RIKSGÄLDS KONTORET
THE SWEDISH NATIONAL DEBT OFFICE

Central Government Borrowing:

Forecast and Analysis

2003:2

Foreword

The Swedish National Debt Office publishes *Central Government Borrowing: Forecast and Analysis* three times per year. The report plays an important role in our operations. Clear information about the government's borrowing requirement and funding helps increase the predictability of government debt management. This may reduce our long-term borrowing costs. The report also contains a number of special articles in which the Debt Office presents background information and in-depth analyses related to our operations.

In *Central Government Borrowing: Forecast and Analysis, 2003:2*, the Debt Office reports that we expect the government's borrowing requirement to rise in 2004. We forecast a borrowing requirement of SEK 41 billion, compared to SEK 27 billion this year. During 2003 various nonrecurring payments to the Swedish state will lower the borrowing requirement. For example, due to premiums on newly issued debt – which are reported as interest income – interest payments will be SEK 15 billion lower. During 2004, such premiums will decrease to SEK 7 billion.

During 2003, the Debt Office increased its issues of krona-denominated bonds. The debt portfolio has now been adjusted to our duration target, and starting in September 2003 we plan to lower our issue volume to SEK 4 billion per auction. We expect to continue issuing inflation-linked bonds totalling SEK 15 billion during 2004. Our plans are based on continued foreign currency debt amortisations equivalent to SEK 25 billion during 2004. If Sweden votes Yes to membership of EMU (the euro zone) in the September referendum, there may be reason to stop amortising foreign currency debt as early as this autumn.

EMU is also the theme of two articles in this issue. One deals with how the Debt Office's borrowing will be affected by possible Swedish accession to the currency union. It should be viewed as a status report and an invitation to discussion. The second article describes how some of the smaller euro zone countries have chosen to manage their sovereign debt in EMU. A third article explains how the Debt Office reduces counterparty risks in debt management by means of so-called CSA agreements, a technique for exchanging collateral between parties to a derivative contract. Finally, there is an article on state loan guarantees and how the rules for calculating guarantee fees should be changed. The fee should reflect the market price of risk, thereby making a good rule system even better.

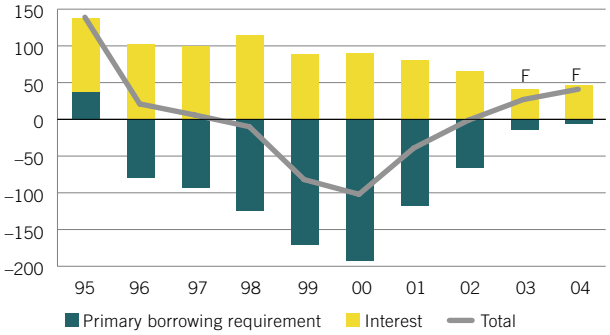
Thomas Franzén
Director General
The Swedish National Debt Office

The central government borrowing requirement

The Swedish National Debt Office's forecast of the borrowing requirement in 2003 indicates a deficit in central government payments of SEK 27 billion, in principle unchanged from the February forecast. The borrowing requirement is projected to rise to SEK 41 billion in 2004. Adjusted for nonrecurring effects, however, central government finances will improve by SEK 10 billion from 2003 to 2004, mainly due to growing tax bases. This is a consequence of the more favourable Swedish economic performance expected in 2004. In case of a more prolonged economic slowdown, there may be no improvement in central government finances next year.

Central government borrowing requirement, 1995–2004

SEK billion



Forecast for 2003

The Debt Office's revised forecast for 2003 indicates a borrowing requirement of SEK 27 billion. This assessment is essentially the same as in February, when the forecast indicated a payments deficit of SEK 26 billion. Due to a lower borrowing requirement than expected during the period February to May, the full-year figure is unchanged despite the fact that we have now chosen to remove SEK 5 billion in revenues on divestments of state-owned assets from our forecast.

The forecast has also taken into account the proposals unveiled by the Government in its spring budget bill to ensure, among other things, that its budget does not exceed the expenditure ceilings. The Debt Office's previous forecasts had included an item of SEK 5 billion for unspecified reductions in cash expenditures to take into account efforts to keep the budget below the expenditure ceiling. We have now lowered this item to SEK 2 billion as a result of proposals that have been announced by the government.

The primary surplus (all central government payments excluding interest payments) is estimated at SEK 14 billion or SEK 1 billion more than in the February forecast. The underlying improvement is SEK 5 billion larger, however, since divestment revenues in this amount have been removed from the forecast, as the Debt Office is no longer counting on any revenues from divestments of state-owned assets. The outcome for the months of February, March, April and May was SEK 8 billion higher than expected. This is explained by larger supplementary tax remittances as well as smaller disbursements from a number of central government agencies. Payments to the European Union (EU) were also smaller than expected. To date, payroll- and consumption-related taxes have followed the forecast. The well publicised increases in sickness benefit costs slowed, which the Debt Office had also assumed earlier. The Debt Office's net lending to central government agencies, state enterprises and state-owned companies is expected to total SEK 15 billion, unchanged from the February forecast.

Interest payments on central government debt will amount to an estimated SEK 41 billion, which is SEK 2 billion more than the previous forecast. One reason for the higher forecast is that premiums on newly issued debt securities up to and including May were less than previously estimated. A more detailed account of how premiums affect interest payments is found in the February edition of this report. The Debt Office's forecast of interest payments on the central government debt is based on the interest rates and exchange rates prevailing on the forecast date. The cut-off date for the current forecast is June 10, 2003.

Forecast for 2004

The Debt Office's forecast for 2004 indicates that there will be a deficit of SEK 41 billion in central government payments. This assumes that the growth of the Swedish economy, which has been weak in recent years, will prove more favourable during 2004. In spite of this, we expect the borrowing requirement to rise during 2004. Adjusted for nonrecurring effects however, central government finances will improve by SEK 10 billion between 2003 and 2004, mainly as a consequence of growing tax bases.

The nonrecurring payments will fall by a total of SEK 25 billion. Maturing mortgage bonds will decline by the equivalent of SEK 10 billion. In addition, we expect premiums on bonds to decline by SEK 8 billion, which will increase interest payments correspondingly. Premiums occur when we issue bond loans with a coupon interest rate that exceeds the market rate.

Tax revenues normally follow nominal economic developments. Due to Sweden's relatively high tax rates, central government finances are greatly affected both by upturns

and downturns. The Debt Office bases its forecast on the macroeconomic picture presented in the March publication of *The Swedish Economy* by the National Institute of Economic Research. The current outlook is unusually uncertain. To date, the recovery in the Swedish economy has occurred more slowly than expected. There is thus a risk that the cyclical turnaround will be further delayed. In the present situation, it appears more likely that the borrowing requirement will exceed the forecast than that it will be smaller.

The Debt Office's forecasts of the central government debt and the borrowing requirement are summarised in the table below, which also presents the outcome for 2002.

Central government borrowing requirement and debt, 2002 – 2004, SEK billion

	2002	2003 (forecast)	2004 (forecast)
Primary borrowing requirement	–66	–14	–6
Interest payments on debt	65	41	47
Net borrowing requirement	–1	27	41
Debt adjustments	51	0	0
Deposit Guarantee Board	39	–	–
Nuclear Waste Fund and Premium Pension Authority	–32	–11	0
New measure of debt*	44	–	–
Short-term investments	–2	0	0
Change in central government debt	48	16	41
Debt at year-end	1,204	1,220	1,261

** A new measure of central government debt was introduced on January 1, 2003. A detailed description of this new measure is found in Central Government borrowing, 2003:1, page 5.*

The primary surplus is estimated at SEK 6 billion. This is SEK 8 billion lower than in 2003. Due to the cyclical upturn, we expect consumption- and payroll-based taxes to increase. Due to productivity-raising efforts and cost reductions that have occurred in the business sector, we expect corporate profits to rise when growth takes off. Even if this does not lead directly to higher tax revenues, due to accumulated losses, we nevertheless anticipate some increase in corporate tax payments.

Part of the increase in incoming payments will be offset by higher disbursements. Increased taxes on wage income will largely be channelled to Swedish local governments. Due to the structure of the social insurance system, pensions and other benefits largely follow nominal growth. Central government disbursements for sickness benefits continue to rise. However, the pace of the increase slows appreciably between the years. During 2003, we expect disbursements for daily social insurance benefits, which mainly consist of sickness benefits, to increase by 7 per cent. We expect disbursements during 2004 to increase by 3 per cent. In addition, subsidies to farmers will increase by SEK 4 billion in 2004 compared to 2003, since the benefit for 2003 was already disbursed during 2002.

