

Central Government Debt Management

Proposed guidelines 2013-2016



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Summary

In this report, the Swedish National Debt Office puts forward proposed guidelines for 2013–2016. For the years 2014 up to and including 2016, the proposals are preliminary. The goal is for the debt to be managed in such a way that the cost of the debt is minimised in the long term while taking the risk in the management into account. Furthermore, this management shall take place within the framework of the requirements set by the monetary policy.

In this year's proposed guidelines, the Swedish National Debt Office submits a final report of the review requested of us by the government 2010. The Debt Office was requested to conduct a scenario analysis, based on the assumption of a significantly higher and lower debt, of how large a share of the central government debt each type of debt should have and how the maturity should be managed in each case.

In last year's proposed guidelines, we accounted for a part of that analysis. This year, we complete the scenario analysis with a renewed analysis of the share of the currency debt in particular. We also draw certain conclusions of the inflation-linked share and the maturity.

The goal for the Debt Office is to manage the central government debt so the cost is minimised long-term while the risk inherent in such management is taken into account. In this year's analysis, we have conducted a renewed analysis of the question whether it is possible to reduce the risk in terms of cost variation by having a certain share of the debt exposed to foreign currency. In next year's proposed guidelines, we will analyse potential cost benefits of having currency exposure.

The basis for this year's analysis is a new cost measure where the average cut-off yield, and the variation of the same, is measured in a consistent and uniform manner for all types of debt and all instruments. This is important for it to be possible to adequately analyse the composition of the debt.

We have analysed the share of the currency debt based on historical data. We note that the cost variation of a portfolio with only krona debt is very low. It has not been possible to reduce the cost variation further with a certain share of currency exposure. Therefore, there might be cause to reconsider the current guidelines on a currency share of 15 per cent. Such reconsideration must also include a deeper analysis of the cost aspects and we intend to perform this for next year's proposed guidelines.

There are also other factors that point to await changes of the guidelines for the currency debt that relate to the current review on the balance sheet of the Riksbank. The government has appointed a review of the Riksbank's own capital and the currency reserve. The result of the review

could affect our currency exposure and our role in the financing of the currency reserve. It is our assessment that it would not be appropriate to implement major changes of the guidelines for the currency debt until the final findings of the review have been processed.

Regarding the inflation-linked share, we note that it is theoretically possible to reduce the cost variation of the debt by having a significant share of inflation-linked debt. But in practice, this cannot justify the inflation-linked share as the cost variation for the debt is already so small. A more important reason to have inflation-linked debt is that it relieves the pressure on the funding in other types of debt at a time when the central government debt is large.

In this year's guidelines, we do not propose any changes regarding the composition of the debt, but we intend to return to the issue of the size of the currency debt. Also, the guidelines for the maturity are proposed to be unchanged.

In the guidelines decision for 2012, we were asked by the government to review how the guidelines to a greater extent can take refinancing risks into account when managing the central government debt. Our conclusion is that it would not be appropriate to limit the refinancing risks with quantitative control measures in the guidelines. For reasons of clarity, it is however justified to emphasise in qualitative terms the importance of that the Debt Office consider the refinancing risks. We propose that the guidelines be supplemented so that refinancing risks are explicitly covered.

We estimate that the refinancing risks are small, even in relation to financing risks that may occur for other reasons. Therefore, it may be more appropriate to take measures to limit financing risks than to attempt to reduce the refinancing risks further. One such measure would be to review the government's payments with the aim of reducing the seasonal variations.

In the guidelines concerning position-taking, we propose a supplement that means that the government is to state that the active management in foreign currency may only take place in markets that allow for the market risk to be managed by liquid and otherwise well-developed derivative instruments and which potentially constitutes a

funding currency within the framework of the debt management. The purpose of the supplement is to codify existing practice that the board of the Debt Office has decided on in terms of in what markets the taking of positions is permitted. We also describe how we view the role of the positions in the management of the debt in general.

We also propose new wordings in the guidelines for the maturity of the debt. The purpose is to clarify what the guidelines refer to. Although it follows from the underlying motive texts, it is desirable that it is clear from the list of the proposed guidelines what the management refers to.

Prerequisites

The size of the central government debt and the future borrowing requirement affect the central government debt management. The debt management is also designed to take into account the functioning of the markets. In this section, we provide an account of our view of the borrowing requirement and the development of the central government debt over the next few years.

1 The development of the central government debt until 2016

As a basis for the analysis of the borrowing strategies in the following chapters, we discuss here the central government debt in a historical perspective, the uncertainty about the future development of the central government debt and finally, current forecasts of the borrowing requirement and the central government debt from official agencies.

1.1 The concept of net borrowing requirement

Changes in the central government debt can, somewhat simplified, be equated with the central government net borrowing requirement. The net borrowing requirement is identical to the central government budget balance although with reversed signs. If there is a budget surplus, the Debt Office will amortise the central government debt (negative net borrowing requirement) and if there is a deficit, the central government debt will increase as the Debt Office will borrow to fund the deficit (positive net borrowing requirement).

In addition to the net borrowing requirement, the central government debt is affected by debt-related dispositions, which are changes in the central government debt which do not correspond to any changes in the net borrowing requirement. This may, for example, be revaluation of the foreign currency debt to current exchange rates and revaluation of inflation-linked bonds in Swedish kronor, the value of which is linked to the consumer price index (CPI).

1.2 Downward trend for central government debt since the crisis in the 1990's

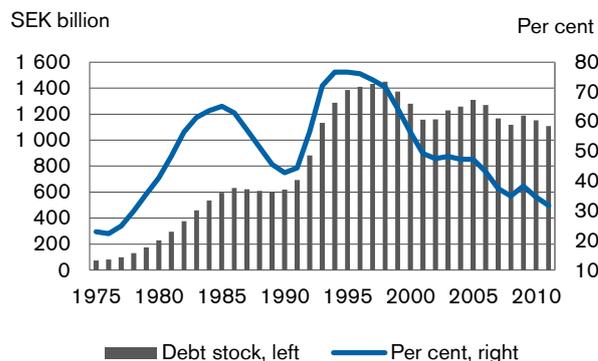
In a historical perspective, the net borrowing requirement has varied sharply from year to year. In general, the net borrowing requirement decreases in upturns and increases in downturns. When the economy grows above trend, incomes often rise quickly while the expenditures develop weakly or even decrease. The opposite applies in downturns when income grows slowly or decreases while expenditure increases. The fact that income and expenditure are out of step strengthens the fluctuations in the net borrowing requirement.

Looking back all the way to the 1950's, central government debt expressed in proportion to GDP has

increased sharply during two periods. From 1976 to 1985, central government debt rose from 22 per cent to 65 per cent as a share of GDP. After some years of falling central government debt, it rose again from 43 per cent in 1990 to 77 per cent of GDP in 1995. After 1996, the central government debt as a share of GDP has decreased gradually to around 32 per cent in 2011.

After the crisis in the early 1990's, it was decided to strengthen the fiscal policy framework in Sweden. Among other things, an expenditure ceiling was introduced in the central government budget as well as surplus target for the entire public sector.

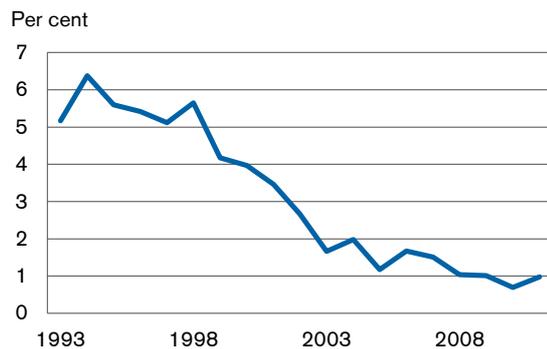
FIGURE 1 CENTRAL GOVERNMENT DEBT IN SEK AND AS A SHARE OF GDP 1960-2011



Source: The Debt Office

The expenditure ceiling has not been exceeded in any year and the surplus target has also been complied with on the basis of the indicators used by the Government to evaluate the surplus target. Undoubtedly, the fiscal policy framework has worked well and contributed to stronger and more stable central government finances. The high level of confidence in Swedish central government finances also contributes to keeping down the cost of central government borrowing.

FIGURE 2 INTEREST PAYMENTS ON THE CENTRAL GOVERNMENT DEBT AS % OF GDP, 1993-2011



Source: The Debt Office

The introduction of an inflation target for the Riksbank and a floating exchange rate have had positive effects on the Swedish economy as a whole which indirectly has had a stabilising effect on central government finances as well. As the credibility of the inflation target has increased, this has contributed to considerably lower market interest rates. The fiscal policy framework and the reformed monetary policy have thus contributed to interest payments on central government debt decreasing over time, see chart 2 above.

1.3 Uncertainty factors and risks in the future development

There are a number of uncertainty factors which make the assessment of the development of public finances in the coming years difficult. Some of these factors are discussed below.

Economic growth

A major uncertainty factor for the central government finances, both in the medium and long term is the global macro-economic development. This is because Sweden is a small open economy with a large export sector in relation to GDP. In the short term, there is a lag before growth in other countries has an impact on Swedish public finances, although there is a considerable effect within a horizon of a few years. Growth in the Swedish economy affects important tax bases such as consumption and wages. Expenditures are also cyclically dependant although they have become less sensitive as the regulatory framework for various benefit systems has been made stricter. Furthermore, the central government budget is designed in such a way that expenditure normally grows at a slower rate than income, in the absence of new political decisions. This is because many appropriations are linked to the development of prices rather than income, or are expressed in nominal amounts.

Demography

A gradually aging population entails financial strain, in particular for the public sector as a whole. The increased costs fall predominantly on municipalities and counties as

well as the old age pension system. Some of the costs will also probably be borne by the state. In our assessment, there will not be a noticeable effect up until 2016 however.

Fiscal policy

Rules for the tax system and expenditures can change and ordinarily, the public finance effects of such changes are difficult to assess. This leads to uncertainty, in particular in the medium term, as it takes time to implement new proposals. In the long term the uncertainty is probably less, as any fiscal policy that leads to large surpluses or deficits, creates a political pressure to balance the budget.

Major unanticipated events.

Major more or less unanticipated events tend to affect and strengthen changes in the net borrowing requirement both in cyclical upturns and downturns. In recent years, among other things, sales of state-owned assets and lending to the Riksbank in order to strengthen the currency reserve have taken place. Both these types of transactions affect the net borrowing requirement and the central government debt. However, it does not affect central government financial net lending as the net worth of the state is not impacted. In the one case, the state exchanges shares for cash and in the other case, the state has a claim for exactly the same amount as the loan.

Other effects that are often discussed are potential reductions in asset prices which can partly lead to real effects on the economy, partly impact the financial system. This has affected many countries in the world, just as it affected Sweden during the crisis in the 1990's. The current crisis has however had a limited impact on public finances in Sweden to date.

Reduced risks with the fiscal framework

The fiscal policy framework, which has been discussed above, has provided more stable central government finances and thus a reduced risk compared to the situation 20 years ago.

