposure of the central government debt is to be evaluated in relation to a steady pace of reduction over the period from the beginning of 2023 to the end of 2026. The evaluation is to follow the same principles that apply for positions within the position-

taking mandate (point 42). Only transactions that are carried out for the purposes of phasing out the foreign currency exposure of the central government debt are to be included in the evaluation.

The foreign currency exposure should be phased out

The foreign currency exposure of the central government debt should be discontinued because it creates a higher risk without providing systematic cost advantages. The Debt Office proposes gradually phasing out the foreign currency exposure over four years – which, based on the current exchange rate, entails an average reduction of approximately SEK 25 billion per year. A minor proposed change to the guidelines is to also remove the point on reporting the results of retail market borrowing.

The point on the foreign currency exposure of the central government debt was changed in accordance with the Debt Office's proposal in the guidelines that took effect in 2020: to leave the exposure unchanged, from it having previously been reduced. This was done because the Debt Office intended to conduct an evaluation involving both updating the analysis behind the 2015 decision to begin reducing the foreign currency exposure as well as analysing whether any structural changes had occurred that would merit reconsidering the decision.

As part of the work with this year's proposed guidelines, the Debt Office has conducted analyses in connection with establishing both *a long-term target value for the foreign currency exposure* and *an appropriate course of action for reaching the target level.* The first area of analysis addresses whether or not there are strategic reasons for having foreign currency exposure as part of the debt portfolio over time. Such reasons might be based on a trade-off between cost and risk or other considerations such as borrowing preparedness. The other area of analysis mainly pertains to tactical considerations with the aim of addressing the issue of how to best approach reaching the long-term target level.[1]

The conclusion of the analyses is that there are no grounds for having exposure to foreign currency in the central government debt and that it should therefore be discontinued. The Debt Office proposes gradually phasing out the exposure over four years, from the current level of just over SEK 100 billion, which corresponds to approximately 8 per cent of the total debt. In practice, phasing out the foreign currency exposure entails that the Debt Office will buy foreign currency against Swedish currency.

[1] Sub-analyses are described in more detail in separate memoranda (Reg. no. 2022/391).

The foreign currency exposure should be directed towards a target level of zero

The results of the analyses in connection with the long-term target level show that the foreign currency exposure does not provide any systematic savings, while the risk it brings in the form of cost variation increases. From a strategic perspective, the conclusion of these analyses, which are based on historical data, is therefore that the target level should be zero. However, even if the target level for the foreign currency exposure is zero, the actual currency exposure of the central government debt will continue to vary at around the target level, as a result of the Debt Office's management of currency flows and currency risks in its day-to-day operations.

The Debt Office carried out an analysis effort over several years that formed the basis of the decision to start reducing the foreign currency exposure in 2015. The analysis of the systematic cost aspect was subsequently updated in the proposed guidelines for 2021, and the results were consistent with previous results. In this year's work with the guidelines, the Debt Office has quality-assured and further expanded the analysis by extending the evaluation period until the end of 2021. With updated data, the previous results are still confirmed (see the box below). This applies even when the period after the 2008/2009 global financial crisis is looked at separately, which indicates that any structural changes during recent years do not have an influence on the conclusions.

The Debt Office's assessment is that there are also no operational reasons for having foreign currency exposure. Achieving the target level for the exposure is done by carrying out derivative transactions and is therefore separate from the actual funding (borrowing). This means that the Debt Office can borrow in foreign currency in the international capital market – and in doing so maintain good borrowing preparedness – regardless of what the target level for the currency exposure is. The central government's liquidity in both Swedish kronor and foreign currency can also be managed as previously.

Analysis results

Expanded analysis of cost advantage confirms results

The analysis of the cost advantage of having foreign currency exposure is based on market quotations of exchange rates for spot and forward transactions. The cost advantage for an individual month can be described using the following equation:

$$\text{Cost advantage } \mathrm{l}_{t,t+1}^{k} = \frac{F_t^k - S_{t+1}^k}{F_t^k} = \underbrace{\underbrace{\frac{i_t - i_t^k}{1+i_t}}_{\text{Interest rate differential}} - \underbrace{\frac{z_t^k}{1+i_t}}_{\text{CCS spread}}}_{\text{Carry}} + \underbrace{\frac{S_t^k - S_{t+1}^k}{F_t^k}}_{\text{Exchange rate movement}}$$

in which F_t^k is the forward exchange rate at the beginning of the month, S_{t+1}^k is the spot exchange rate at the end of the month, the index *t* represents the point in time, and the index k represents a specific foreign currency. Both spot and forward exchange rates are given as the price in Swedish kronor for a unit of foreign currency.