Net lending by the Debt Office is expected to total SEK 19 billion. This is SEK 4 billion more than in 2003. The increase is due, among other things, to increased lending for infrastructure projects.

The Debt Office makes no forecasts of its own as to whether central government expenditures risk exceeding the expenditure ceiling. Based on forecasts from the Swedish National Financial Management Authority (ESV) and the National Institute of Economic Research (NIER), however, we anticipate that the Government will implement SEK 5 billion worth of reductions in cash expenditures in order to keep its budget below the expenditure ceiling during 2004.

We are also assuming, exactly as for 2003, that there will be no divestments of state-owned property during 2004. This is SEK 15 billion lower than the Government's estimate in the spring budget bill, but in line with the experiences of recent years, when such divestment revenues have not materialised. It should be noted that both the assumption about divestment revenues and the assumption about reductions in cash expenditures aimed at keeping the budget below the expenditure ceiling are uncertain.

Interest payments on the central government debt will amount to an estimated SEK 47 billion in 2004. The increase between 2003 and 2004 is mainly due to the projection that premiums on bond issues will diminish by SEK 8 billion. Interest payments will thus approach a more normal level, in relation to the size of central government debt and current interest rates. If a long-term bond is introduced, the premiums will decline further, which would lead to higher interest payments. For further information, see the funding section.

Sensitivity analysis

All forecasts include an element of uncertainty. The Debt Office does not produce any overall uncertainty analysis for the borrowing requirement, but presents a partial analysis of the impact on the borrowing requirement that changes in some important macro variables, roughly estimated, will have in a one-year perspective. If one wishes to make an assessment of an alternative scenario in which several variables develop differently, their effects must be added together.

Sensitivity analysis, SEK billion

One per cent/percentage point point increase	Effect on borrowing requirement
Total wages and salaries [1]	–6
Household consumption, current prices	–2
Registered unemployment	4
Swedish interest rates	3
International interest rates	1
Exchange rate	0.5

[1] Local taxes based on working income are disbursed to the local governments with a one-year time lag. As a result, the effect on the central government borrowing requirement in a one-year perspective – the time horizon in the table – is larger than the permanent effect.

Borrowing requirement adjusted for nonrecurring effects

The borrowing requirement is forecasted at SEK 27 billion this year and SEK 41 billion next year. Adjusted for nonrecurring payments, calculations indicate a borrowing requirement of SEK 45 billion this year and SEK 35 billion next year. The underlying borrowing requirement will thus shrink by SEK 10 billion next year, even though the actual borrowing requirement will increase. The expected cyclical upturn in the economy is the most important reason why the underlying borrowing requirement will decline next year. Nonrecurring payments will thus reduce the budget deficit by around SEK 20 billion in 2003, while nonrecurring payments next year will increase the borrowing requirement by around SEK 5 billion.

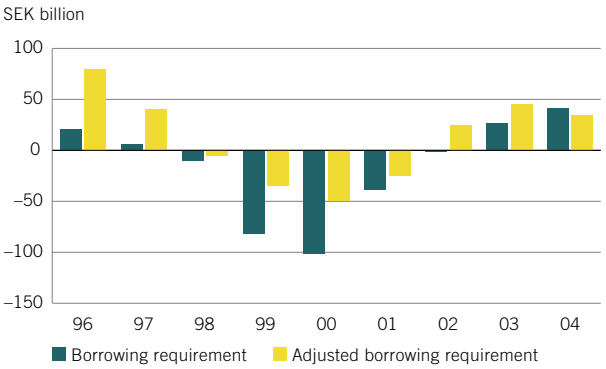
This year's nonrecurring payments of SEK 20 billion consist largely of SEK 13 billion worth of maturing mortgage bonds that were transferred from the National Pension Funds and of premiums of SEK 15 billion on bond issues. Working in the opposite direction is SEK 12 billion of the Debt Office's net lending, mostly study loans. The latter are defined as nonrecurring disbursements since the loans are eventually expected to be repaid to the central government. The table below shows the borrowing requirement adjusted for nonrecurring payments for 2000 to 2004.

Borrowing requirement adjusted for nonrecurring payments, SEK billion

	2000	2001	2002	2003	2004
Borrowing requirement	–102	–39	–1	27	41
Divestment of government property	76				
Extra dividend from the central bank			20		
Transfers from National Pension Funds	45	42	7	13	4
Net lending	–56	–25	–3	–12	–17
Interest payments	–14	–5	–1	15	7
Other	1	2	–2	3	0
Adjusted borrowing requirement	–50	–25	20	45	35

In 2004, nonrecurring disbursements are expected to be larger than nonrecurring payments to the central government. We anticipate that the central government must borrow a total of SEK 5 billion to fund nonrecurring payments. During 2004 SEK 4 billion worth of mortgage bonds will mature, and gains related to bond issues are expected to total SEK 7 billion. Nonrecurring disbursements from the Debt Office's net lending will total an estimated SEK 17 billion.

Reported and adjusted borrowing requirement



Comparison to other forecasts of the borrowing requirement

The Debt Office's forecast for 2003 indicates a borrowing requirement of SEK 27 billion, the same as in the National Institute of Economic Research's (NIER) forecast. The Swedish National Financial Management Authority (ESV) and the Government anticipate a borrowing requirement of SEK 33 billion and SEK 21 billion, respectively (see the table below). Adjusted for known differences in divestment and interest rate assumptions, the Debt Office's forecast indicates a lower borrowing requirement than the NIER, ESV and Government forecasts. The differences are small, however. The NIER presented its most recent forecast of the central government borrowing requirement in March, ESV and the Government in April.

The Debt Office's forecast for 2004 indicates a borrowing requirement of SEK 41 billion, which is higher than in both the Government and NIER forecasts, but lower than in the ESV forecast. Adjusted for known differences in divestment and interest rate assumptions, the borrowing requirement is SEK 2 billion lower than the Government forecasted and SEK 12 billion lower than ESV, but SEK 10 billion higher than the NIER.

The big differences between these borrowing requirement forecasts for 2004 should perhaps be viewed in light of a comparison between years. In the NIER forecast, the borrowing requirement is not expected to change at all, which is surprising, considering the decline in nonrecurring payments during 2004. ESV foresees a relatively sharp deterioration in central government finances, which is probably explained by a different view of the expenditure trend. ESV anticipates that the central government budget will exceed the expenditure ceiling by SEK 17 billion.[1]

[1] Like ESV and the NIER, the Debt Office assumes no divestment revenues during 2003 and 2004. The Government, however, assumes that such revenues will amount to SEK 15 billion in both years.

Comparison between borrowing requirement forecasts, SEK billion

	Debt Office		Government		NIER		ESV	
	03	04	03	04	03	04	03	04
Primary borrowing requirement	–14	–6	–21	–19	–12	–16	–6	6
Interest payments	41	47	42	46	39	43	39	47
Net borrowing requirement	27	41	21	27	27	27	33	53

Monthly forecasts

The Debt Office presents annual forecasts three times per year. At the same time, we publish monthly forecasts for the intervening months. Between regular publications, the

Debt Office only makes revisions of annual and monthly forecasts in exceptional cases. In these cases, the revised forecast is presented in conjunction with the presentation of the monthly borrowing requirement outcome, which occurs five working days after the end of each month. The forecast for the June 2003 borrowing requirement is SEK –2.9 billion (budget surplus), which is a surplus SEK 1.9 billion larger than the previous forecast. The large borrowing requirement in August is explained by disbursements of refunds for excess tax payments.