Interest payments are an item in the state budget that cannot be markedly altered by political decisions, other than indirectly. Interest payments on the central government debt have, due to a lower central government debt and lower market rates which in part can be explained by there being a credible inflation target, led to these payments no longer being a heavy burden on the budget. The central government debt itself thus constitutes a lower risk compared to the situation 20 years ago.

1.4 The Debt Office and other official forecasters

There are a number of official agencies that forecast public finances. Among them are the Government, The Swedish National Financial Management Authority (ESV) and the Debt Office. The purpose of the forecasts and the

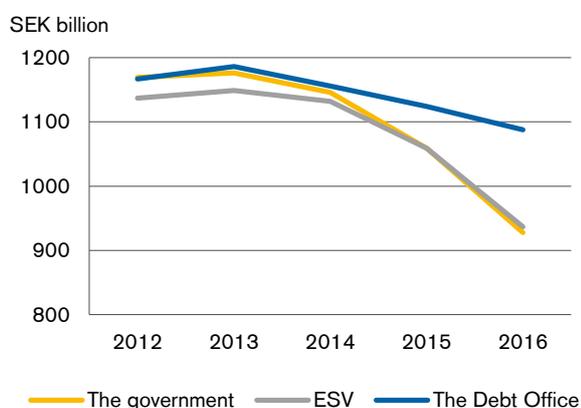
methods used differ somewhat, as well as the demarcations in terms of what the different agencies forecast.

The Debt Office only forecasts the central government net borrowing requirement and the central government financial net lending. Other agencies forecast the entire public sector. The Debt Office makes assessments on future fiscal policy changes which will affect the net borrowing requirement and the government financial lending. Everyone, except ESV, makes assessments on the sales of state-owned assets where decisions have yet to be made. The Government and ESV base their calculations on revenue and expenditure in the state budget. The Debt Office has a cash-flow model based on the actual payments of the agencies. The Debt Office has the shortest forecast horizon and the Government and ESV the longest, see chart 3 below.

1.5 The development of the central government debt up to 2016

In this section, we account for the calculation of the development of the unconsolidated central government debt according to the assessments of the Government, ESV and the Debt Office for the years 2012-2016. The assessments are uncertain, primarily due to the financial turbulence in recent times.

FIGURE 3 UNCONSOLIDATED CENTRAL GOVERNMENT DEBT AT THE END OF THE YEAR



As shown in the previous section, The Debt Office has no forecasts for the net borrowing requirement as far ahead as 2016. We have therefore estimated the net borrowing requirement based on a rough assessment in compliance with the surplus target for the public sector in the coming years.

The Debt Office's forecast is the most recently published forecast in the report on central government borrowing for the years 2012 and 2013. For 2014 to 2016, we have constructed a simplified technical calculation in which we assume that the Government complies with the surplus targets for the public sector.

Thereby, we estimate that the general government net lending will amount to 1 per cent per year for the period 2014-2016. On the basis of the total general government net lending, we estimate the central government financial lending and central government net borrowing requirement as a residual. In the calculations, we have assumed that the net lending in the local government municipal sector will be weakly negative and the net lending in the pension system somewhat positive. This should not be regarded as a new sharp forecast from the Debt Office.

The Government's forecast is taken from the Budget Bill for 2013 and ESV's forecast from its most recent report from September 2012.

The calculations indicate a range for the central government debt at the end of 2016 of between SEK 900 billion and barely SEK 1,200 billion. A common assumption for all the forecasters is that they anticipate a weak economic growth during 2012, in particular in view of the financial unrest in the world. The uncertainty of future economic growth is now considered greater than before. All forecasters however, expect the economic recovery to speed up again in 2013, even if expectations of the strength of the recovery vary between the authorities. If the debt crisis deepens and becomes more serious, then there is an obvious risk that public finances will deteriorate and that the need for borrowing will increase in relation to the forecasts now available.

TABLE 1 FORECASTS ON PUBLIC FINANCES

	The government	The Swedish National Financial Management Authority	The Debt Office
Demarcation	the entire public sector	the entire public sector	only the government
Own macro assessment	yes	yes	yes
Takes new fiscal policy into account	no	no	yes
Sales	yes	no	yes
Basic data	incomes/expenses	incomes/expenses	cash flows
Forecast time line	4-5 years	4-5 years	1.25-2.25 years

* Plus medium term

Proposed guidelines 2013-2016

Here we present our proposed guidelines for central government debt management during 2013–2016. The proposed guidelines are preliminary for 2014 up until 2016. In the cases where we propose changes in the guidelines, the current wording is given in the left column and the proposed new wording in the right column. With a view to create an overview of the decisions controlling central government debt management, the relevant parts of the Budget Act (2011:203) and the Ordinance (2007:1447) containing instructions for the National Debt Office have been included.

The objectives of the central government debt management

1. The central government debt is to be managed in such a way as to minimise in the long-term costs while taking risk into account. Management is to take place within the framework of monetary policy requirements. The Budget Act (2011:203).

The task of the Debt Office and the purpose of the borrowing

2. The remit of the Swedish National Debt Office is to raise and manage loans on behalf of the central government in accordance with the Budget Act (2011:203). Regulation (2007:1447) with instructions for the Debt Office.
3. According to the Budget Act (2011:203), the Debt Office may raise loans for the government in order to:
 1. finance current deficits in the central government budget and other expenditure pursuant to decisions made by the Riksdag,
 2. provide such credit and perform such guarantees as decided by the Riksdag,
 3. amortise, redeem and buy back central government loans,
 4. satisfy the requirement for central government loans with different maturities in consultation with the Riksbank and
 5. satisfy the Riksbank's requirements for foreign currency reserves.

The guideline process

4. The Debt Office is to submit proposed guidelines for central government debt management to the government by 1 October each year. Regulation (2007:1447) with instructions for the Debt Office.
5. The government is to allow the Riksbank to comment on the Debt Office's proposed guidelines. The Budget Act (2011:203).
6. The government is to make a decision by November 15th each year on the guidelines for the Debt Office's management of the central government debt. The Budget Act (2011:203).
7. The Debt Office shall, no later than February 22nd every year, submit to the government a basis for the evaluation of the management of the central government debt. Regulation (2007:1447) with instructions for the Debt Office.
8. The government shall evaluate the management of the central government debt every other year. The evaluation is to be submitted to the Riksdag no later than April 25th. The Budget Act (2011:203).
9. The Debt Office shall establish principles for how the guidelines stipulated by the government for the management of the central government debt are to be implemented. Regulation (2007:1447) with instructions for the Debt Office.
10. The Debt Office shall establish internal guidelines based on the government's guidelines. The decisions must concern deviation intervals for the maturity benchmark values that the government has decided on for the individual types of debt, the distribution of the risk mandate, the currency distribution in the currency benchmark and principles for market and debt maintenance.

The composition of the central government debt — debt shares

11. The share of *inflation-linked SEK debt* shall over the long term be 25 per cent of the central government debt.
12. The share of *foreign currency debt* shall be 15 per cent of the central government debt.

The control range around the benchmark shall be ± 2 percentage points.

If the foreign currency share goes outside the control range, the share of the currency debt must be returned to the benchmark or inside the range if the deviation is due to changes in the exchange rate movements.

13. The Debt Office is to stipulate the benchmark for the distribution across different currencies of the currency debt.
14. In addition to the inflation-linked SEK debt and debts in foreign currency, the central government debt shall consist of *nominal krona debt*.

The maturity of the central government debt

15. The maturity of the nominal krona debt for maturities up to twelve years shall be between 2.7 and 3.2 years.
16. For maturities above twelve years, the benchmark for the outstanding volume is to be 60 billion SEK.
17. The maturity of the inflation-linked krona debt shall be between 7 and 10 years.
18. The maturity of the currency debt is to be 0.125 years.

Current wording

19. The Debt Office is to decide on the deviation intervals for the maturities.

Proposed wording

19. The maturity of the types of debt may temporarily deviate from the maturities that are stated in items 15, 17 and 18 respectively.

Cost and risk

20. The balance between the expected cost and risk shall predominantly be done through the choice in the composition and maturity of the central government debt.
21. The overall *cost measure* shall be the average cut-off yield.
22. The overall *risk measure* shall be the average cut-off yield risk.

New guideline

23.

Proposed wording

23. The Debt Office should take *the refinancing risk* in the management of the central government debt into consideration.

24. The different types of debt's *share* of the central government debt is to be calculated using a measure that considers all the cash flows in the central government debt, that is also future coupon payments and expected inflation compensation.
25. *The maturity* is to be measured using an average interest rate refixing period where all cash flows including the expected inflation compensation are included. Cash flows are not to be discounted.
26. The positions are not to be part of the calculation of the debt shares and maturity.
27. When taking positions, the market value is to be used as a measure of the costs and risks in the management.

Market and debt maintenance

28. Using market and debt maintenance, the Debt Office shall contribute to the efficient functioning of the government bond market with the intention of achieving the long-term cost reduction target taking risk into account.
29. The Debt Office is to decide on principles for market and debt maintenance.

Active management

Current wording

30. The Debt Office may take positions in *foreign currency* and *the exchange rate of the krona*.

Positions in foreign currency may only be taken using derivative instruments.

No positions may be taken on the Swedish fixed income market.

Positions refers to transactions that aim to reduce the cost of the central government debt taking risk into

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No positions may be taken on the Swedish fixed income market.

Positions refers to transactions that aim to reduce the cost of the central government debt taking risk into

consideration and not being motivated by underlying needs for borrowing or investment.

Positions may be strategic (long-term) or operative (continuous)

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Positions may be strategic (long-term) or operative (continuous)

Positions may only be taken in markets that allow for the market risk to be managed by liquid and otherwise well-developed derivative instruments and which potentially constitutes a funding currency within the framework of the debt management.

31. Positions in *foreign currency* are limited to SEK 450 million, measured as a daily value-at-risk at 95 per cents probability.

The Debt Office must decide how much of this margin may be used maximum in the operational activities.

32. *Strategic positions in the exchange rate of the krona* are limited to a maximum of SEK 15 billion and are to be built up and liquidated gradually and be announced beforehand.
33. Operative positions in kronor in connection with exchanges between kronor and other currencies may be taken to a limited extent. The Debt Office is to state the maximum scope.

Borrowing on the retail market

34. The Debt Office is to, via retail market borrowing, contribute to reducing the costs of the central government debt in relation to corresponding borrowing on the institutional market.

Borrowing to satisfy the need for public loans

35. The possibility of issuing loans to meet the need of central government loans in accordance with the Budget Act (2011:203) may be utilised only if this is necessary due to threats to the functioning of the financial markets.

The Debt Office may have a maximum nominal value of 200 thousand million SEK outstanding to this end.

36. Investment of the funds that have been made as loans in order to satisfy the need for public loans should be guided by the principles that are stated in the Act (2008:814) about public support for credit institutions.

Management of funds, etc.

37. The authority is to invest its money, to the extent that they are not needed for payments, in an account at the Central Bank, a bank or a credit market company or in government bonds or in other bills of exchange with a low credit risk. Investments may be made abroad and in foreign currency. Regulation (2007:1447) with instructions for the Debt Office.
38. The Debt Office is supposed to cover the deficits that occur in the government's central account. Regulation (2007:1447) with instructions for the Debt Office.
39. The management of swaps between Swedish and foreign currency (currency swaps) are to be marked by predictability and clarity. Regulation (2007:1447) with instructions for the Debt Office.