The cost advantage can be divided into three parts. The first is the *interest rate differential*, where i_t represents the Swedish interest rate, and i_t^k the foreign rate, at the point in time *t*. The second part, which is designated the *cross currency swap spread* (CCS spread), z_t^k, entails a premium on the foreign interest rate to achieve what is called covered interest rate parity.[2] The last part is *exchange rate movement*, where the change in exchange rate during the month is seen in relation to the forward exchange rate.

A cost advantage from exposure to a certain currency can arise when the so-called uncovered interest rate parity is not achieved.[3] This is the case when what is usually called *carry* – the interest rate differential plus the CCS spread – is not fully counteracted by an exchange rate movement. In order to create the conditions for such a cost advantage from exposure to currency *k*, the implicit short-term interest rate, which is determined by $i_t^k + z_t^k$, must be lower than the Swedish short-term rate.

The table on the next page presents the cost advantage for a number of individual currencies and a portfolio with a static currency composition. Panel A shows the results from the proposed guidelines for 2021–2024. This demonstrates that only the exposure to the Japanese yen (JPY) has a positive average cost advantage, but that it is not statistically significant. Exposures to other currencies show negative averages, where the New Zealand dollar (NZD) is significantly divergent from zero. Panel B shows the results based on extended data. The conclusions drawn from this analysis are the same. Even when the 2010–2021 period after the financial crisis is looked at separately in panel C, it is apparent that there is no systematic cost advantage to foreign currency exposure.

[2] The covered interest rate parity is described by the following analogy: $1 + i_t^k + z_t^k = \frac{S_t^k}{F_t^k}(1 + i_t)$.

[3] The uncovered interest rate parity is described by the following analogy: $1 + i_t^k + z_t^k = \frac{S_t^k}{E(S_{t+1}^k)}(1 + i_t)$.

Table 1. Historical cost advantage

	A. Proposed guidelines ahead of 2021 Period: 1993-2019				B. Updated analysis Period: 1993-2021				C. Updated analysis Period: 2010-2021			
		Confidence interval				*Confidence interval*				Confidence interval		
Currency	**advantage**	**2.5%**	**97.5%**	**St. dev.**	**advantage**	**2.5%**	**97.5 %**	**St. dev.**	**advantage**	**2.5%**	**97.5%**	**St. dev.**
PY	0.2%	5.5%	5.8%	14.2%	0.4%	4.8%	5.7%	13.8%	-0.4%	-7.5%	6.6%	11.1%
EUR	-0.3%	2.8%	2.2%	6.3%	-0.2%	2.5%	2.1%	6.1%	0.3%	3.1%	3.7%	5.4%
Portfolio	-0.6%	3.4%	2.1%	7.0%	-0.5%	3.1%	2.1%	6.8%	-0.8%	4.1%	2.4%	5.1%
CHF	-1.0%	4.4%	2.3%	8.4%	-1.0%	4.2%	2.1%	8.2%	-2.5%	5.8%	0.9%	5.2%
NOK	-1.2%	4.0%	1.6%	7.1%	-1.0%	3.8%	1.7%	7.2%	0.3%	4.0%	4.6%	6.8%
CAD	-1.4%	5.5%	2.6%	10.2%	-1.4%	5.2%	2.5%	10.2%	-1.3%	6.4%	3.9%	8.1%
GBP	-1.5%	4.7%	1.7%	8.2%	-1.4%	4.6%	1.7%	8.2%	-1.1%	5.7%	3.6%	7.4%
USD	-1.6%	6.4%	3.2%	12.2%	-1.5%	6.1%	3.1%	12.1%	-3.0%	9.1%	3.1%	9.6%
AUD	-3.3%	7.0%	0.3%	9.2%	-3.2%	6.6%	0.2%	8.9%	-2.7%	7.4%	1.9%	7.3%
NZD	-4.9%	8.3%	-1.6%	8.5%	-4.6%	7.8%	-1.4%	8.4%	-4.0%	8.3%	0.2%	6.7%

Note: The portfolio consists of: 45% EUR, 20% CHF, 15% JPY, 10% USD, 5% CAD, and 5% GBP. advantage refers to the average cost advantage, confidence interval refers to 95% confidence interval for the average cost advantage based on annual observations, and St. dev.refers to standard deviation of annual cost advantage.