Central government borrowing requirement 2003, SEK billion

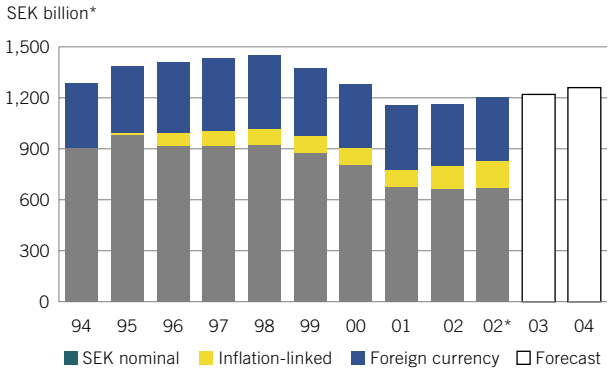
	June	July	August	September	October
Primary borrowing	–23.9	3.4	–2.1	–16.3	–2.1
Interest payments	3.9	3.4	2.7	8.6	1.1
Net borrowing requirement	–20.0	6.9	0.5	–7.7	–1.0

The central government debt

At the end of May 2003, the central government debt was SEK 1,199 billion, which represented a decline of SEK 5 billion since the close of 2002. The re-evaluation of foreign currency loans due to the stronger krona exchange rate reduced the debt by SEK 13 billion. After January 1, 2003, the central government budget balance increased the debt by SEK 6 billion and other debt-related transactions by SEK 2 billion.

Looking ahead, there are no other known effects influencing the debt other than the central government budget balance. The central government debt is thus projected to increase as much as the borrowing requirement. This means that the central government debt at the close of 2003 is expected to total SEK 1,220 billion. At the close of 2004, the central government debt is expected to total SEK 1,261 billion.

Government debt



** A new measure of central government debt was introduced in the beginning of 2003. The comparisons in the text are made using the new measure, which is marked by * in the chart.*

Funding

Despite an increased funding requirement next year, the Debt Office plans to reduce its issue volumes of nominal Treasury bonds from SEK 5 billion to SEK 4 billion per auction from September. Without reducing these bond issues, the Debt Office would exceed its target for debt maturity (duration). The Debt Office estimates that there will continue to be potential to issue inflation-linked bonds at an annual pace of approximately SEK 15 billion. Foreign currency borrowing will decline from SEK 18 billion to SEK 12 billion next year.

Gross borrowing

As indicated in the preceding sections, the *net borrowing requirement* is expected to be SEK 27 billion in 2003. This is marginally more than in the previous forecast. The net borrowing requirement is expected to rise to SEK 41 billion next year. In addition, the Debt Office needs to fund maturing bond loans and buy-backs. The *gross borrowing requirement,* i.e. the Debt Office's total funding requirement, is expected to be SEK 127 billion this year and SEK 145 billion in 2004. Of this, the Debt Office plans to fund SEK 130 billion and SEK 113 billion, respectively, with bond loans in kronor and foreign currencies.

Funding, 2003 and 2004, SEK billion

	2003	2004
Net borrowing requirement	27	41
Changes in the cash equivalent holdings [1]	18	6
Maturing bond loans, plus exchanges and buy-backs	82	98
Maturing Treasury bonds	10	21
Maturing foreign currency loans [2]	27	25
Buy-backs and exchanges of bonds to bills	45	52
Total	127	145

	2003	2004
Borrowing from households	2	2
Net funding with Treasury bills [3]	–4	31
Bond issues, gross	130	113
Foreign currencies [2]	9	6
Inflation-linked bond issues [4]	15	15
Nominal Treasury bond issues [5]	106	92
Funding	127	145

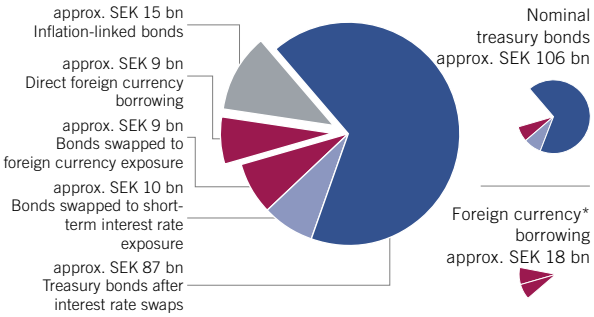
[1] Change in outstanding deposits, liquidity bills and repos.
[2] Direct foreign currency loans, spot market, valued at acquisition prices.
[3] Change in the stock of Treasury bills.
[4] Average issue volume per auction month. 1.7 1.7
[5] Average issue volume per auction. 4.6 4.0

Note: The table presents the allocation of the funding requirement by types of debt. A number of items are technical assumptions rather than forecasts or plans.

The above table presents an assessment of the allocation of bond issues during 2003 and 2004 among nominal Treasury bonds, inflation-linked bonds and foreign currency borrowing, as well as the scale of swaps that the Debt Office expects to use in order to achieve its targets for duration and for the pace of foreign currency debt amortisation.

Funding in bonds and foreign currency loans, 2003

Equivalent to SEK 130 billion



** Short term foreign currency borrowing excl. Commercial paper*

Nominal krona borrowing

Net borrowing in Treasury bills

The stock of Treasury bills is expected to diminish by SEK 4 billion during 2003. As a share of total central government debt, Treasury bills will thus decline slightly.[1] During 2002, the share was somewhat too large to provide the desired maturity profile. During 2004, the outstanding stock will increase by SEK 31 billion. To ensure that nominal krona debt will not have too long an average maturity, it will be necessary to increase borrowing in Treasury bills.

The Debt Office may also create short-term borrowing by issuing bonds and then using interest rate swaps in order to shorten the interest rate refixing period.[2] Provided that the difference between the swap interest rate and the Treasury bond interest rate is sufficiently large, this technique provides an opportunity to lower central government borrowing costs. Given the limited need to use swaps in foreign currency borrowing, there is also room for this technique. The Debt Office expects that it will be justified from a cost standpoint to carry out about SEK 10 billion of its short-term borrowing in this way during 2003 and about SEK 20 billion during 2004.

[1] The above table also reports the change in cash equivalent holdings. This item includes changes in outstanding short-term funding (i.e. liquidity management instruments such as liquidity bills, overnight loans and repurchase agreements=repos), which mainly arise as a consequence of cash flows around the turn of the year that are difficult to forecast. This item is included in order to achieve consistency in reporting. The net change in Treasury bill borrowing is of greatest interest when discussing longer-term funding.

[2] See box on borrowing instruments and swaps on the next page.

Borrowing instruments and swaps

Somewhat simplified, the guidelines for central government debt policy imply that the Debt Office shall achieve a given exposure in short-term and long-term borrowing, respectively, and between kronor and foreign currencies (in terms of a given pace of amortisation of foreign currency debt), respectively. These targets can be achieved by allocating government borrowing between Treasury bills, Treasury bonds and foreign currency borrowing. The Debt Office also uses derivatives (mainly interest rate and currency swaps) to order to achieve the desired exposure.

In order to create a short-term interest rate exposure via the swap market, as a first step the Debt Office issues a bond in Swedish kronor. Then it carries out an *interest rate swap* in Swedish kronor, in which the Debt Office receives fixed interest and pays floating interest (Stockholm Interbank Offered Rate, STIBOR). The gain on this transaction is that the interest rate on the bond is lower than the interest rate that the Debt Office receives in the interest rate swap (the difference is called swap spread). Meanwhile the Debt Office pays a somewhat higher interest rate (STIBOR) than the Treasury bill interest rate. This borrowing technique leverages the central government's relative strength as a borrower in long maturities, enabling it to reduce its borrowing costs.

Creating foreign currency exposure via the swap market involves using the domestic bond market as a source of borrowing (*krona/swap borrowing*). First the Debt Office issues a bond, which is swapped to short-term interest (see above). Then it carries out a "basis swap", which involves changing a floating interest rate in kronor for a floating interest rate in a foreign currency. Meanwhile the Debt Office buys the foreign currency in the spot market when it enters into the transaction and sells the foreign currency when closing it. The basis swap has the same maturity as the interest rate swap but interest payments are based on three- or six-month floating interest rates. In the basis swaps, the Debt Offices receives floating STIBOR and pays floating interest in euro at the European Interbank Offer Rate (EURIBOR). Using this technique, the Debt Office can take advantage of the swap spread minus a small cost for implementing the swap. In principle, the borrowing cost is thus the floating EURIBOR rate minus the swap spread.

Foreign currency borrowing can thus be implemented as borrowing in a foreign currency (direct foreign currency borrowing) or via krona/swap borrowing. *Short-term borrowing* can be implemented by issuing Treasury bills or by first issuing a Treasury bond and then carrying out an interest rate swap (synthetic bills).

In practice, the room for interest rate swaps is limited by the fact that the Debt Office is a large player in this market. This room can be used to replace Treasury bills or as a part of foreign currency borrowing. In the trade-off, the costs of direct foreign borrowing are important.