Consultation and co-operation

40. The Debt Office shall consult with the Central Bank on matters on the parts of the borrowing activities that can be expected to have a greater fiscal importance. Regulation (2007:1447) with instructions for the Debt Office.
41. The Debt Office is to Co-operate with the National Institute of Economic Research and the Swedish National Financial Management Authority in matters on the authority's forecasts on the government's borrowing needs. Regulation (2007:1447) with instructions for the Debt Office.
42. The Debt Office should obtain the opinions of the Central Bank on how to invest such funds as are borrowed to satisfy the need for public loans in accordance with the Act (1998:1387) on the borrowing and debt management of the government.

Evaluation

43. Evaluation of the management of the central government debt is to be carried out in qualitative terms in light of the

knowledge that was available at the time of the decision. When possible, the evaluation shall also include quantitative measures.

44. The evaluation of the operative management shall, among other, concern the borrowing in and the management of the different types of debt, market and debt maintenance measures and the handling of currency bills.
45. In the case of inflation-linked borrowing, the realised cost differential between the inflation-linked and the nominal borrowing is to be accounted for.
46. For borrowing on the private market, the cost savings compared with alternative borrowing must be accounted for.
47. The result of strategic and operative positions within a given risk mandate must continuously be noted down and an evaluation be done in terms of market value.

Reasons for proposed changes

In this section, we describe the background for proposing the changes to the guidelines. The Debt Office proposes supplements to the guidelines in two areas. The first concerns the framework for taking positions and the second concerns the management of refinancing risks. In addition, we suggest changes to wording in a few cases in order to

1 Taking of positions

In the guidelines concerning the taking of positions, we propose the following addition:

“Positions may only be taken in markets which enable that the market risks can be managed through liquid and otherwise well-developed derivative instruments and which potentially constitutes a funding currency within the framework of the debt management.”

The purpose of the supplement is to codify existing practice that the board of the Debt Office has decided on in terms of what markets the taking of positions is permitted. Which markets this will be in reality, should continue to be decided by the board as the conditions naturally vary over time.

In the next chapter, we explain how we view the role of the positions in the debt management in general. There is also a more detailed discussion of the demarcation in terms of the markets for the taking of positions. See section *Active debt management and taking of positions* on page 24.

2 Refinancing risks

We suggest that the guidelines be supplemented by the following paragraph under the heading *Cost and risk*.

“The Debt Office should take refinancing risks into consideration in the management of the central government debt”.

At the request of the government, we have looked at how the guidelines should be drawn up in order to deal with refinancing risks to a greater extent in the management of the central government debt. For reasons of clarity, it is justified to explicitly address refinancing risks in the guidelines. In our opinion, it would however be inappropriate to introduce some form of quantitative control measure in order to limit refinancing risks. Such control risks leading to unnecessary operational limitations and higher costs.

Therefore, we suggest that refinancing risks are dealt with in qualitative terms. It will then be the task of the Debt Office to describe in the evaluation of the management, how we have taken the refinancing risks in the management into account.

The review is reported in the next chapter under *Controlling the refinancing risks* on page 21.

3 New wording for the maturity of the central government debt

The Debt Office proposes to alter the wording in the guidelines under item 19 for the maturity of the central government debt as follows:

“The maturity of the debt types may temporarily deviate from the maturities that are stated in items 15, 17 and 18 respectively.”

The benchmarks that are stated for the maturity of the different debt types concern the maturity over a longer period of time. The actual maturity for individual days, weeks, months and quarters may deviate from the benchmarks. The maturity in the central government debt, in particular for the nominal debt, depends to a great extent on the cash position of the government. During those days and months when the borrowing requirement is especially large, the maturity tends to be shortened as the government then needs to borrow larger amounts with a short maturity. During periods with surplus, the maturity tends to get longer. There is no reason, if it is even possible, to try to parry this with, for example, counteracting derivative transactions. The purpose of the maturity objective is rather to control the maturity of the debt net of variations in the borrowing within the framework of the liquidity management. The controlling of the maturity should therefore be for a period which is at least one year or longer.

Forecast deviations may also lead to that the maturity deviates from the benchmark for a period of time. The benchmark for the maturity will then govern the forward-looking debt planning so that the maturity is returned to the benchmark. How quickly this can be done depends on the size of the forecast deviations and the costs for the adjustment. Therefore, it is not appropriate to specify a precise period during which the maturity target is to be fulfilled. It is reported in the annual evaluation to the government how the maturity target has been fulfilled.

The current wording in paragraph 19, that the board is to decide on permitted deviation intervals, is replaced with the new wording. The board may of course always, if it so wishes, decide on permitted deviations. However, it is not

clear that it is possible to stipulate a ceiling in advance for permitted deviations as the size of such deviations are dependent on external factors such as cash deficits or surpluses which are difficult to control and which also do not lead to any real or problematic maturity exposures.

Analyses and review responses

Here, we respond to the government's requests for reviews. Firstly, we submit a final report on the scenario analysis, the first part of which was given in last year's guidelines proposal. Then, we submit a response to the review request that we were given in last year's guidelines decision on how we in the management can to a greater extent take the refinancing risks into account. Finally, we account for a review request that concerns the mandate for taking positions within the management of the central government debt.

1 The tasks

In 2010, the government requested the Debt Office to conduct an analysis, based on the assumption of a considerably higher or lower debt, of how large a share of the central government debt each type of debt should have, and how the maturity should be managed in each case.

In last year's proposed guidelines, the Debt Office presented a qualitative analysis with the intention of finalising the analysis in this year's guidelines with a supplementing quantitative analysis in terms of the shares and maturities of the central government debt. This year, we complete the scenario analysis with a renewed analysis of in particular the share of the currency debt. This analysis is presented in section 3. We then comment on the inflation-linked share and maturity in section 4. With this report, the scenario analysis is completed.

In the guidelines decision for 2012, the government requested the Debt Office to consider how the guidelines to a greater extent can take refinancing risks into account. This related both to control as well as substance, that is how refinancing risks can be limited. We show this in section 5.

In April of this year, the government requested the Debt Office to review how the mandate for taking positions can be limited in such a way that the opportunity to take positions with no direct link to the currency debt is closed. Furthermore, we were given the task to account for how the taking of positions can be motivated and analysed as an integrated part of the debt management. We account for this review in section 6.

2 In-depth share analysis

The question as to how large the shares of the different types of debt should be in order for us to reach the objective of minimising the cost for the debt long-term while taking risks into account is complex. When we determine the shares, we need to consider cost aspects and diversification effects. In order to limit the risks in the management, and thus the long-term costs, we also have to ensure that we reach a broad investor base and maintain liquidity in the domestic government bond market.

We also need to maintain some funding abroad to reach a wider market.

However, in the guidelines is not the funding regulated, but the exposure that the debt should have to different risks. The exposure is expressed in terms of shares of the different debt types and what maturity the debt should have. How we then create the exposure, by funding in various types of debt or through derivatives, is however not governed by the guidelines. Since we have an extensive portfolio of derivatives, there is a significant difference between the exposure and the underlying financing. This applies particularly to the foreign currency share where a large part of the funding is done in Swedish kronor which is then turned into exposure in foreign currency through derivatives.

The market conditions vary over time and periodically it may be more or less beneficial to borrow in the different debt types. Currently, there is for example a structural demand in the market for basis swaps which means that it is attractive from a cost point of view to create exposure in foreign currency and expensive to hedge funding from bonds in foreign currency.

In the quantitative analysis that we account for this year, we have until further discounted from such possible cost advantages and focused on the issue of diversification. Our starting point in the analysis of the shares has thus been to find the shares of the different types of debt which minimise the risk of the portfolio in terms of cost variation. We have achieved this by calculating cost and risk for the different types of debt in a more consistent and well-founded way than previously and applied that cost measure on historical data.

In theory, the optimal shares are independent of the size of the debt. There are however practical limitations which affect what shares are possible to achieve depending on the size of the debt. In terms of maturity, there is however a link to the size of the central government debt as the choice of maturity involves a trade-off between cost and risk. Also here, the practical limitations govern to what extent the maturity should be adopted to the size of the central government debt. How the size of the debt affects

our abilities to maintain shares and maturities in practice was covered in last year's guidelines proposal.

In this year's analysis, we have focused on how the share of the currency debt affects the cost variation in the portfolio. As the currency debt to a large extent is created via derivatives, we have considerable opportunities to achieve the exposure we desire. Regarding the inflation-linked debt, we need to make other considerations in order to ensure a functioning market. An analysis of what the size of the inflation-linked share should be in theory in order to minimise the cost variation is therefore less relevant.

The prioritising of the currency share in the analysis also partially depends on the fact that the same analysis based on historical data is not possible to conduct for the inflation-linked debt. The time series for the real interest rates are not long enough.

The analysis of the currency share is presented in section 3 whilst the inflation-linked share and maturity is commented upon in section 4. Before we account for this work, we give a brief summary of last year's analysis.

2.1 Summary of last year's analysis

In the guidelines proposal for 2012, we presented a qualitative analysis as to how shares and maturities should be managed if the debt was considerably larger or considerably smaller. Here, we briefly account for that analysis and have divided the review into three parts: the share of the inflation-linked debt, the share of the currency debt and the maturity. Please refer to last year's guidelines proposal for a more detailed discussion.

The share of the inflation-linked debt

Borrowing in inflation-linked bonds can contribute to reducing the risk in the central government debt. In addition to the possible reduction in the cost variation with exposure to the inflation-linked market, borrowing in inflation-linked bonds helps to relieve the pressure on the market for government bonds and bills if the debt is large. The risk for an increase in interest rates of one particular type of debt is reduced by spreading the borrowing across several types of debt.

In order for the inflation-linked debt to be able to contribute to this, the liquidity on the inflation-linked market must be sufficiently good. Otherwise, the government risks having to pay a liquidity premium which exceeds the potential cost saving. In order for the liquidity to be acceptable from the investors' point of view, the stock of outstanding debt must not be too small.

In a scenario where the debt becomes so small that the liquidity on the inflation-linked market no longer can be maintained, we would prioritise nominal government bonds, which form the basis for the financing of the central

government debt. Most probably, the inflation-linked share would in such a scenario decrease in conjunction with loans maturing.

If the debt were to grow considerably larger, at least if the debt grows quickly, it would be difficult to maintain the current inflation-linked share. Inflation-linked bonds are held by a much narrower group of investors and their willingness and ability to increase their holdings quickly are limited.

The share of the currency debt

The ability to borrow in foreign currency is important in order to reduce the financing risk. Foreign currency bonds are the loan instrument where we have the greatest ability to borrow large amounts at short notice. If the borrowing requirement drastically increases, it may also in the somewhat longer term be useful to relieve the domestic market by borrowing in foreign currency as the considerable borrowing requirement would otherwise push the Swedish interest rates upwards.

In order to guarantee that the government always has efficient access to the international capital market, the establishment of an infrastructure for the borrowing is necessary. The infrastructure consists of many parts: knowledge in the form of human capital, routines and systems, access to markets and buyers of government bonds (investor base), legal prerequisites with for example necessary agreements and dealers.