In addition to the above analysis, the proposed guidelines for 2021–2024 also presented an evaluation of an assemblage of portfolios with dynamic currency composition.[4] The results of, and conclusions from, the evaluation of the dynamic portfolios remain consistent even when the data are updated and the period after the financial crisis is taken into account.

Altogether, the updated analysis confirms the results and conclusions that were presented in previous proposed guidelines. Further, the analysis shows that there are no grounds for reconsidering these conclusions when the later period following the financial crisis is taken into account separately. The latter is an indication that insofar as structural changes have occurred, they do not provide a reason to retain the foreign currency exposure.

Phasing out over set period of time is appropriate

On the basis of the conclusion that the target level for the foreign currency exposure of the central government debt should be zero, the next issue to address is how to best transition from the current level to the target level while taking account of the cost and risk.

[4] Portfolios with dynamic foreign currency composition are intended to take advantage of variation in terms of both interest rate differential and foreign currency development. The composition of the portfolio is adapted dynamically to prevailing market conditions. More information about these portfolios can be found in Central government debt management – proposed guidelines 2021–2024, pp. 16-17.

The basis of the proposal to discontinue the foreign currency exposure is that exchange rates are volatile and the exposure thereby causes increased variation in the cost of the central government debt at the same time as it does not contribute to systematically (over time) reducing the cost. However, the volatility means that the currency exposure can entail both reductions and increases in costs during the limited period in which the exposure is phased out, depending on whether the krona becomes weaker or stronger. The Debt Office has therefore analysed the cost and risk for different courses of action and periods of time for phasing out the exposure.

Which approach becomes preferable will depend on how the exchange rate of the Swedish krona develops over time. Since it is exceedingly difficult to forecast trends for the Swedish krona rate, the analysis is based on various exchange rate scenarios. In a scenario in which we assume that the krona tends to return to its historical average, the results show that a protracted phasing out – at a slow steady pace or at a dynamic pace based on an assessment of the krona's value – is advantageous. A lengthy phase-out is, however, associated with significant risks if the krona rate is instead assumed to follow a random development with no trend, or a historical trend. The trade-off between potential cost advantage and risk speaks in favour of phasing out at a steady pace for a limited period (see the box on the next page).

The analysis has also included assurance that the selected approach for the phasing out does not risk affecting the krona rate. In addition, in accordance with the instructions for the Debt Office, the agency is to manage currency exchanges in a predictable and transparent manner.

Phasing out over four years provides good balance between cost and risk

The Debt Office proposes phasing out the foreign currency exposure from the beginning of 2023 until the end of 2026, based on the results of the analysis that are presented in the box on the next page. The Debt Office aims to achieve a steady pace for phasing out that is equivalent to SEK 25 per year. At the same time, the proposed wording of guideline point (12) gives the agency the possibility to adjust the pace within the stated period. The phasing out of the currency exposure should be evaluated in relation to a completely steady (uniform) pace – which is proposed in a new guideline point.

Phasing out at a pace of SEK 25 per year corresponds to an average of just over SEK 2 billion in foreign currency purchases per month. This can be compared with the Riksbank's foreign currency purchases initiated during 2021 in connection with the transition to a self-financed foreign exchange reserve, the initial pace of which was SEK 5.5 billion per month and subsequently increased to SEK 11.6 billion. The Debt Office's assessment was that the initial pace would prove to have a very negligible effect on the krona rate, which was later confirmed by an evaluation conducted ahead of the decision to raise the ceiling.[5]

Thus, foreign currency purchases of just over SEK 2 billion per month to discontinue the currency exposure of the central government debt should not come remotely close to levels that risk affecting the krona rate. The Debt Office's analysis of the conditions in the foreign exchange market[6] and the agency's own experience from currency exchanges also support this conclusion.