For an extended discussion on the Debt Office's use of swaps, see Holmlund, A. [2002], "Swaps in central government debt management", Central Government Borrowing: Forecast and Analysis, 2002:3, pp. 17-20.

Nominal Treasury bonds

Issue volume

The Debt Office expects a funding requirement in nominal bonds of SEK 106 billion during the current year and SEK 92 billion in 2004.

Issue volume was increased in stages from SEK 2 billion per auction in October 2002 to SEK 5 billion starting with the March 12, 2003 bond issue. The increase in issue volumes reflects the increased net borrowing requirement in recent years: from a surplus of about SEK 40 billion in 2001 to a deficit this year of SEK 27 billion.

Meanwhile the Debt Office requires that the allocations between Treasury bill and bond loans meet the duration target for nominal krona debt of 2.9 years. The net borrowing requirement became unexpectedly large at the end of last year. This was funded with short-term borrowing and Treasury bills, which caused duration to become too short. In order to restore duration, the Debt Office needed to raise its issue volumes to SEK 5 billion per auction, while reducing its outstanding stock of Treasury bills. The adjustment of the nominal krona debt structure to the duration target has now been completed, which means that the share of outstanding bonds in the total debt portfolio no longer needs to be increased.

There is thus room for a reduction in issue volumes at each auction of nominal Treasury bonds from SEK 5 billion to SEK 4 billion. Such a reduction will become part of the borrowing plan starting in September 2003. Under these conditions, the Debt Office expects the duration of its debt portfolio to remain consistent with the 2.9-year target during both 2003 and 2004.

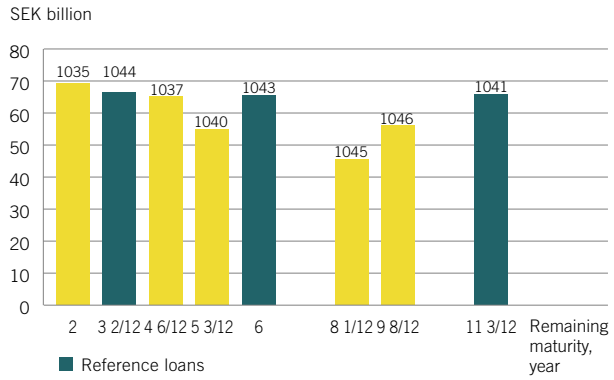
Loans to be included in planned issues

The Debt Office's bond issues consist mainly of its reference or super-benchmark loans with maturities of two, five and ten years that are traded in the electronic interbank market. The loans thus enjoy what is usually referred to internationally as "on the run status". [3]

Loan 1046, which falls due on October 8, 2012, is still being traded as a 10-year super-benchmark. Starting on June 13, 2003, loan 1041 (6.75%, May 2014), which has an outstanding volume of SEK 51 billion, is traded as a 10-year loan in the electronic system. The loan has a maturity of just below 11 years. At the same time, loan 1043 has become a

[3] *The loans treated as benchmark loans in electronic trading are determined by which loans are closest, in terms of maturity, to two, five and ten years. However, benchmark loans change only on IMM dates (the third Wednesday in March, June, September and December), with the criterion that in terms of maturity, the loans should be closest to two, five and ten years on the following IMM date. An underlying loan in forward contracts will always be the same as a benchmark loan during the first three months of the contract.*

Outstanding benchmark loans



five-year loan and loan 1044 a two-year reference loan. The Debt Office began issuing bonds in these loans as early as this spring, due to strong demand.

The Debt Office plans to make about half of its issues during the autumn in bonds with a ten-year maturity, about one issue per quarter with a two-year maturity and the rest with a five-year maturity. As a rule, the ten-year bond will be issued every second time. There is some flexibility in the choice of maturity, even if this issue schedule is normally followed in order to create predictability for investors and make it possible to form an opinion in advance about the trend and structure of the bond portfolio. The auction calendar for the autumn is published not only on www.rgk.se and on Reuters, but also in this report. As earlier, final announcements on what loans will be issued will be provided a week before each auction.

New bond loans

The Debt Office expects to issue a new five-year loan early in 2004. This loan will fill a gap between loans 1043 (January 2009) and 1045 (March 2011). Otherwise the five-year reference loan would have been too short-or too long-term during a large part of next year. Early in the autumn of 2004, the Debt Office plans to introduce a new ten-year loan.

The February edition of *Central Government Debt* discussed the possibility of issuing a new loan with a longer maturity than ten years. Loan 1041, maturing in 2014, is now the longest-running nominal loan, which means that the yield curve extends only to the ten-year segment. This limits the ability of the Debt Office to use a long-term loan to control duration with limited issue volumes. It also limits the ability of investors to match long-term obligations on their liability side with corresponding nominal interest-bearing assets. One attractive structure would be to choose the same maturity as for inflation-linked loan 3102, that is, December 1, 2020. Such a 17-year loan would make it easier to price both loans and thereby contribute to their liquidity.

Investors seem to be interested in a 17-year loan. However, at present the Debt Office does not plan to issue such a loan. If the funding requirement and market conditions are favourable at a later date, it may become appropriate. Uncertain market conditions in conjunction with the September referendum on Swedish membership of the euro currency union are one reason to wait.

Change in interest rate convention

During the spring, the Debt Office pursued discussions about adapting the interest rate convention on Swedish bonds to the standard prevailing in the EMU countries. In practice this will mean changing from today's 30E/360 convention to the Act/Act day count basis for computing accrued interest and quoted market rates. [1]

The Swedish Securities Dealers Association believes that the convention should be changed, regardless of whether Sweden votes Yes or No to EMU in the referendum. This change should be implemented in stages, following the pattern of most current EMU countries. This means that the convention for each loan is changed on the respective coupon maturity date. The change should occur not later than the year before possible EMU accession, i.e. by 2005.

The Debt Office is of the same opinion. The matter is not settled by a single party but the Debt Office will pursue such a change. Its main intention is to change the interest rate convention on all Treasury bonds, both nominal and inflation-linked. Exceptions will be made for bonds paying their next-to-last coupon during the year the conversion is implemented, since they will not be traded as benchmarks then anyway.

Inflation-linked borrowing

Issue volumes

Conditions for borrowing in the form of inflation-linked bonds remained favourable during the spring. The difference between the interest rates on nominal and inflation-linked bonds has been consistent with inflationary expectations and inflation targets. Since last autumn, the Debt Office has issued inflation-linked bonds at an annual pace of about SEK 15 billion, which is equivalent to about SEK 1.7 billion per issue month. Issues so far this year total SEK 7.8 billion, or an average of about SEK 1.6 billion per month.

This debt instrument offers investors unique protection against inflation. There are also signs that many investors are demanding a larger share of inflation-linked bonds in their portfolios. As the market for inflation-linked bonds develops, there is reason to assume that the liquidity premium will decline. There should thus be room for a wider interest rate differential between nominal and inflation-linked bonds, which will make it more advantageous for the central government to issue inflation-linked bonds (all else being equal).

In light of this, the Debt Office expects to keep its issue pace unchanged at SEK 15 billion.

The annual pace provides only an approximate estimate of what market conditions allow. The issue volume on individual auction dates may deviate substantially. The terms of auctions are determined after proposals from dealers and investors and are based on the prevailing demand situation and the pricing picture. Both investors and dealers are welcome to pursue a continuous dialogue with the Debt Office concerning inflation-linked bonds and submit suggestions before each auction.

[1] The present method assumes, in principle, that each month has 30 days. The Act/Act method uses the actual number of days.

Phasing out inflation-linked loans with short remaining maturitites

Loan 3002, maturing in April 2004 and with an outstanding volume of more than SEK 6 billion, has less than one year left until falling due for payment. As the loan has become shorter, it has lost liquidity and the pricing has become volatile.

Experience of how the market for this loan has developed as its maturity becomes shorter indicates that the Debt Office should have a clear policy for an orderly phase-out of inflation-linked bonds with short remaining maturities. The Debt Office provides opportunities to exchange nominal bonds for more liquid Treasury bills when the maturity is less than one year away. There is no equivalent policy for inflation-linked bonds. They will also begin to lose their liquidity earlier than nominal bonds.