It may therefore be motivated to regularly have some borrowing in foreign currency. In this way, we ensure that necessary conditions are always in place.

The arguments above are motives for having some *financing* directly in foreign currency. This does however not justify that the government should retain the *exposure* in foreign currency. It is the exposure that is regulated in the guidelines, as it is that which determines what (direct) costs and risks the government takes on. It is also technically possible by using derivatives to remove the exposure that the financing bring about. Whether it is also appropriate, is a different matter, which in itself should be judged based on the effect on cost and risk. This year we have undertaken a renewed analysis as to what currency exposure is suitable; see further below.

If the debt is small or rapidly decreasing, it is necessary to, as is done today, prioritise borrowing in government bonds. We can achieve the currency exposure that we wish to have using derivatives. Currently, maintaining the investor base and the internal infrastructure is not an issue in that we borrow directly in foreign currency for the on-lending to the currency reserve of the Riksbank.

In the event of a considerably greater debt, and in particular if it were to increase rapidly, it could be suitable to let the currency share increase as a great deal of it

needs to be financed using currency funding. What currency share that is then possible or desirable will be a matter of finding a balance between what it costs to convert the exposure to Swedish kronor and what increased risk the higher currency share leads to.

Maturity

It is mainly through the choice of maturity that the government decides on the balance between expected cost and risk. With a short maturity the expected cost will be lower as shorter interest rates normally on average are lower than long interest rates over long periods. At the same time, a short maturity is associated with a higher risk as the cost of the debt will vary within a broader interval as the interest rate of the debt is refixed more frequently.

When we analyse the maturity that the debt should have, we assume that the government is risk averse when it comes to the costs for the central government debt. This means that the government is willing to take on a higher expected cost if this at the same time means that the risk is reduced. How much the government is prepared to pay in order to reduce the risk depends on, among other, the fiscal situation. If the borrowing requirement is low and the central government debt small, temporarily increased debt costs are of little significance. The government then has greater room to view the government's costs more long-term. This way of looking at it means that the government should be prepared to take on a greater risk, that is have a shorter maturity, the smaller the debt is. The opposite is true if the borrowing requirement is high and the debt great. Then, the value of avoiding unexpectedly high costs is greater, and the maturity should therefore be longer.

It should however be emphasised that if we were to make a different assessment of the expected cost savings and the risks associated with borrowing short, that is how we assess the slope of the yield curve and variations over time, the result could change.

The choice of maturity also depends on the practical restrictions that are present due to the market conditions. We will not here review this but simply refer to last year's guidelines proposal.

3 Analysis of the currency share

Here we summarise the analyses that have been performed previously and which form the basis for the benchmark of the currency share today being 15 per cent. Thereafter, we describe the new cost measure as well as how the corresponding risk measure is defined. We then describe how the new cost measure differs from the previous approach. Finally, we present the result of this year's analysis and discuss, from different aspects, the prospects we have of drawing conclusions.

3.1 Previous analyses and conclusions

During the crisis in the early 90's, the currency debt increased considerably due to the defence of the Swedish currency and the financing of the significant budget deficit. When the Debt Office submitted the first proposed guidelines for 1999, the currency share was some 30 per cent of the central government debt. The currency share of the debt was analysed qualitatively in the proposal. The arguments highlighted, and which mainly have applied until today, can be summarised in five points:

- There are no theoretical reasons for believing in any systematic cost benefit with a currency debt compared to a Swedish krona debt (for a maturity-matched comparison).
- The cost variation for the currency borrowing is higher than for borrowing in kronor due to variations in the exchange rate.
- A certain level of exposure in foreign currency can reduce the risk in the central government debt through diversification in the sense that the dependency on the interest rates in individual countries, including Sweden, is reduced.
- Foreign currency debt is a flexible instrument in the sense that the government can borrow large amounts in a short period of time. A prerequisite for this to be true is however that the currency debt is not too large at the outset.
- There may be reason to always have some borrowing in foreign currency to secure access to the international capital market.

In this first proposed guidelines, there was no need to distinguish between financing and exposure, since the concepts in practice were almost synonymous as the derivative portfolio was small. The conclusion that we drew for the foreign currency debt was that it should be reduced, but not completely phased out due to the assumed positive diversification characteristic. How large the share should be was not analysed.

For several years following this, the Debt Office amortised on the currency debt. The currency share was so high that more detailed analyses of what could be considered a reasonable long-term benchmark could wait. In the meantime, we developed the analysis gradually of the composition of the central government in the proposed guidelines.

In the proposed guidelines for 2001, we analysed the currency share quantitatively, in particular using a simulation model of our own development. Using this, the long-term cost and risk characteristics of various strategies were analysed.

In the strategies, the share of foreign currency varied between 0 and 45 per cent, in 15 per cent steps. The

results showed that a certain reduction in risk was achieved with a 15 per cent currency debt. However, the result depended on the cost definition.

Included in this cost measure was only the exchange rate effect on the coupon payments and not on the face value. This approach was based on the assumption that the currency debt would not be repaid, that is the debt in foreign currency was more or less constant. Today we note that this implies that the exchange rate effect on the face value is periodised over eternal time.

In the proposed guidelines, we noted that these assumptions were strong. Therefore, we also performed simulations where we considered market value changes. The results indicated that the risk of currency loans became so great that the appropriate currency share would be zero per cent.

However, we considered that letting the market values fully impact the cost would not give a realistic picture of the risk, as it would probably never be necessary to buy back the currency debt within a very short time interval. We therefore made the assessment that the risk was overestimated using this approach.

Based on the analysis, we could not conclude what currency share that could be considered the most appropriate. The overall conclusion was that the currency exposure leads to considerable risks and that the benefits from diversification can only justify a more limited currency exposure. Even with a partial focus, from a risk point of view, on the coupon costs, it was difficult to justify a greater share than 15 per cent foreign currency debt. The greater an emphasis one placed on the exchange rate effect on the face value, the smaller the currency share ought to be.

Next time the share of the currency debt was in focus was in the proposed guidelines for 2005. The previous year, the government had requested the Debt Office to come back with an in-depth analysis of the currency share over the long term. We then supplemented the previous analysis by developing a scenario model, in order to examine how the costs for the central government debt are affected by various crisis situations, for example a currency crisis with a sharp weakening of the krona.

The conclusion was that the government, by reducing the currency share from the then 25 to 15 per cent, could reduce the immediate impact on the cost of a severe weakening of the krona. Reducing the currency share was the best way to reduce the risk of the debt management with respect to cost.

The overall view of the Debt Office based on previous analyses, qualitative and quantitative, led to that the long-term foreign currency share was proposed to be around 15 per cent. The government agreed with this

assessment. The target of 15 per cent has been fixed since then.

In last year's proposed guidelines, we developed the analysis of what is required in order to limit the financing risk in light of a falling debt. The conclusion was that there may be reasons for having a certain regular borrowing in foreign currency in order to ensure access to the international capital market. However, this does not justify any exposure in foreign currency. We have performed a renewed analysis as to what the exposure should be in this year's guidelines work, based on a revised cost and risk measure.

3.2 Cost and risk measures

According to the guidelines for the management of the central government debt, the overall cost measure is to be the average cut-off yield. This reflects the interest that the debt runs at on average. The overall risk measure is to be the variation in the average cut-off yield. This covers the risk of the cost becoming unexpectedly high.

The Debt Office has previously been lacking a cost measure that handles all types of debt in a consistent manner. In particular, it has been difficult to define the cost for the types of debt that have stochastic cash flows. This is about how changes in the CPI-index and the exchange rate will affect the cost of the inflation-linked debt and the currency debt.

In order to adequately analyse the composition of the debt, it is important that cost and risk are defined uniformly for all types of debt and instruments. Therefore, we have in this year's guidelines work prioritised to develop such a cost measure.

A new cost measure

Fundamental to the new measure is that it illustrates the average cut-off yield for the entire debt in a consistent manner. The measure is based on the debt being valued at the accrued purchase value. This means that the size of the debt for an individual loan is equal to the settlement amount, the sum in kronor that we receive when the loan is issued, and that it then grows with the issue yield and then on the day of maturity has a value corresponding to the amount that is to be paid back.

The cost for a certain period of time, expressed in kronor or per cent, is the change in the accrued purchase value during the period taking the cash flows that have occurred into consideration.

In this cost measure, we see each cash flow as the repayment of a zero coupon bond, and each zero coupon bond runs at its issue yield. The difference between the settlement amount and the paid cash flow for each zero coupon bond is periodised, that is distributed evenly across the maturity of the zero coupon bond. This follows

a basic accounting principle that all expenses are related to the period during which the underlying resource is consumed. When we repay the loan on the day of maturity, the underlying resource – in this case the right to use the borrowed amount – is consumed.

Risk measure

The risk is defined as the variation in the average cut-off yield. The variation measure provides a picture of the risk of the cost for a certain time period becoming unexpectedly high.

An important issue to consider when the risk is measured is over which horizon to calculate the cost. This determines what cost variation we pick up. With a longer time interval, the short term cost variation will disappear. The question is whether the government should consider the risk that the cost will become unexpectedly high in the short or long term.

Given that the government has no exactly defined view on risk in the management of the central government debt, it is not obvious which time interval that is relevant. Reasonably, a cost variation that is too short term should not have an impact, but if the time interval instead is too long, the cost will be periodised over such a long time that the cost variation will disappear.

The truth is most probably somewhere in between. Overall, we have made the assessment that five years is a reasonable time interval. This can be justified by the fact that the government has stated that this is the time period to be used in the evaluation of the management of the central government debt. But there are more fundamental reasons as well. For a state, which by definition has a very long time horizon, annual cost variations ought not normally to be of importance. It is also important here to consider that we are dealing with costs, not payments. The cash risks may namely in some situations, for example if the debt is very large, have to be valued over a short term. It is the payments that control how much the government must borrow in order to manage the interest payments on the debt.

In section 3.5, we comment on how this choice affects the outcome of the analysis.

3.3 Change from previous point of view

To define what the cost is for something as complex as a central government debt is a difficult but important task. In previous analyses, it has been found that the cost definition is crucial for the conclusion on the composition of the debt.

In this year's work, we have developed a method for calculating the cost, including inflation compensation for the inflation-linked debt and exchange rate effects in the currency debt, in a consistent way which makes it possible

to compare all types of debt and instruments on equal basis.

In the new cost measure, all cash flows are included in the cost. Hence, the effects of the exchange rate on the loan face value must be taken into account. However, as previously, we do not take into account changes in market values due to changes in interest and exchange rates. It is the exchange rate at the time of a payment that affects the cost.

The previous decision not to include the exchange rate effect on the face value was based on the assumption that the currency debt would not be repaid, or at least, that it would be unreasonable to assume that it would be repaid immediately. If the exchange rate of the krona is trend-reverting, the currency profits and losses cancel each other out in the long term and thus do not affect the cost. But we never considered periodising the currency exchange rate effects across the maturity of the loan.

With the new cost measure, the reasoning about the cost for the currency debt will go along with the way in which we view the risk of interest rate re-fixing for a certain maturity. We expect that borrowing in short maturities over time provides a lower cost than borrowing in long maturities, but at the price of greater cost variation. With the previous viewpoint on currency risk, these variations would disappear correspondingly given that short interest rates also vary around a fairly stable long-term average value.