Analysis results

Analysis of pace of reduction, with example calculations

Here, we use an example calculation to illustrate the trade-off between potential cost advantage and risk in connection with the length of the phase-out period. The example is based on a scenario analysis in which the phasing out is evaluated with the aid of 100,000 simulations of exchange rate development over 25 years. To simplify the analysis, the foreign currency exposure is assumed to consist only of exposure to the euro. The actual currency exposure consists of several currencies with an emphasis on the euro and the Swiss franc.[7]

The scenarios are based on three approaches with different simulations for the development of the krona rate. The first uses an assumption that the exchange rate has a tendency to revert to its average historical value (*mean reversion*). In the second approach, it is assumed that changes in the exchange rate are random and not part of a trend (*random walk)*. The last approach is based on simulations in which exchange rate changes are obtained by randomly pulling up historical outcomes (*bootstrap*). The figure on the next page shows the average outcome and 90 percent confidence intervals for the three different assumptions and the National Institute of Economic Research's (NIER) forecast for the development of the krona.

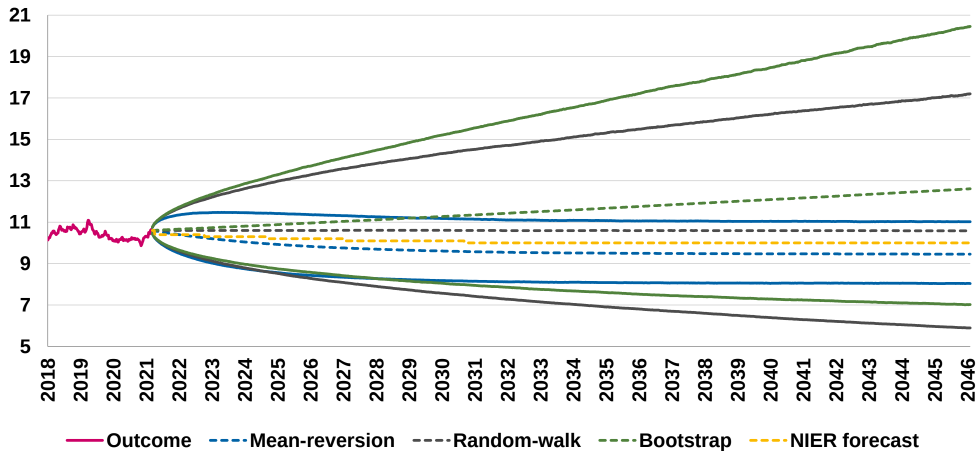
[5] The Riksbank's basis for decision (in Swedish): https://www.riksbank.se/globalassets/media/nyheter--pressmeddelanden/pressmeddelanden/2022/bilagor/220203/beslutsunderlag-overgangen-till-en-egenfinansierad-valutareserv.pdf

[6] See the analysis in the memorandum: Upper limit for the pace of reducing the foreign currency exposure (Reg. no. 2022/391).

[7] On December 30 2021, the euro and the Swiss franc made up 68 and 31 per cent of the foreign currency exposure, respectively.

Figure 1. Simulated outcomes and NIER's forecast for krona per euro

Exchange rate



Note: The figure shows average foreign currency exchange rates (dashed line) and 90 percent confidence intervals (solid lines) for 100,000 simulations based on mean reversion, random walk, and bootstrap approaches. The starting point for the simulations is March 2022. NIER's forecast extends to December 2031, and for the subsequent years the forecast's terminal value is given.

The three approaches lead to fundamentally different exchange rate developments during the simulation period: one in which the krona strengthens on average against the euro, one in which the value is unchanged, and one in which the krona continually becomes weaker. NIER's forecast – which is associated with a strengthening of the krona against the euro – falls between the average exchange rate for mean reversion and random walk.

Another distinct difference is the sample space. Random walk and bootstrap have significantly wider sample spaces, which affects the risks. Therefore, to obtain a comprehensive picture of the costs and risks linked to different courses of action, it is necessary to evaluate the phasing out in every one of the scenarios.

The table on the next page shows the cost advantage and phase-out time for different levels of a steady pace of phasing out – from SEK 10 billion to SEK 40 billion per year.[8] For the cost advantage, both the average of the sum of simulations for the respective approaches and the average of the 5 percent of the simulations with the smallest cost advantage are shown. The latter is a well-established measure of risk, known as Conditional Value at risk (CVaR).Time in the table refers to the average phase-out time for all simulations. The entire foreign currency exposure is assumed to be to the euro and correspond to SEK 100 billion and the phasing out in the example is done from the beginning of March 2022 (which coincides with the start of NIER's forecast).