Loan 3101, maturing in December 2008, has a relatively large outstanding volume: SEK 35 billion. But as the loan becomes shorter in the next several years, there is reason to offer those investors who wish to phase out their holdings an attractive alternative.

The Debt Office's considers different methods and welcome suggestions. The Debt Office´s thoughts go along exchanging a maximum volume of SEK 10 billion for longer-term inflation-linked loans every year from 2004 up to and including 2008. In the first year, 2004, the maximum volume should perhaps be larger, for example SEK 15 billion. Such a timetable would mean that the outstanding stock would be reduced at the pace that investors want to change to longer-term inflation-linked bonds, but no faster than SEK 10 billion per year. This model makes it possible for investors to shift their holdings of 3101 into more liquid loans. It also means that everyone who wants to exchange 3101 will be able to do so during the period 2004 to 2008.

Inflation-linked exchanges

The exchanges can be carried out in different ways. One alternative is that the Debt Office exchanges a certain maximum volume of the loan in question for a longer-running inflation-linked loan in an exchange auction, in the same way as the exchanges that it carried out in 2001 and 2002. A possible variant would be to allow exchanges to any longer inflation-linked loan of the investor's choice. To give all investors an opportunity to participate in the auctions, not only those who hold loan 3101, it is possible first to implement a buy-out of the loan and then, in a scheduled auction, offer one or more large issues.

The Debt Office has had a buy-out facility for small amounts of loan 3002 as part of its market maintenance efforts. The facility has served as a safety valve for small holdings in the loan that investors have found it difficult to get rid of in the secondary market. The Debt Office's experience of offering this opportunity has not been completely positive. The secondary market has periodically tended to be controlled by this facility.

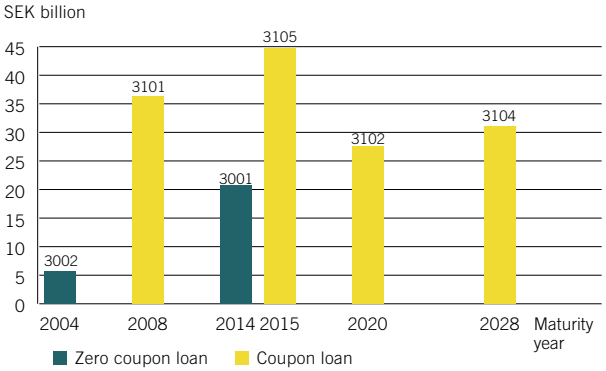
The point of departure for a more orderly phase-out of inflation-linked loans with short maturities should be that when the exchange programme is completed, the Debt Office's obligation to maintain liquidity and the secondary market ceases entirely. Those who have not participated in the exchange programme must keep their holding until maturity or try to sell it in the secondary market.

The Debt Office welcomes dealers and investors to present their opinions and suggestions for how to organise a phase-out plan for inflation-linked bonds with short maturities.

Loans to be included in planned issues

During the autumn, the Debt Office plans to issue inflation-linked bonds on four occasions, with two auction days for each occasion. The first inflation-linked bond issue will take place on August 28. During the autumn, loans 3105, 3102 and 3104 will be issue candidates (see chart below for information on maturity years and outstanding volumes).

Outstanding inflation-linked loans



On occasions when demand is deemed strong but uncertain, the Debt Office intends to continue using flexible issue volumes. This flexibility means that in case of good but uncertain demand, the issue volume of an auction can be increased by an amount stated in advance. One precondition is that this can occur at a reasonable interest rate and without significant impact on the interest rate. The choice of loans, issue mechanisms and volume on individual issue dates is decided in the customary way and announced one week before the auction. If the auction is implemented with a flexible volume, the volume being offered is announced as an interval.

Stripping of inflation-linked bonds

In 1999, the Debt Office introduced stripping of nominal bonds. Stripping means dividing certain nominal bonds into coupons and principal amounts, which can then be traded separately from each other. Stripping was introduced according to the international pattern, but to date the interest in it has been practically nonexistent in the Swedish market.

It has now been proposed that the Debt Office introduce the opportunity for stripping of inflation-linked bonds. Stripping of inflation-linked bonds will allow the creation of instruments with genuinely long maturities, which is attractive to market players that want to extend their duration significantly. It can also be argued that the inflation-linked bond market is more suitable for stripping than the nominal market. This is because all inflation-linked bonds with coupons have the same coupon dates, which increases the possibility of using stripping for more sophisticated trading strategies.

The Debt Office is therefore considering the introduction of stripping for inflation-linked bonds. At the same time, stripping should only be introduced if there is a demand for this facility. The Debt Office would consequently like to invite market participants to submit their opinions about whether and, in that case how, such a facility should be introduced and organised.

Foreign currency borrowing

At present, the Debt Office is amortising foreign currency debt at an annual pace of SEK 25 billion. Its borrowing plan is based on the same pace of amortisation during 2004.

The borrowing requirement consists of the difference between maturing loans and the pace of amortisation. During 2003, loans including exchange rate losses equivalent to SEK 43 billion will fall due. In order to achieve the targeted pace of amortisation, the Debt Office thus needs to borrow the equivalent of SEK 17 billion in foreign currencies, SEK 3 billion less than in the February forecast. The strengthening of the krona has resulted in a downward revision of the forecast for realised exchange rate differences.

During 2004, maturing loans will decline to SEK 37 billion. Foreign currency borrowing will thus decline to SEK 12 billion.

Foreign curency borrowing in 2004 and 2004, SEK billion

	2003	2004
Gross foreign currency borrowing requirement	18	12
Benchmark for foreign currency borrowing	–25	–25
Maturing foreign currency loans [1]	30	25
Maturity currency swaps	10	11
Realised exchange rate differences	3	1
Gross foreign currency borrowing	18	12
Direct foreign currency borrowing [1]	10	6
Net short-term foreign currency borrowing [2]	–1	0
Gross foreign currency swaps	9	6

[1] Direct foreign currency loans in the spot market, valued at present exchange rates.

[2] Commercial paper (Treasury bills in foreign currencies).

Note: The table presents the allocation between different types of debt. A number of items are technical assumptions rather than forecasts or plans.

Foreign currency loans can be funded by issuing Treasury bonds, which are swapped to foreign currency exposure (krona/swap borrowing) or by means of direct borrowing in foreign currencies. The allocation of foreign currency loans between direct foreign currency borrowing and krona/swap borrowing will depend on what interest rate conditions can be achieved. In the scenario that is sketched here, the Debt Office is expecting direct foreign currency borrowing in the capital market equivalent to SEK 10 billion in 2003. So far this year, the Debt Office has taken out direct foreign currency loans equivalent to SEK 6 billion. It anticipates raising approximately SEK 9 billion by using krona/swap borrowing. The actual allocation may, however, end up deviating substantially from this scenario.

In light of the current pricing picture and market depth, the Debt Office estimates that the total future scale of interest rate swaps should again be limited to an annual pace of approximately SEK 25 billion. If market conditions change, however, the actual scale may deviate from this estimate.

Foreign currency borrowing during the calendar year as a whole is uncertain. In the event of a Yes vote on Swedish membership of the euro currency union, there is reason to review the guidelines for central government debt policy. In case of membership, the portion of the foreign currency debt that is denominated in euro will become domestic currency when the krona is converted to euro. The foreign currency debt will thus be sharply reduced.

In case of a Yes vote in the referendum, there are consequently arguments for reducing the pace of foreign currency debt amortisation during the transitional period until 2006. This would imply an increased need for foreign currency loans during the period. In case of membership, but also during the transitional period, the central government will have great flexibility in changing its foreign currency exposure between different currencies to the share of its total debt that can be regarded, after an in-depth analysis, as desirable in the long term.

Taking into account maturing swaps and the volume of swaps assumed here, the outstanding stock of interest rate swaps will increase by SEK 10 billion this year. These swaps will be carried out at a relatively uniform pace during the year. The average maturities of interest rate swaps should correspond to the duration of bond issues with a maturity not exceeding six years.

Summary

The Debt Office expects its total borrowing in the form of bonds and foreign currencies to be SEK 130 billion during 2003 and to decline to SEK 113 billion next year, despite an increase of SEK 14 billion in the net borrowing requirement. Without a reduction in bond issue volume, the Debt Office's maturity (duration) target would be exceeded. To avoid this, the volume of Treasury bills outstanding will instead be increased.