The exchange rate effect and the inflation effect on all cash flows are handled uniformly and are accrued evenly over the maturity of each cash flow. For example, for a five year currency loan the exchange rate effect on the face value will be spread out evenly over five years.

3.4 Result of the analysis

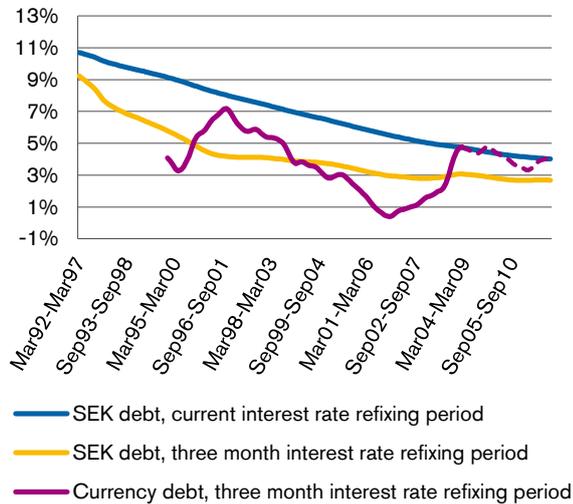
Based on the new cost measure, we have conducted a renewed analysis of the share of the currency debt based on historical data. It shows that it has not been possible to reduce the risk (cost variation) by having a certain share of the debt exposed in foreign currency.

We have calculated and studied the cost for different generic portfolios based on historical data from the last twenty years, that is since the Swedish krona began to float in 1992. The portfolios are constructed as steady-state portfolios, that is portfolios with a fixed composition over time, where we as well as possible, replicate how we borrow and create exposure in reality in kronor and in foreign currency.

In the calculations, we have assumed that the alternative to currency exposure is exposure with three month fixed interest in nominal Swedish kronor interest rates that are achieved with interest rate swaps where Stibor is the base

rate. In this way, the maturity for the total debt portfolio is kept unchanged regardless of what currency share we assume. Chart 4 shows how the five year cost has developed for three different portfolios during the historical period.

FIGURE 4 COST SERIES



The Portfolio “SEK debt, current interest refixing period” illustrates the cost for borrowing only in Swedish kronor where the current currency debt of 15 per cent has been replaced with three month Stibor. The cost variation here is almost non-existent. The reason for this is that we create a large part of the portfolio by borrowing in ten year bonds. Therefore, it is a relatively small part of the portfolio that is interest rate re-fixed in each period resulting in a stable cost over time.

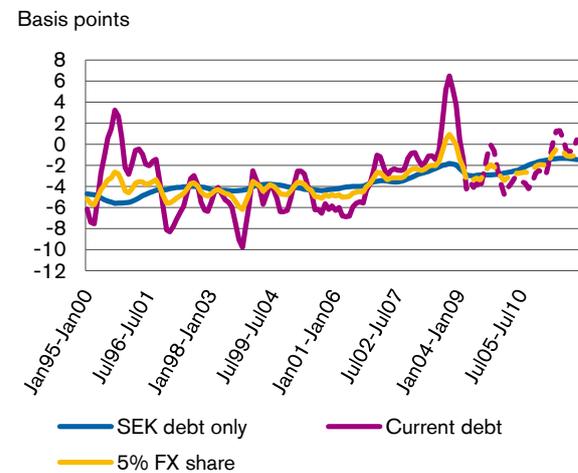
The Portfolio called “SEK debt, 3 month interest rate refixing period” corresponds to borrowing in only three month three month Stibor. This could be of interest as a comparison. If we had only borrowed in three month loans, the cost variation would have been greater but it had still been small. A large part of the cost variation due to the volatility in the short interest rates disappear when we study the cost over five years. That the cost for the entire period has been lower than for the portfolio “SEK debt, current interest rate refixing period” displays the fact that the three month interest rate on average has been lower than the long interest rates.

The final portfolio, “Currency debt, 3 month interest rate refixing period” shows the cost of only currency debt, where the exposure has been created with 50 % futures and 50 % swapped three year loans. This is our best approximation of what we do today. When we compare “SEK debt, 3 month interest rate refixing period” with “Currency debt, 3 month interest rate refixing period”, it is clear that the cost variation is higher for the latter. At the same time, it is not possible here to discern a clear cost difference.

It is worth mentioning that it is not possible to draw any complete conclusions on the level of the costs. The analysis is set up primarily to study cost variations.

In order facilitate a study of the variation in the cost series, we need to filter out the trend-based cost reduction as a consequence of the fact that interest rates have fallen both for SEK and currency during the time period in question. We have therefore differentiated the cost series by calculating the differences in absolute numbers for the five year costs from period to period. We have then studied the level of cost variation for the three portfolios with a different sized currency share: 0, 5 and 15 per cent. The interest rate refixing period is the same as for the current debt for all three portfolios. The result can be seen in chart 5.

FIGURE 5 COST CHANGES



The calculations again show that the cost variation in the krona debt has been very small. We have not been able to reduce the cost variation further by having an exposure in foreign currency, not even with a share of 5 per cent. The fluctuations in the exchange rate of the krona have made the cost of borrowing in foreign currency so volatile, relative to the stable cost of the krona debt, that the exchange rate effects overshadow the diversification effect of borrowing in different interest rate markets. Thus, no gain in terms of a reduced cost variation is achieved with a certain exposure in foreign currency.

3.5 Different aspects of the analysis

The analysis shows that given the historical data, we have not been able to reduce the cost variation by having exposure in foreign currency. In this section, we discuss the possibility, based on the historical analysis, of drawing more general conclusions on the foreign currency share.

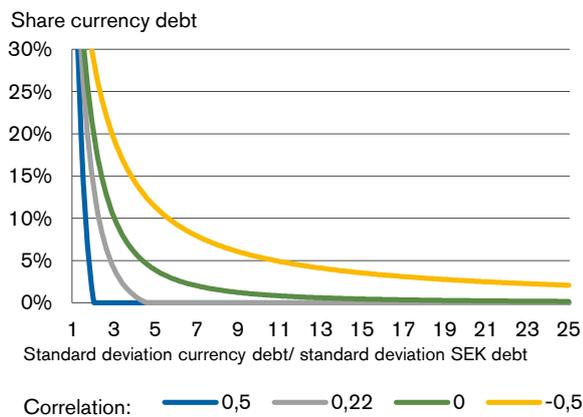
Sensitivity analysis

For the period that we have studied, the standard deviation was 23 times as large for the currency debt as for the krona debt based on the differentiated cost series in absolute numbers. The correlation between the cost for

the currency debt and the krona debt was 0.22. Given historical data, the share of the currency debt to minimise the cost variation has been more or less zero per cent.

The standard deviations and the correlation are however not stable over time. Therefore, we have studied how much they must change in the future to affect the conclusion. We have performed a simplified sensitivity analysis that is shown in chart 6. In the chart, we can see which currency share that minimised the risk in the debt given different volatilities and correlations. The volatilities are expressed as a ratio on the x-axis and each curve relates to a certain correlation.

FIGURE 6 SENSITIVITY ANALYSIS



Regardless of the correlation assumption, the currency share is less than five per cent when the volatility factor is as large as 23 times. The relationship between the cost for the krona debt and the currency debt is complex as the cost is calculated over five years and depends on interest and currency exchange rates from many different times periodised over maturities of different lengths. Historically, the correlation was positive on average. Given the cost definition, it is not likely with a negative correlation in the future but not a strongly positive correlation either.

A conservative assumption, relative to the history, is that the costs are independent, that is the correlation will be zero. In order for the currency share to then achieve a significant share, say five per cent, the volatility factor must be a bit under 5. Compared to the historical factor of 23, this means that the volatility in the Swedish interest rates must be very high at the same time as the exchange rate of the krona becomes very stable. This is not a likely scenario, as volatile interest rates are more likely to coincide with a volatile exchange rate. We can therefore draw the conclusion that the result of the analysis is robust, even if the analysis has been based on historic data.

Five-year or annual cost variation?

We have measured the cost variation based on five-year costs. If we choose a shorter time interval, for example annual cost variation, the difference in volatility increases

between the costs of the krona debt and the currency debt, as the fluctuations in the exchange rate have a greater impact. The conclusion from our analysis would therefore not be affected.

The conclusion would also not change if we calculated the cost variation for longer periods of time. Basically, this is because the cost variation of the krona debt is so small. It is hard to reduce it further.

Choice of model

The sensitivity analysis as shown in chart 6, indicates that unreasonable scenarios are necessary for the cost variation in the debt to be reduced by adding exposure in foreign currency. This is basically because the cost for the currency debt varies so much more than the cost of the krona debt.

Because of this, it becomes clear that it is not possible to reduce the cost variation using currency exposure. Therefore, we do not need to use any formal portfolio model to calculate the share. The currency share that minimises the cost variation is close to zero per cent.

Nominal or real perspective?

When we define a cost measure for the entire debt, this must be based on the same basis for all instruments and types of debt. The basis in our calculations above is nominal kronor. Indirectly, the benchmark in the calculations is therefore nominal kronor.

Swedish kronor is our base currency, but it is not clear whether we should have a nominal or real perspective. Nominal costs fit in with the accounting of the government budget, but from a fiscal and macro-economic point of view a broader perspective may be relevant. The ability to concentrate the analysis on the real borrowing costs has also been discussed on several occasions in previous guidelines proposals and decisions.

If we were to use a real perspective in the analysis, the conclusion regarding the currency share would not be changed. However, the inflation risk would be transferred from the real debt to the nominal debt. But the difference in risk between the nominal and the real debt is not so great because the difference between the break-even inflation and the actual inflation is evenly spread across the typically long maturities of the inflation-linked bonds.

But even if the risk for the nominal debt was significantly higher with a real perspective, we would have to weigh that against other risks. Most probably, the financing risk would weigh more heavily and the debt would still to the larger part consist of government bonds, which is our primary funding source.

ALM analysis

The new measure is a clarification of the concept of the average cut-off yield which the government has decided be the overall measure of costs. The measure captures the direct costs of the central government debt and the level at which they can be expected to vary over time. For the sake of completeness, it should also be mentioned that in previous guidelines discussions, a broader risk concept has also been covered. Among other things, we have looked at efforts of placing the cost of the management of the central government debt into a fiscal context.

In its most extreme form, this means that the risk in the central government debt is to be viewed in relation to the assets on the government's balance sheet. In accordance with this so called ALM-perspective, a risk occurs when the value of the assets and liabilities is affected in different ways by possible shocks. Even if fundamental reasons exist for viewing risk in this way, the conclusion has been that the government's assets (as its commitments in addition to the formal central government debt) are so complex that it is difficult to employ the ALM-perspective in the practical management of the central government debt.

A more practical applicable version is to define risk as the costs of the central government debt contributing to the worsening of public finances in a situation when they are already strained. This way of looking at it can be referred to as deficit smoothing. A well-balanced debt should in this context be expected to have low costs when the public finances are weak and vice versa.