[8] Cost advantage is calculated as the size of the foreign currency exposure minus the total amortisation amount in kronor for reducing the currency exposure to zero.

Table 2. Cost advantages in kronor and phase-out time according to simulation results

SEK million and year

	A. Mean reversion			B. Random walk			C. Bootstrap			D. NIER forecast	
	Cost advantage		Time	Cost advantage		Time	Cost advantage		Time	Cost advantage	Time
Pace	Average	CVaR5	Average	Average	CVaR5	Average	Average	CVaR5	Average		
10	6.8	-4.7	9.4	0.0	-29.6	10.0	-3.7	-36.0	10.4	3.7	9.7
15	5.4	-6.3	6.3	0.0	-23.4	6.7	-2.4	-27.0	6.9	3.1	6.5
20	4.5	-7.0	4.8	0.0	-19.9	5.0	-1.8	-22.4	5.1	2.8	4.9
25	3.8	-7.4	3.9	0.0	-17.5	4.0	-1.4	-19.4	4.1	2.5	3.9
30	3.3	-7.5	3.3	0.0	-15.8	3.4	-1.2	-17.3	3.4	2.3	3.3
35	3.0	-7.5	2.8	0.0	-14.5	2.9	-1.0	-15.8	2.9	2.3	2.8
40	2.7	-7.4	2.5	0.0	-13.5	2.5	-0.9	-14.6	2.6	2.2	2.5

Note: The currency exposure is assumed to consist of euro, and the starting point for the simulations is March 2022. The exchange rates follow a log-normal distribution. The calculations are based on the assumption that the interest rate differential between Sweden and the euro area is zero, which causes the cost to be entirely driven by exchange rate changes. The mean reversion process in panel A has a half-life of three years, and the neutral level is the historical average exchange rate, calculated from 1999 onwards. The volatility for the random-walk process in panel B corresponds to what was observed for the period from January 1999 to February 2022. The bootstrap approach in panel C is, for every period (week), obtained by randomly pulling up a historical exchange rate development with replacement.

The results show the trade-off between potential cost advantage and risk related to the length of the phase-out period, where a shorter phase-out period leads to reduced risk. A longer period with a lower phase-out pace per year is associated with a cost advantage if the krona's future development heads in the direction of the historical mean (panel A) or follows NIER's forecast (panel D). On the other hand, the $CVaR_5$-measure shows that a longer phase-out period is associated with significant risks if the krona's development is completely random (panel B) or follows the historical trend (panel C).

In addition to the steady paces of phasing out that are presented above, a dynamic pace has also been evaluated where the phase-out period is allowed to vary. The basic premise of the latter is to reduce the pace when the krona rate exceeds the historical average (is assumed to be undervalued) and increase the pace when the krona rate falls below the historical average (is assumed to be overvalued). A dynamic pace according to this arrangement is associated with a cost advantage when the krona's future development heads towards the historical mean (panel A) or follows NIER's forecast (panel D). A disadvantage is, however, that the phase-out period can be prolonged and involve significant risks if the krona's development is random (panel B) or follows historical outcomes (panel C). With a steady phasing out over a limited period, the risk of higher costs decreases.

Altogether, the analysis shows that a slower phasing out is associated with significant risks if the krona develops according to random walk or the historical trend; at the same time, a more rapid phasing out leads to a lesser cost advantage when the krona develops according to mean reversion or NIER's forecast. The Debt

Office's assessment is that the proposed ceiling balances these risks against a potential cost advantage.

Guidelines for target and how the phasing out is evaluated

Based on the analysis and the arguments presented above, the Debt Office proposes the following wording of the guideline point on the foreign currency exposure (12) and a new point on how the phasing out is to be evaluated (43).

> 12. The foreign currency exposure of the central government debt is to be gradually phased out and attain the target value of zero as of 2027. The foreign currency exposure may, however, vary as a result of the Debt Office making currency exchanges in accordance with point 35.
>
> 43. The phasing out of the foreign currency exposure of the central government debt is to be evaluated in relation to a steady pace of reduction over the period from the beginning of 2023 to the end of 2026. The evaluation is to follow the same principles that apply for positions within the position-taking mandate (point 42). Only transactions that are carried out for the purposes of phasing out the foreign currency exposure of the central government debt are to be included in the evaluation.