Given present forecast conditions, it appears possible to lower the issue volumes of nominal Treasury bonds from SEK 5 billion to SEK 4 billion per auction starting in September.

The Debt Office plans to issue a new five-year and a ten-year bond loan next year. No new loan running longer than 10 years is planned at present. However, such an issue may be considered at a later date.

In light of good demand, the Debt Office estimates that it can issue inflation-linked bonds at an annual pace of approximately SEK 15 billion. The estimate is thus unchanged.

The Debt Office proposes a phase-out model for inflation-linked bonds with short remaining maturities that implies that a maximum of SEK 10 billion per year of loan 3101 may be exchanged for longer-running inflation-linked bonds at its regular auctions starting in 2004.

The Debt Office's opinion is that the interest rate convention on Swedish bonds should be adjusted to the euro zone standard. This change should be made regardless of the outcome of the referendum on participation in the currency union.

The Debt Office will amortise the foreign currency debt at an annual pace of SEK 25 billion. This implies that foreign currency borrowing this year will be limited to SEK 18 billion and next year to SEK 12 billion. Approximately one half of this is projected to occur in direct foreign currency borrowing.

If Sweden votes Yes to currency union membership, there are arguments for cutting back the pace of amortisation on the foreign currency debt. This implies that foreign currency borrowing would need to increase.

The Debt Office expects to carry out interest rate swaps at an annual pace of about SEK 25 billion.

Small borrowers in the euro zone

If Sweden joins the currency union, its borrowing conditions will change. The experiences of other smaller countries may prove beneficial if we become part of the euro zone ourselves. For this reason, the Swedish National Debt Office has studied how Belgium, Finland, the Netherlands and Portugal borrow in the European currency union.

The European currency union has led to intensified competition among borrowers in recent years. This applies largely to small borrowers and will thus affect Sweden's borrowing in case of a future membership.

In order to examine how small countries borrow in the currency union, the Debt Office studied four countries. Belgium, Finland, the Netherlands and Portugal are all examples of small countries that borrow in the European currency union. A number of interesting conclusions can be drawn:

- Their overall strategy is to borrow cheaply by creating large liquid loans.
- It has become increasingly important for borrowers to generate attention in a large market. This has led to increased marketing resources, large auctions and greater focus on syndication.
- Small countries concentrate their borrowing in a few markets.
- Small countries concentrate their borrowing in a few debt instruments. Most of them borrow mainly in the form of bonds and Treasury bills.
- Countries with small borrowing requirements require strategies for generating sufficiently large debt maturities each year.
- MTS is the electronic bond-trading platform that dominates the European market.

Strategy

The countries that were studied try to borrow cheaply in the European market by creating large liquid loans. Since this requires large volumes of benchmark bonds in the euro market, there is no room for the countries examined here to borrow opportunistically as well.

When Belgium builds up benchmark bonds, it tries to issue at least EUR 10 billion per loan. Finland and Portugal consider EUR 5 billion sufficient for good liquidity. They maintain that the necessary volume has decreased in recent years, very much due to the increased transparency created by electronic systems.

Since these countries have relatively small borrowing requirements, they are forced to concentrate their borrowing in a few instruments. Borrowing in the form of bonds is dominant. A country is often also forced to concentrate its borrowing in fewer maturities. For example, Finland issues a new 10-year bond loan every two years. The idea is that this loan will function as a benchmark for two years.

Foreign currency borrowing has been cut back since joining the third stage of the EU's Economic and Monetary Union (EMU). Today most member countries engage in euro-denominated borrowing in the European market.

The change in the investor base

The investor base has greatly increased in size since accession to the euro zone. In Finland's case the number of investors has increased from 20-25 before joining EMU to about 800 after. The foreign-owned share of the countries' outstanding bonds has also risen substantially, especially due to an increase in the number of foreign primary dealers.

The share of foreign bids in auctions has risen sharply. It is still not possible to see how large the total impact of the currency union is on foreign ownership. This will only be apparent in a few years, when the portfolio of bonds outstanding will reflect the entire period after EMU accession.

Before EMU, about 90 per cent of Belgian government bonds were owned by Belgian investors, while the figure is now 50 per cent. For the bonds issued recently, the corresponding figure is 20 per cent. Since foreign ownership is increasing, there is a growing need to obtain a better picture of who owns these bonds. Better and more reliable statistics

Facts about central government debt

	Belgium	Finland	Netherlands	Portugal	Sweden
Total debt (EUR billion)	266	61.3	195.4	81.5	134.6
Debt as a percentage of GDP	105.4	42.7	52.6	58.0	49.8
Spread to Germany (10 year) [1]	0–5 bps	0–5 bps	0–5 bps	10–15 bps	55–60 bps
Net borrowing requirement (EUR billion)	2.5	–4.7	4.1	4.5	2.8
Short-term borrowing share %	12	9	13	2	23
Foreign borrowing share %	–	8	–	3.5	28.0

1 The spread interval is estimated under basis of a Cash Adjusted Spread method. In Sweden, this is adjusted for duration.

The facts presented in this article are based on visits to the debt offices of the countries that were examined as well as on information presented on their web sites. The authors of the article are responsible for any errors and omissions.

are needed. An increased share of syndication in the Belgian government's total bond offerings will solve the problem to some extent.

The Dutch State Treasury Agency also believes that it needs more knowledge about its investors. The share of domestic ownership has fallen since EMU accession. This share was previously around 70-80 per cent, while it is now around 50 per cent.

Small countries spending more to make themselves visible

In order to create focus in a big market, after joining the currency union a number of debt offices in Europe have devoted more resources to making themselves visible. For Belgium, these changes have meant spending more on marketing. The Belgian Debt Agency has one employee whose responsibility it is to meet investors.

This picture is not unambiguous, however. In the Netherlands, the Dutch State Treasury Agency lets its primary dealers handle its marketing. They believe there is no reason to have their own employees working with something that the banks do better.

In order to generate heavier market interest, auctions are concentrated on fewer dates, with large issue volumes. The countries surveyed each hold between five and ten auctions per year.

All these countries except the Netherlands have used syndication in their borrowing since joining the currency union. This is especially common when new loans are introduced, in order to quickly generate a large volume and thereby create liquidity in the loan.

Auctions

Auctions are still the most common technique for selling government securities in EMU. Most small countries devote their energy to auctioning large volumes of government bonds on a small number of occasions. Both Belgium and the Netherlands issued around EUR 25 billion in bonds during 2003. One advantage of concentrating the auctions on a few dates is that there is a greater focus on these auctions. Larger volumes at auctions also reduce the risk that one investor will buy the whole auction volume, which may create lock-in effects.

In Belgium, about 60 per cent of the total borrowing in the form of bonds takes place by auction. Government bonds are auctioned on four or five occasions per year. A week before its bond issues, the Belgian Debt Agency holds conference calls with its dealers on what bonds should be issued. On the same day, they also decides what bonds to issue. Belgium issues bonds for a five-year and a ten-year loan at each auction.

The Netherlands has a tap system for issuing bonds. It is not an ordinary auction, but instead the Treasury Agency posts the actual prices in the MTS electronic trading system. Dealers then submit bids until the auctioned volume is sold. However, the Treasury Agency differs from other private market players in MTS since it is a matter of an issue and the scale of the bonds to be sold is, in principle, known in advance.

The Netherlands issues bonds at a total of ten such electronic tap auctions per year. Each tap auction is open for 30–60 minutes and the Treasury Agency offers a variable volume of between EUR 2.5 and 3 billion per session.

Syndication

Syndication has expanded as a form of borrowing in small countries since the advent of the European currency union. Syndication means that a group of banks jointly sell a bond loan issue.

The foremost argument for syndication is that it generates greater attention in the market and that it is an effective way to reach a broad investor base. Another argument is that the bond issuer does not need to devote as extensive resources to marketing.

Syndication makes use of the specialised expertise and broad contact networks of the banks. Very large volumes can be sold in a short time. It means that a new loan quickly achieves good liquidity and is spread among many investors, both numerically and geographically. This broad investor base creates the prerequisites for a very low liquidity premium and thereby ensures low long-term borrowing costs.

Since joining the currency union, Belgium has used syndication in its borrowing. About 40 per cent of its bond volume is issued via syndication. It mainly uses this form of borrowing when introducing new loans. In Finland, a full 90 per cent of sovereign debt volume is issued through syndication. Portugal issues about 40 per cent of its target volume directly through syndication when a loan is introduced.