In many instances, a recession, which means that the borrowing need and the public debt increases, is likely to coincide with a weakening of the exchange rate of the krona. With a significant currency debt to start with, the costs for the currency debt then increase as does the value of the currency debt calculated in kronor, at a point when this is unwelcome.

On the other hand, situations may occur when it is suitable to increase the currency debt during a period of weakening. If the krona is weak, currency loans provide a larger amount in kronor. If these loans are repaid when the economy, and therefore the exchange rate of the krona, has recovered, the government can make savings. This reasoning points to the fact that the government should be prepared to acquire a currency debt, but that it does not necessarily need to have a fixed share for the currency debt, independent of the financial situation. This is a background as to why we have the opportunity to position ourselves for changes in exchange rates.

If one studies a nominal krona debt in a similar situation, there are reasons that show it could contribute to keeping the debt costs down, as the domestic interest rates usually go down in an economic down turn. This applies predominantly to the short interest rates. A recession

usually means that the inflation pressure is reduced, which gives the central bank room to cut the short interest rates. By borrowing in Swedish kronor, the government can thus achieve lower borrowing costs just at the time when it is needed most, provided that the borrowing requirement is not so great that this has an impact on the domestic market.

A rapidly growing deficit during a recession may lead to a burdening on the borrowing in kronor, with higher interest rates as a consequence. By utilising the ability to issue bonds in foreign currency, the borrowing can be spread out so that the pressure on the domestic market is reduced. If this borrowing is hedged, we risk losing some of the benefits by borrowing in foreign currency, as large volumes in the derivative market for kronor would likely affect the pricing to our disadvantage. Further, we would lose the profit of an appreciation of the krona when the economy improves.

Low inflation also means that the costs for the inflation-linked debt go down. The inflation compensation that the government is obliged to give to the holders of inflation-linked bonds thus grows more slowly. Even if the costs are lower and the debt increases more slowly, the inflation-linked debt has a limited impact on the budget balance in the short perspective. This is because the main part of the inflation compensation is paid when the loan matures and that point in time can be several years ahead and have no connection to the current financial position.

Based on this qualitative reasoning, we can establish that the ALM-perspective in no decisive way affects the analysis of what shares we ought to have in currency and inflation-linked debt.

3.6 Conclusions

We can establish that the cost variation for the krona debt is very low when measured over five year costs. The cost variation is also very low for the current debt with a currency share of 15 per cent, but somewhat higher than if the central government debt only had an exposure in kronor. In previous analyses, we have disregarded such cost variations as occur when the currency debt is refinanced. With this new cost measure, it becomes evident that we should consider the refinancing effects when calculating the cost. It is then not possible to establish that the currency exposure reduces the risk in terms of cost variation.

Even if the cost variations are small with the current currency share of 15 per cent, there are no reasons for having any currency exposure as in the central government debt if we only consider the diversification effects in terms of a reduced cost variation. Therefore, there might be cause to reconsider the current guidelines on a currency share of 15 per cent. However, such a reconsidering must also contain a deeper analysis of the cost aspects that we intend to perform for next year's proposed guidelines.

There are also other factors that suggest waiting to make changes to the guidelines for the currency debt that relate to the on-going review on the balance sheet of the Swedish Riksbank. The government has appointed a review with one of the objectives being to analyse how the Riksbank's balance sheet should be structured (Directive 2011:89). The task includes issues linked to the Debt Office and the managing of the currency debt.

One of these concerns the ability to avoid that the Riksbank's balance sheet – and thus the capital needs of the bank – being affected by currency risks. As is evident from a set of basic data that the Riksbank has submitted to the review, this could be done by the Riksbank entering into currency forward agreements with the Debt Office regarding the part of the currency reserve which is not financed with loans in foreign currency. The Riksbank's currency reserve remains unaffected but from a risk point of view, it would be as if the entire currency reserve was financed using foreign currency, and not as today when the main share of it corresponds to debt posts expressed in kronor.

If the idea was implemented, the Debt Office would, using forwards, have currency assets which would approximately correspond to the current currency debt. In net terms, the currency debt would be close to zero. Thus, the currency risks which now burden the allocation for interest on the central government debt would also be removed, and this without us having to amortise on the currency debt. The issue of currency exposure will therefore come into new light.

The review on the Riksbank's balance sheet is expected to be completed around year end. It is not possible to determine in advance how the review will view the idea of forward hedging of the currency reserve or how this will be received by the government and the Riksdag. It is our assessment that it is therefore not suitable to introduce large changes to the guidelines for the currency debt before the report of the review has been processed completely.

The review will also assess the size of the currency reserve. This also raises the question about the relationship between the Debt Office and the Riksbank in connection with the funding to strengthen the currency reserve and how such borrowing should be regulated.

Currently, the on-lending to the Riksbank to strengthen the currency reserve, means that we have direct borrowing in foreign currency which corresponds more than sufficiently to the needs for reducing the financing risk by maintaining such borrowing channels. This arrangement is however not of permanent nature but, part of dealing with the financial turmoil over the last few years. If the review were to arrive at a solution that would mean that the need to borrow on behalf of the Riksbank disappear, or the on-lending would be wound up for other reasons, we would

need issue currency loans ourselves in order to ensure that we are able to gain access to the market for currency loans quickly, were the borrowing requirement to increase significantly.

If we are to maintain the currency exposure arising from the currency borrowing will be a matter of levelling between what it costs to change the exposure to kronor and what risk the exposure involves. In many situations – not the least right now – it would be costly to convert the exposure to kronor. (This is evident from the fact that it is cheap for us to borrow in kronor and to create a currency exposure through derivatives; here we would do it the other way around which would be expensive.) To then hedge the currency risk would be in conflict with the primary objective for the management of the central government debt as the risk in the debt would only increase marginally as a consequence of such currency exposure.

Borrowing with the aim of limiting the government's financing risks, and thereby also ensure long-term cost minimisation, has been discussed as a reason for currency exposure, but has not been the subject to a deeper analysis. This aspect, which concerns the investor base and financing risks as well as cost aspects, should therefore be analysed in more detail in next year's proposed guidelines.

4 The inflation-linked share and maturity

This year we have, as is evident, focused the analysis on the currency share. But we also draw some conclusions for the inflation-linked share and the maturity based on the new cost measure.

4.1 Inflation-linked share

It is not possible to study the inflation-linked share in the same way as the one that we have done for the currency share as there is not sufficient historical data for real interest rates. But based on the new cost measure, we can still draw some conclusions for the inflation-linked share.

Taking a nominal perspective, the inflation-linked debt is per definition more risky than the nominal debt. The difference in risk is however small as the difference between break-even inflation and actual inflation is evenly periodised over typically long maturities. Therefore, the risk of nominal and inflation-linked debt are in parity with each other. Thus, there is a potential opportunity for diversification with an inflation-linked debt.

A formal portfolio analysis would most likely show that we achieve the lowest possible cost variation in the central government debt with a significant inflation-linked share. But as the cost variation in the debt is so low already, the diversification benefits of an inflation-linked debt is small in practice. Also, the objective is not to minimise the cost

variation. Therefore, there is no basis for the inflation-linked share solely because it reduces the cost variation in the debt.

A more important reason for having an inflation-linked debt is instead that it relieves the borrowing in government bonds and government bills at a time when the debt is large. By spreading the borrowing among several types of debt, the risk of the interest in one particular type of debt going up is reduced. In order for the inflation-linked debt to be able to contribute to this in practice, it must be of sufficient size for the liquidity in the inflation-linked market to be acceptable from the point of view of the investors.

4.2 Maturity

In this year's analysis, we do not draw any new conclusions in terms of the maturity. The choice of maturity cannot be analysed based on historical data in the same way as the shares. The analysis is more complicated as the choice of maturity assumes a trade-off between expected cost and risk, and not simply a study of the risk.

Based on this new cost measure, it becomes clear that the level of risk for different maturities depends wholly on the choice of time interval when the risk is calculated. The longer the time interval, the more of the fluctuations in the short interest rates disappear. It is important to point out that the maturity that can be achieved to a large extent depends on the practical limitations of the different types of debt.

5 Controlling the refinancing risks

During the financial uncertainty over the last few years, it has become apparent that governments can have difficulties issuing bonds as well. In the light of this, the government has made the assessment that it is desirable to have a greater focus on the refinancing risks. In the guidelines decision for 2012, the government requested the Debt Office to review how the guidelines to a greater extent can take the refinancing risks into consideration when managing the central government debt.

We describe below how the Debt Office refinancing risks into account in the management and why the refinancing risks are small in a Swedish context. The explanation is that the central government debt is relatively small and distributed across many loans with different maturities.

Thereafter, we discuss alternative approaches to control the refinancing risks. It is our conclusion that it would not be suitable to limit the refinancing risks using quantitative control measures in the guidelines. There are however reasons for emphasising the importance of the Debt Office considering the refinancing risks. It is then the task of the Debt Office to afterwards account for the way in which we have considered the refinancing risks in the management.

Finally, we deal with possible measures for reducing the *financing risks*. This concept includes the conditions of handling the borrowing requirement that occurs as a consequence of a budget deficit. We can see that for Sweden, the financing risks are more important, in part because the government's payments are unevenly distributed and in part because there is always a degree of uncertainty on the budget outcome.

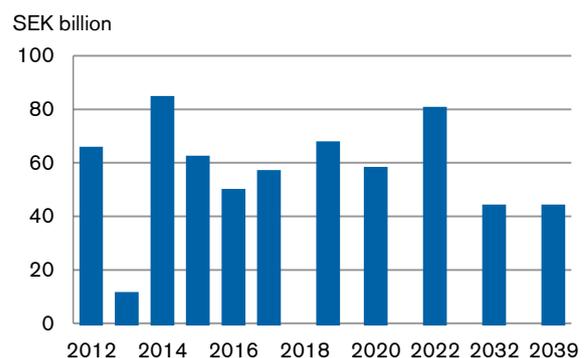
5.1 The refinancing risks have already been taken into consideration

We consider the refinancing risks in the management of the central government debt in many ways in our strategies for borrowing and market maintenance.

Government bonds are the core of our borrowing and represent the majority of the long-term borrowing. We strive for an even maturity profile for government bonds with maturities of up to 10 years. This means that only a small part of the remaining holdings mature and must be refinanced every year.

We have a perspective of two to three years when we plan the borrowing. In this planning, we pay regard to upcoming borrowing needs that comprise both maturing loans and other government payments. By regularly issuing small volumes at auctions, we spread the refinancing risks over a long period of time and a large part of the maturing bonds are thus replaced in advance. As the financing need is small and as we have the ability to hold very regular auctions, the volume for each issuance is considerably smaller than in most other European countries.

FIGURE 7 THE MATURITY PROFILE FOR OUTSTANDING GOVERNMENT BONDS AS PER 30TH JUNE 2012.



Swedish government bonds have more and more come to seem a safe investment as the concern for the fiscal development in many other countries has increased. The Swedish government has a very great degree of credibility as a borrower as we have strong public finances, our own currency and central bank. These factors, combined with the Debt Office's strategies for borrowing and market maintenance, have ensured that the refinancing risks are small for Sweden.