No more reporting on retail market borrowing

The Debt Office proposes that the current point 42 on borrowing in the retail market be removed because the final lottery bond matured in December 2021. As neither the National Debt Savings nor lottery bonds remain as savings products directed at the retail market, it is no longer relevant to report any results regarding retail market borrowing.

The decision to stop new subscriptions for the National Debt Savings product with fixed interest was made in October 2012, and the already subscribed accounts remained until their maturity in December 2020. In May 2013, the Debt Office decided that the National Debt Savings with floating interest would also be discontinued. Starting in December 2014, deposits and new subscriptions were no longer accepted, and the money was repaid during November and December 2015.

The decision to discontinue issuing lottery bonds was made in 2018, after issuance of these bonds had been on hold since 2016. The Debt Office's assessment was that lottery bonds were no longer able to fulfil the objective of reducing the cost of the central government debt, compared with borrowing in the institutional market. The last outstanding lottery bond matured in December 2021.

More comprehensive proposals every two years

The Debt Office also proposes that the Government consider allowing the agency to submit proposed guidelines based on comprehensive analyses every two years – and to only propose limited updates to the guidelines in the time in between. This would free up resources to enable the analysis required to produce more a comprehensively supported basis for decisions.

Under the current procedure, the Debt Office is to submit proposed guidelines for managing the central government debt to the Government every year by 1 October. Thereafter, the Riksbank is given the opportunity to provide an opinion before the Government decides on the guidelines by 15 November. Even though the guidelines are decided on annually, they are designed to minimise the cost of the central government debt over the long term while taking account of the risks involved in its management.

In 2021, the Debt Office surveyed the process of the annual proposed guidelines and concluded that a longer timespan between the proposals would free up resources, enable a more fundamental basis for decisions, and clarify the guidelines' long-term perspective. A longer timespan could be achieved through a practice whereby the Debt Office proposes limited updates every two years and also reviews the direction, performs in-depth analysis, and – if there are grounds for doing so – proposes strategic changes every two years.

The more extensively analysed proposed guidelines could then be presented the year after the evaluations from the Swedish National Financial Management Authority (ESV), the Government, and the Riksdag. This would give the Debt Office time to conduct more exhaustive analysis pertaining to the central government debt's long-term management and issues that emerge through the evaluations.

The guidelines are designed for long-term steering

A prerequisite for increasing the timespan between proposed guidelines is the Government assessing the guidelines to be appropriate for a period longer than one year. This is as it should be, considering that the long-term nature of the guidelines entails that they are established on the basis of structural conditions affecting the cost or risks over time. This means that changes are mainly linked to factors such as different risk premia, the way the market functions, and the conditions affecting the size of the debt.

Moreover, the changes to the guidelines in recent years have been in the direction of steering the debt at a more overarching level, which gives the Debt Office the flexibility to manage large fluctuations in the borrowing requirement within the given boundaries.

It is, however, worth noting that the Government has the possibility to change the guidelines at any time – even between regular guidelines decisions. In accordance with the rules in place, the Debt Office can also at any time and of its own initiative submit proposals to change the guidelines.

Stronger link between guidelines and evaluation

A longer time perspective would provide the Debt Office with a better opportunity to analyse long-term connections within the framework of central government debt management and to handle feedback and proposals that emerge through the external central government debt management evaluation that is conducted every two years.

The evaluation process formally begins on 22 February once the Debt Office submits a basis for evaluation to the Government. That basis serves as an important foundation for the official letter that the Government submits to the Riksdag by 25 April every two years. In addition, the Government uses an external audit by the Swedish National Financial Management Authority every two years. In the years in between, the Government reports a preliminary evaluation in the Budget Bill.

In summary, the Debt Office's assessment is that the proposed method of handling the proposed guidelines would free up resources and enable more in-depth and long-term analysis of the strategic steering of the central government debt. This would, in turn, improve the basis for the Government's decisions on the guidelines and the evaluation of central government debt management.

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

RIKSGÄLDEN
SWEDISH NATIONAL DEBT OFFICE

Visit: Olof Palmes gata 17 | Postal: SE-103 74 Stockholm, Sweden | Phone: +46 8 613 45 00
E-mail: riksgalden@riksgalden.se | Web: riksgalden.se