Difficult to combine auctions and syndication

In order to choose banks to lead-manage a syndication, many countries base their decision on a systematic assessment of market shares in primary and secondary markets. This is then supplemented by a qualitative evaluation of the banks' work and by more discretionary assessments.

Countries with this type of selection process have had problems with overbidding at auctions. Capturing market share at auctions boosts the chance of being included in future syndications. The dealers thus count on getting back what they overbid at auctions from later syndications. The problem is that only those that are part of the syndicate get their money back. This may, in turn, lead to a reduction in the number of dealers, which implies problems for the market in the long term.

The Netherlands has chosen not to syndicate for this reason, among others. The Treasury Agency believes that the disadvantages of syndication are so great that it has chosen to abstain completely from this form of sales.

The Netherlands is currently discussing a new model for the issuance of government securities. This model, the "Dutch

Direct Auction", is reminiscent of syndication, with the difference being that no lead-managing banks are appointed and that the Treasury Agency itself administers the order book. All dealers may submit bids on behalf of their customers on equal terms.

The main reason for launching a new form of auction is to improve the Netherlands' chances of reaching a broad investor base. As discussed above, this has become increasingly important since accession to the European currency union, since the share of foreign ownership and the number of borrowers has increased.

Strategies to ensure borrowing

As central government debt has decreased in the countries that were studied, their borrowing requirement has also decreased. To create large, liquid loans, it is necessary to have a large funding requirement. Otherwise there is no room to issue sufficiently large volumes to provide liquid loans every year. To ensure a borrowing requirement, the countries studied pursue different strategies.

Most of them work with a maturity profile that will ensure sufficiently large redemptions each year. The loans are allocated in a way that distributes redemptions as evenly as possible each year. As the central government debt of the Netherlands has fallen in recent years, the country's borrowing requirement has decreased. To ensure its borrowing, the Treasury Agency tries to smooth out the maturity profile so that an equal amount falls due each year. In Belgium, too, this strategy has become increasingly important.

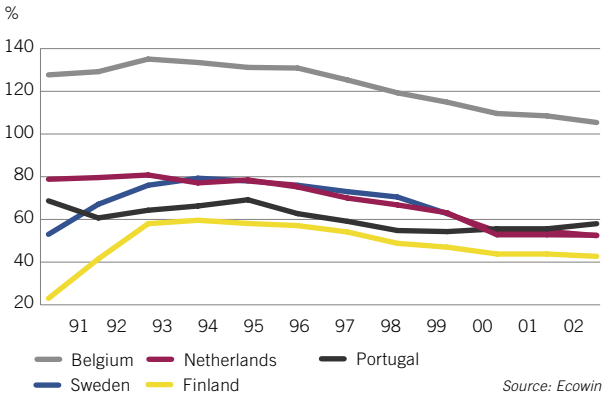
Belgium has a buy-back programme and an exchange programme for bonds with twelve months or less remaining until maturity. As in other countries, buy-backs and exchanges aim at smoothing cash flows by spreading out the repayment of bonds. They can also be used in order to boost the liquidity of benchmark loans by creating a funding requirement.

The other countries also have buy-back programmes, in order thereby to ensure their borrowing requirement. As mentioned above, Finland issues a new ten-year bond loan every two years. In order to smooth out the borrowing requirement between these years, the State Treasury works very actively to carry out exchanges and buy-backs.

Electronic platform

The electronic platform that dominates interbank trading in Europe is MTS. The use of a common electronic system in the European government securities market has caused

Central government debt as a percentage of GDP



Source: Ecowin

competition to intensify further. The market is becoming more transparent, making it easier to compare different countries. The investor can now more easily trade in government securities from different countries.

Euro MTS is a platform for trading in government bonds from countries in the currency union that have outstanding volumes of more than EUR 5 billion. Local MTS markets provide venues for trading in government bonds and Treasury bills in individual countries. One trend is for smaller countries to join forces and form common electronic marketplaces. MTS Belgium and MTS Finland have a common marketplace in Belgium called MTS Associated Markets S.A. In the Netherlands, the marketplace is called MTS Amsterdam.

Short-term funding

The share of short-term funding in overall central government debt has fallen somewhat in the countries that were studied since they joined EMU. The main reason is that they are being forced to concentrate their borrowing in bonds in order to create large liquid loans. Short-term funding accounts for between 10 and 20 per cent of total borrowing. The Treasury bill market focuses primarily on three-, six-, nine- and twelve-month Treasury bills.

The money and short-term debt securities market is far more liquid in the European market compared to countries outside EMU. This leads to a growing number of counterparties. In EMU, national debt offices are also borrowing from and invest in each other to a greater extent.

Otherwise short-term funding is used to cope with fluctuations in the borrowing requirement and to smooth out maturities over the year.

Eric Morell, Analyst
Thomas Wigren, Analyst

References
Belgian Debt Agency (DCA), http://www.treasury.fgov.be/interthes default.htm
Dutch State Treasury Agency (DSTA), http://www.dutchstate.nl/
Finnish State Treasury, http://www.valtiokonttori.fi/
Portuguese Government Debt Agency (IGCP), http://www.igcp.pt/

Borrowing strategy if Sweden joins the currency union

Swedish membership of the euro currency union would pose new challenges to the Debt Office's loan strategy. Borrowing in a large international market requires liquidity and concentration of funding. Borrowing at auctions would be larger and would take place less frequently. New forms of borrowing may be needed.

Currency union membership means that the Swedish National Debt Office would mainly borrow abroad. The domestic investor base would shrink substantially. Even if membership does not begin until 2006, adaptation to the euro would begin as early as this autumn, provided that the September 14 referendum results in a Yes vote. This article discusses some of the new conditions that the Debt Office's funding policy would face.

Change in currency risks

Reduced foreign currency debt

In case of membership, Sweden's sovereign foreign currency debt will shrink. The portion of foreign currency debt that is denominated in euro will then become domestic currency, and the related foreign currency risk will disappear. Even during the transition period before membership, given a fixed krona-euro rate in the EU's Exchange Rate Mechanism (ERM2), the foreign currency risks of euro debt will diminish. During euro zone membership, but also during the ERM2 phase, there is also flexibility with the help of derivative instruments to rapidly change exposure between euro and such other foreign currencies as US dollars and Japanese yen. It will then be possible to adjust the foreign currency debt quickly to the desired level.

Broader investor base

Investors will gain a corresponding change in the foreign currency exposure of their asset portfolios. The currency risks of investments in euro-denominated securities will disappear for Swedish investors when the euro becomes the domestic currency. There will no longer be any currency risk argument for choosing Swedish Treasury bonds instead of bonds issued by other euro zone member countries. This will influence the portfolio structure of Swedish investors. Meanwhile foreign investors with euro as their home currency will be able to buy Treasury securities issued by the Swedish National Debt Office without taking any currency risk.

Currency union membership will consequently lead to adjustments in the bond portfolios of Swedish and foreign investors. To a greater extent, Swedish investors will buy foreign bonds and vice versa.

There are no reliable statistics on how large a share of Debt Office bonds outstanding is owned today by foreign investors. The Riksbank (Swedish central bank) reports a share of about 50 per cent. In addition, about 14 per cent of the Debt Office's total borrowing occurs directly in foreign currencies.[1] The proportion of total central government debt owned by foreign investors is thus about 40 per cent. However, the Riksbank's statistics probably exaggerate how large the share of foreign owners is.

In the smaller euro zone countries, the share of foreign investors in new bond issues is generally close to 80 per cent. After a while, a portion of these investments is usually sold to domestic investors. Based on foreign experience, the share of outstanding Treasury bonds in Sweden held by foreign investors could eventually, after new loans replace old loans, be in the range of 75 per cent.

Experience thus indicates that there is a tendency for domestic investors to hold a larger share of outstanding domestic Treasury bonds than would be justified by Sweden's approximate 3.4 per cent share of all outstanding euro Treasury bonds. This "home bias" is probably even larger when it comes to inflation-linked bonds and Treasury bills.

Greater flexibility

Sweden will be a medium-sized borrower in a big market

Provided that Sweden joins the currency union, Swedish Treasury bonds will not serve as reference loans for the pricing of interest-bearing securities. Instead, the German yield curve will be the main source of reference rates for the interest-bearing debt instruments issued by Sweden and other member countries. Today the yield curve for domestic Treasury bonds is the reference curve for the setting of interest rates on krona-denominated debt instruments.