The refinancing risks have also reduced further over the last few years, due to concerns in the financial markets as the share of short borrowing has reduced. When the borrowing needs increased rapidly during 2009, we financed a large part of the increase with long bonds. Since then, the borrowing need has been very limited and we have reduced the borrowing in government bills of exchange and increased it in ten-year government bonds. The volume which needs to be refinanced annually has thus been drastically reduced.

FIGURE 8 OUTSTANDING NOMINAL GOVERNMENT SECURITIES WITH A MATURITY SHORTER THAN 2 YEARS

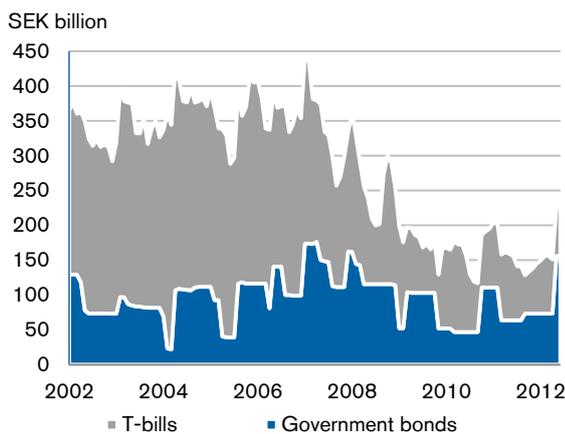


Chart 8 shows the stock of government securities with a maturity of up to two years. In this segment, the outstanding volume has more than halved over the last few years. It has gone so far that the market for short government securities today works less well. In our opinion, the outstanding volume in short government securities cannot be reduced further unless we cease completely to borrow using government bills.

It may be worth pointing out that we regularly need a certain volume of maturing loans in order to be able to maintain a continuous presence on the capital markets. This may be made considerably harder if too great an importance is placed in the maturity profile. Assume for example, that we tried to minimise the volume of maturing loans by continuously switching the shortest bonds for longer loans. Such a handling would mean that the government would cease to issue bonds during periods of a surplus. This would in turn make the financing harder in the event of a sudden borrowing requirement. Minimal refinancing risks could thus lead to an increase in financing risks.

When we plan the borrowing, we try to find a balance between the refinancing risk and the financing risk. If we distribute the borrowing across too many maturities, the individual issues will be so small that the bonds become illiquid. An illiquid bond market would lead to both increased costs and increased financing risks. When the borrowing requirement has decreased, we have therefore

opted to reduce the number of outstanding government bonds. The maturity profile has thus become somewhat spread out. When previously, we issued a new ten year bond every year, there is now rather 18 months between each new issue.

Since we over the last few years have supplemented with two very long bonds, the holdings of other bonds have decreased somewhat. It has been possible to combine this with continued satisfactory liquidity in the shorter bonds. However, we see no reason to increase the number of bonds further, at the current size of debt.

5.2 Controlling the refinancing risks

Despite the refinancing risks thus being low, there is reason to discuss how the steering in the guidelines should be designed in order to explicitly limit the financing risks. The current guidelines mainly aim to limit the interest rate refinancing risk (variations in the average cut-off yield). In the guidelines, the maturity of the central government debt is controlled in terms of interest rate refinancing period. A significant part of the long borrowing in bonds has been converted to short maturity by using interest rate swaps in order to reduce the expected interest cost. The benchmark does not therefore say anything about the length of time that remains until the loans mature and must be refinanced.

An average of the maturity of the maturing loans would be one alternative but this measure does also not say very much about the refinancing risks. A certain average maturity could be achieved in many different ways. A small loan with a very long maturity could for example extend the average maturity noticeably without the risks reducing correspondingly. The 30 year bond that we issued in 2009 was excluded from the maturity measure for the nominal krona debt precisely for this reason.

The controlling of the share of long maturities also has no real impact on the refinancing risks. From the point of view of limiting the government's refinancing risk, there is no real difference between a 10 year bond and a 30 year bond. It is only when the 10 year bond approaches maturity that the difference has any significance. Both maturities are beyond the time horizon that must usually be considered when analysing the refinancing risks.

To this must be added that the amounts and upcoming maturities that in practice can be transferred to very long maturities (given the current outlook for public finances) are small in relation to the level of uncertainty as to the size of public debt in ten years time.

To shift the financing into the future beyond ten years could even be counterproductive. If the total debt is small, the risk is that the liquidity in the remaining outstanding bonds will worsen, which will lead to a higher (re)financing risk.

Refinancing risks are basically about the consequences of concentrated maturity over the next few years. In order to really limit the refinancing risks, there is therefore a need for some form of control of the maturity profile. This would then be about limiting the part of the debt (or the size of the amount) that matures within a certain period, say one or two years ahead.

There is however clear disadvantages in using quantitative measures for the maturity profile. This could lead to a cost that is not in proportion to the risk that we want to limit. The liquidity management would be less efficient and the adjustment to changes in the borrowing requirement less flexible. The risk is that if the borrowing requirement temporarily increases, we would for example need to borrow long only to then buy the loans back.

In order to avoid such effects, frequent changes in the guidelines may be required. In practice, the result could be that the Ministry of Finance would be more involved in the day-to-day decision making on borrowing and that the delegation of the borrowing would be revoked in part. Such an arrangement has both practical and principal disadvantages. In part, this would create extra work at the Debt Office and at the Ministry of Finance. In part, it would create uncertainty on the division of responsibility and risks undermining the flexibility in the handling of the government's borrowing within the framework of a clearly delegated responsibility which for many years has guided the management of the Swedish central government debt.

It should be noted that when the guidelines during the first years included steering of the maturity profile, the share of maturing loans for the next twelve months could be 30 per cent maximum. The maturities are currently far lower, not the least seen in relation to the smaller debt.

5.3 Proposal for new guideline

We assess that it would be unsuitable to introduce some form of quantitative steering of the refinancing in the guidelines as this would risk leading to operative limitations and higher costs. However, it would be justified to complement the guidelines, purely for clarity, in qualitative terms so that the refinancing risks are dealt with explicitly. We suggest that the guidelines are complemented with the following paragraph.

“The Debt Office should take *the refinancing risk* in the management of the central government debt into consideration”.

It is then the task of the Debt Office, when evaluating the activities, to report the extent to which we have lived up to the requirement to consider refinancing risks in the management.

5.4 Measures for reducing the financing risks

During certain periods, we need a substantial short-term borrowing due to variations in the payments made by the government. This is regardless of the size of the central government debt and even if the government budget has a surplus for the year as a whole. The government's funds vary greatly within months and between months. On some days, there can be a deficit or a surplus of up to SEK 100 billion.

A large part of the government's net payments are made in December every year (due to factors outside the control of the Debt Office). According to our latest prognosis, the net borrowing requirement will for December 2012 is around SEK 99 billion, which is an amount greater than the total volume of maturing bonds during the year.

FIGURE 9 NET BORROWING REQUIREMENT¹ PER MONTH, THE AVERAGE FOR THE YEARS 2007-2011.



We know when the loans fall due and their sizes. We equally know that we have a considerable borrowing requirement in December. We are able to prepare for this by designing our borrowing plans so that we have secured the financing well in advance.

It is different with unexpected changes in the budget balance. Even if we make prognoses, it is unavoidable that the end result may deviate from the prognosis, not least during periods with a great level of uncertainty in terms of the economic development. An unpredicted increase in the budget deficit (net borrowing requirement) thus constitutes a considerably greater risk than known future payments.

It is therefore our opinion that it would be more purposeful to take measures to limit the financing risks than to attempt to reduce the refinancing risks further. Such a measure would be to review the government's payments with the aim of reducing the seasonal variations.

We would also like to underline that an efficient domestic government bond market is central to being prepared for managing large needs for borrowing in the future. A liquid government bond market is a prerequisite for reaching a

¹ The budget balance with reversed symbol.

broad investor base and thereby keeping the financing risks low.

In last year's proposed guidelines, we discussed the risk of a lower liquidity if we cannot maintain a large enough borrowing in government bonds against the backdrop of the expectation that the central government debt is expected to reduce over time. We are not worried that lower liquidity may lead to an increased financing risk during the next few years. The risk has rather reduced over the short term as we have revised the prognosis upwards for borrowing in government bonds for 2012 and 2013. The problem, however, remains over the long term.

In the guidelines proposal for 2012, we raised the issue on how to handle the central government debt management when the government's financing needs no longer create a large supply of government bonds. Experiences from the financial crisis show the importance of government bonds for financial stability. Another aspect is the special position that government bonds are given in the regulation of financial institutions. In the extension, it may be that the objectives for the management of the central government debt may have to be extended.

When evaluating the government's borrowing and debt management, the government announced that it intends to appoint a review on the functioning and importance of government bonds for financial stability. We welcome this and are, of course, prepared to assist the review in any way we can. The outcome of the review can provide guidance on how to handle the risk of lower liquidity and therefore lower levels of preparedness.

6 Active debt management and taking of positions

The government makes decisions on the exposure of the central government debt to inflation and currency variations and interest rate fixing risks. It is therefore the task of the Debt Office to ensure that the debts are given the characteristics stated in the guidelines. This can be done in numerous ways. We must therefore take a great number of decisions on the choice of borrowing instruments, adjustment of the exposure with derivatives etc. Also in this work, we are guided by the objective of minimising the costs long-term taking risk into consideration. Well thought-out and active choices of loan techniques and debt management instruments are thus part of our task of managing the central government debt.

The Debt Office's decision on the management of the central government debt is therefore characterised by an active attitude. The majority of the decisions – just as the government's overall guidelines – are difficult to evaluate afterwards. This is, among others, due to the fact that they neither can nor should be evaluated in terms of market value and there are therefore no clear benchmarks (an alternative cost) to compare with.

For other active decisions, in particular so-called positions which relate to exposure to exchange rates and interest rates (in foreign currency) through derivatives, there are quantitative measures for evaluation. The real consequences of a decision however do not depend on whether the result can be measured or not.

A passive attitude, were we aim to deviate as little as possible in relation to the benchmarks, consequently does not mean that the risks disappear. It may even be that a decision to increase the currency share in relation to a benchmark at a certain point, could reduce the government's risk (and reduce the costs afterwards). The extent to which decisions of the later type can be measured still means that they receive a much greater degree of attention, both before and after.

That numeric results attract attention is probably unavoidable (and not unique to the management of the central government debt). It is more important that such results – and the decisions behind them – are seen in their context. The purpose of the first part of this section is to explain how the active attitude of the Swedish National Debt Office to debt management works and how the taking of positions fits into this attitude. In the second part, we make proposals on certain clarifications in the government's guidelines for the active management. This is in response to a task that the government gave us in April of this year.

6.1 Active management

The goal of central government debt management is to minimise the long-term costs while taking the risks into account. The government's assessment as to how best to achieve this is expressed in the guidelines. The benchmarks for the composition and maturity of the debt may be stated in several different ways. The Debt Office draws up borrowing plans with aims to cover the need for financing and to give the debt its desired composition and maturity. The plans include active decisions on the choices on maturities and instruments. They are based on assessments on how we should act in order to also, in the continuing management, minimise the costs taking risk into consideration. This is for example true when choosing what maturities or currencies to borrow in. As our domestic borrowing is based on the principles of transparency and predictability, the levels of freedom are not unlimited, but continuing decisions on how to finance the debt are still needed.

By using derivatives as swaps and interest rate futures in order to adjust the exposure, we are also able to partially separate decisions on what instruments and maturities that are to be issues based on the objectives of our exposure. Here too, continuous active decisions are required, for example on how we are to balance funding through bills with long-term borrowing which by using swaps gives a short interests rate fixing period and to what extent we should borrow directly in foreign currency

or use derivatives respectively in order to turn a krona debt into foreign currency obligations.

The costs that are the consequence of both more long-term and continuous decisions depend on the development for interest rates, exchange rates, inflation etc. Even if we continuously maintain the exposure that the government indicates in the guidelines and the borrowing plans that we publish three times a year, we are thus exposed to risks. There is no way to manage the debt which automatically eliminates all risk.

The meaning of the active management in terms of borrowing is in part that we try to assess the risks that are the consequence of the market developments, changes in borrowing requirement, economic cycles, changes to the market structure, investment behaviour and new financial risks and in part undertake adjustments in borrowing and exposure with the aim of reducing costs and risks.

In the same way, we have an active attitude to the guidelines on exposure so that we constantly evaluate the costs and risks. If we assess that the risk for high costs are great, we make adjustments in relation to the benchmarks just as we make adjustments in the continuous borrowing. These adjustments are done with derivatives and are defined as positions. They are therefore the subject of careful following up and performance measuring. It is the effect on costs that is measured but it is unavoidable that changes to the characteristics of the debt also affect the risks.

In this context, it is important to point out – as has been done in previous proposed guidelines – the distinction between absolute and relative measures of costs and risks. What the mandate ultimately is about are the absolute costs, that is how much the government over time has to pay to finance the central government debt. It is therefore also clear that the most important risk is that the absolute costs end up being unexpectedly high. The measure of costs that we describe in section 3.2 above also capture the absolute costs for the central government debt.

One problem when performing the evaluation is that we do not have a well-defined alternative with which to compare the realised absolute costs. If we had borrowed in another way or if the debt had had a different composition, the costs would have been different, but given that there is no stable method for stating in advance what such a reasonable "other way" would be, this observation is of little value. And even if we were to produce some kind of measurement of result, it is difficult for us to evaluate the risks in both of the portfolios that are being compared. This is the reason why we do not have any quantitative evaluation of either the government's guidelines or the borrowing decisions of the Debt Office.

When we are dealing with positions, we have quantitative measures, but these relate to relative costs and not absolute. If the Debt Office, as happened in 2009, takes a position by moving a sum corresponding to SEK 50 billion from a krona debt to a EUR debt, we can calculate a result when the debt has returned to the benchmark. The result is based on the value of a number of actual transactions on the market and is to that extent robust. If the result is positive, we say that we have made a profit (a saving). This is correct given that we compare with not having carried out the transactions but that measure then only provides a partial picture of the effects. The increase in the currency debt also altered the absolute currency exchange rate risk of the central government debt but it was our assessment that this was more than compensated for by us being able to reduce the costs by lowering the currency debt when the value of the Swedish krona was normalised.

This example illustrates that more or less temporary market situations can occur where our normal fundamental assumption that all types of debt have the same expected costs does not apply. Our mission to manage the central government debt as cheaply as possible then requires us to take an active role. *Not* to act has an alternative cost. This is reflected in that the absolute costs become higher than necessary but precisely because it is a matter of costs in absolute terms, they disappear in the reporting.

In situations where the lack of decisions means that those responsible can declare a zero result, there is a built-in carefulness or even inertia in the process. This applies reasonably also to the Debt Office. We have been able to achieve positive results on our strategic positions, but there is always cause for the Debt Office to continuously reflect on our decision-making processes.

Fundamentally, however, the Debt Office considers the careful follow-up of our positions to be a strength. This provides us with clarity and focus in the activities, which is healthy. It should also be pointed out that we have, for many years, organised the taking of positions in such a way as to enable follow up. Positions are thus taken using derivative instruments that are accounted for separately from the other parts of the debt. This means that decisions on positions, both in terms of decisions and in terms of evaluation, can be separated out from the rest of the activities. Also if we in terms of absolute costs would be able to achieve the same sort of result by redistributing the borrowing between kronor and foreign currencies, an arrangement with a clear follow-up is to be preferred.

It should also be noted that we have a higher level of ambition in terms of follow up for the Swedish central government debt than is true of most other countries. In countries which do not use derivatives as swaps and who also do not have anything that corresponds to what we call positions, decisions are made all the same which create and alter the exposure of the central government debt. There is a difference between borrowing for a year

or for thirty years whether you calculate a result or not. The lack of positions that formally can be evaluated does thus not mean that the manager of the central government debt can avoid making decisions which in reality have the same consequence.

The fact that the positions of the Debt Office are so clearly accounted can give the impression that the taking of positions has been loosely added on. Fundamentally, however, this should be seen as a more efficient way to allow assessments on the conditions for the management of the central government debt to be expressed in concrete – and active – decisions. Our way of working with the taking of positions has grown out of the need to actively deal with new information on expected costs and risks. To this extent, this is an integrated part of an efficiently organised debt management and our aim to, as best we can, evaluate our activities.

It is worth noting that the transactions that are defined as positions have contributed to lower costs for the central government debt over the circa 20 years that we have been operating like this. One of the reasons that the operations have been successful may possibly be attributed to the fact that we have the ability to act more long-term than a normal manager. Our positions, when we make larger adjustments of our exposure, often have a horizon that goes further beyond than just the next twelve months.

One side-effect of the fact that we have the ability to separate financing decisions from pure and active adjustments of the exposure is that we therefore have an increased ability to follow-up and analyse the markets in a more focused way than we otherwise would do. We also therefore acquire a broader and better competence in financial matters both in terms of instruments, risk management and markets. This environment creates better opportunities to an efficient handling also of the more continuing borrowing activity.

Our positions are taken in part through our own decisions but also using external managers. The external management provides us with a measure of how well we are handling the activities as we can compare ourselves with the result of others.

The positions that we take out ourselves are structured so that we continuously follow up, analyse and continuously and actively adjust our exposure. In cases where, in our assessment, the balance between expected profit and risk is particularly beneficial, for example when the pricing is what can be described as extreme, we do from time to time take larger and more long-term positions. This is true, for example, for the exchange rate between the USD and the EUR and between the krona and the EUR. It is however important to note that this is the same activity even if the so-called strategic decisions are anchored in the organisation by a decision of the board. Larger

positions need a greater degree of anchoring in order for it to be possible to take them.

6.2 Demarcation of markets for the taking of positions

The goal of central government debt management is to minimise the long-term costs while taking the risks into account. To this end, we act, among other things, on foreign capital and derivative markets when dealing with the central government debt. The continual taking of positions actively monitors the international development on the markets where we act directly or potentially for the underlying debt. The continuing taking of positions is thus an integral part of the management of the central government debt.

The ability of the continual taking of positions of achieving a good long-term result in relation to risk depends on the number of permitted markets. Our historical result indicates that the markets that are currently used fulfil this requirement. These markets have well-developed and liquid credit and derivative markets which enables a cost-efficient borrowing and management of the debt.

The risk-adjusted result is often described using the so-called information ratio which, simply put, is the ratio of the result and the fluctuations of the result series. The higher the ratio, the better. The information ratio increases with the number of independent positions. If we have two independent series and add these together, the total result will be the sum of the two series. At the same time, the fluctuations in the compounded series will not increase to the same extent, so long as the correlation is less than one. The result is a higher information ratio. We can illustrate this with a simplified example in the table below. Two series with the same return and the same variation will, when they are added up, result in a higher information ratio due to the fact that they are distributed differently over time.

TABLE 1 EXAMPLE OF DIVERSIFICATION EFFECTS

	Market A	Market B	Market A+B
Return year 1	1	1	2
Return year 2	-1	1	0
Return year 3	1	-1	0
Total return	1	1	2
Standard deviation	0.9	0.9	0.9
Information ratio	1.1	1.1	2.1

The continual taking of positions by the Debt Office has historically provided a result corresponding to an information ratio of 0.36. A not insignificant part of this can be explained by positive diversification effects due to the markets where we are allowed to act. A high information ratio is not only achieved due to skills and the number of permitted markets, but positive diversification characteristics are also achieved with a multitude of management strategies. The importance of this variety is

illustrated by our own and our external managers historic results and their distribution over time.

If we look just at the external managers' result, they have an information ratio corresponding to 0.16 on average. On the other hand, if we aggregate the performances of the result series rather than take an average, the total result is the same but the volatility of the consolidated series is lower and thus, the information ratio increases. We can also clearly observe this as the information ratio increases to 0.46. In the same way, we can see that the continuing internal taking of positions has reached an information ratio of 0.26 but if we aggregate the continuing internal with the continuing external taking of positions, the total information ratio is thus 0.36. The fact that the diversification effect is proportionately lower when we aggregate the internal with the external taking of positions can be explained by the fact that the internal taking of positions is so much greater compared to the external. The positive diversification effects are then lower but can still be clearly observed.

TABLE 2 RISK-ADJUSTED RESULT FOR THE CONTINUING TAKING OF POSITIONS, JANUARY 2001-JUNE 2012

	Annual result	Annual standard deviation	Information ratio
Internal management	5.6	21.8	0.26
External management			
Average	14.6	86.1	0.17
aggregate	14.6	35.3	0.47
Total aggregate	7.4	21	0.36

The positive diversification effects in the positions taken are evident. The opportunities with a good risk-adjusted return will increase with the number of uncorrelated positions in a corresponding manner. A better result in terms of expected return at a given level of risk would thus theoretically be possible to achieve if we included more markets and instruments where we could take positions. Our position taking should, however, be considered as active risk management linked to the management of the underlying debt. There are no shares or commodities included in the debt. It would therefore not be reasonable to set up such a broad portfolio for positions. We have therefore chosen only to use markets that are related to the management of debt. Historic performance also indicates that positive diversification characteristics have already been achieved in the current, permitted markets and management of the taking of positions.

A further requirement is that markets must have a high level of liquidity and efficient derivative markets. At the same time, we have chosen not to limit ourselves only to those markets that are currently included in the debt. That would lead to an erratic taking of positions at the same

time as the diversification would be too limited: the risk in relation to the expected return would increase.

6.3 Proposal for a new guideline

The current regulatory framework thus appears suitable and well-adjusted. The Finance and Risk Policy decided by the board of the Debt Office has for many years now stipulated which markets and instruments are available to the active management. It is our assessment that it is not purposeful to substantially alter the framework for the day-to-day taking of positions.

On the other hand, the government has requested a clear codification of the current arrangements. We therefore suggest that the qualitative description of which markets are available is moved from the Finance and Risk policy to the government's guidelines. However, the mandate to state specifically which markets fulfil these requirements at any given time and which should therefore be considered as available should also in the future be decided by the board of the Debt Office.

Against this background, we propose the following supplement to the guidelines regarding position-taking:

"Positions may only be taken in markets that allow for the market risk to be managed by liquid and otherwise well-developed derivative instruments and which potentially constitutes a funding currency within the framework of the debt management."