As a participant in the currency union, the Kingdom of Sweden will borrow in a much larger market, with a broader investor base than today. Today the Debt Office has a responsibility for maintaining the Swedish bond market, since we are the dominant market player. In the currency union, we will be an important but relatively small player. This means that our flexibility will increase.

[1] A large proportion of Swedish sovereign debt in foreign currencies consists of krona-denominated debt that has been transformed into foreign currency exposure via swap agreements. The overall foreign currency debt is about 28 per cent of total central government debt, divided into 14 per cent direct foreign currency borrowing and 14 per cent swaps.

Predictability vs flexibility

There are strong arguments why the Debt Office should continue to base its borrowing strategy on transparency, openness and predictability. Just as today, borrowing would focus on building up large, liquid benchmark Treasury bond loans. One argument is that this creates good liquidity as well as a broad, stable investor base. Under such conditions, it should be possible to borrow at lower costs than if borrowing took place completely flexibly. This is also the policy that has come to predominate among smaller sovereign borrowers in the euro zone.

Otherwise, a radical but fully conceivable alternative would be to abandon the ambition of maintaining liquid benchmark loans for Swedish Treasury securities. Borrowing could, in principle, take place in a completely flexible, or opportunistic, way. The Swedish National Debt Office could stop auctioning benchmark bonds and instead take out loans based on market situation, niches and demand. Choice of currency and maturity would be determined by what is cheapest on one date or another. The arguments in favour of such a loan policy are strongest for borrowers with very good creditworthiness, a well-known name and a limited indebtedness and borrowing requirement. On occasions when market conditions deteriorate, in principle there is always the possibility of issuing large liquid benchmark loans. The Kingdom of Sweden is such a well-known name in the bond market that it is possible to issue such loans at short notice.

However, Sweden's borrowing requirement is probably too large for this alternative to be realistic – at least as a main strategy. This strategy might work well periodically, but during periods of less favourable market conditions, borrowing costs might be too high. There would not be a stable investor base that regularly and actively buys Swedish benchmark loans. During the periods when we would be forced to issue liquid benchmark loans, borrowing costs would probably be so high that over time the strategy would not be compatible with the Debt Office's official objective of cost minimisation. The strategy would also result in higher borrowing risks.

Other aspects of flexibility

A predictable strategy does not mean that all borrowing needs to be carried out mechanically, according to an established timetable. The point is that the borrower's strategy should be clear and predictable. For example, when choosing maturities and issue volumes at individual auctions, smaller countries in particular can apply a degree of flexibility.

Elements of more opportunistic borrowing may be appropriate and may fit into a strategy that is based mainly on predictable borrowing, using liquid benchmark loans.

Although most borrowing takes place in standard maturities such as 10 years, there are good opportunities – via derivatives such as interest rate swaps or interest rate futures – to create exposure in terms of duration or allocation of maturities that is desirable from a risk standpoint. In other words, it is possible to separate the issue of which maturities are the cheapest for borrowing and the exposure that we wish to achieve with reference to costs and risks.

As indicated, the Swedish National Debt Office will not be a dominant market player in the currency union. This means that we cannot influence the euro benchmark curve. Since our own bond issue plans will not influence the euro curve and the Debt Office will not have inside information about monetary policy, there is potential to act flexibly when it comes to choosing duration and exposure to exchange rate fluctuations. We can thus argue in favour of more active management of duration, for instance, depending on our borrowing requirements and the market situation, than is possible in the present situation.

Bond loans

Good liquidity and broad investor base

There are good reasons to retain the strategy of predictability and transparency even if Sweden joins the euro currency union. The Debt Office should endeavour to create relatively large, liquid loans that will attract a broad international circle of investors.

Good liquidity in outstanding loans will lead to a low liquidity premium and thus to low borrowing costs. Relatively speaking, the liquidity premium will be a more important factor in borrowing costs than today. For example, expectations about monetary policy do not affect interest rate differentials between member countries at all. Today's floating exchange rate policy creates room for autonomous domestic interest rates.

Achieving the liquidity that is needed in order to minimise the liquidity premium requires large loans and numerous, preferably active investors. The loans should perhaps be EUR 6-7 billion in size. A lower threshold is EUR 5 billion, the level that is required in order to be quoted in the most liquid trading system, Euro MTS. This means that the Debt Office's existing Treasury bond loans are, in principle, sufficiently large. However, the investor base needs to be broadened. This means that the Debt Office probably needs to develop more active investor relations. Even if the market mechanisms in themselves will generate a more international investor base, information and communication with investors will be needed in order to create sufficient attention and knowledge about Swedish Treasury bonds to achieve satisfactory dispersion.

Larger auctions, less often

Considering the large number of debt issues that take place in the euro zone, the number of Swedish sovereign debt auctions must be limited in order the generate sufficient interest. Today the Swedish National Debt Office holds Treasury bond auctions every fortnight. If Sweden belongs to the currency union, these auctions should occur less frequent, perhaps every month or second month. At the same time, this means that the issue volumes at each auction will be larger. Larger auctions on fewer occasions will help create greater focus and attention.

Syndication a possible supplement

Syndication is a common borrowing method in smaller countries that participate in the currency union, at least

when introducing new loans. Syndication means that a group of banks (a syndicate) is assigned to sell a bond loan. Syndication takes advantage of the specialised expertise of the banks, with their broad contact network and sales staff supplying many debt instruments to various client categories. With syndication, right from its introduction date the loan can achieve a large volume and distribution among numerous investors, in principle worldwide. It also provides an opportunity to gain attention and publicity for a new loan. This lays the groundwork for a liquid secondary market and for bond issues in subsequent scheduled auctions. These issues can also be steered towards a well-balanced mix of final investors, active and passive, and banks.

Even if syndication has become common among smaller countries that participate in the currency union, this form of sales is far from unproblematic. Although commissions to the banks that lead-manage syndications have fallen in recent years, they still represent large sums. However, this need not be more expensive for the issuer if the loan is successful. Many syndications that have been implemented during the past year have carried an "all-in" cost, that is, costs including commissions, in the vicinity of market-listed interest rates. The liquidity and the low liquidity premium created by syndication can then be utilised at subsequent auctions. Thus in the end, perhaps the costs will largely be borne by investors.

The incentives for being a dealer and having the opportunity to serve as a lead bank in syndications are currently so strong that scheduled auctions may tend to be priced below prevailing market interest rates, due to over-bidding. The consequence is that dealers buy the entire issue volume, i.e. final investors do not participate in the auctions. For investors, it becomes cheaper to buy in the secondary market. In terms of costs, this is in itself no problem for issuers, but it lowers the efficiency of the market, since pricing is distorted. The information content of interest rate setting is of lower quality.

There are good arguments why, even if Sweden joins the currency union, the auction system should be the dominant form of Swedish sovereign debt sales. Auctions provide transparent, market-related borrowing with low administrative and sales costs. There are reasons to use syndication to a certain extent, at least when introducing new loans. This is especially true when it comes to broadening the investor base. Meanwhile, there are question marks regarding negative market effects. Given these factors, it is far from certain that the Debt Office will use this form of sales.

Strategy for refinancing and debt issues

Implementing a strategy of large liquid loans requires a sufficiently large funding requirement. A large funding requirement provides an opportunity to issue loans with various maturities. It may also create room for flexible borrowing outside the framework of benchmark borrowing. In principle, a relatively uniform maturity profile is also needed.

In order to yield the greatest benefits in terms of liquidity and borrowing costs, issues should primarily occur in standard maturities, that is, especially in 5- and 10-year maturities. Fifteen-year maturities have become relatively common as well. The Netherlands also issues 3-year loans, which demonstrates that other maturities are possible.

The current outstanding stock of Treasury bonds barely suffices to issue one 10-year bond loan per year. The Debt Office can naturally issue 10-year bonds at intervals of 1.5 years, for example. However, given the size of Sweden's central government debt, there is limited room for issuing large liquid loans each year for several long maturities. One possibility is to create a funding requirement via exchanges or repurchases of outstanding bonds. Exchanges have been one element of the Debt Office's policy for quickly building up the liquidity of new loans. Finland regularly uses large repurchases of loans that have poor liquidity in order to create more room for funding and thus for large issues of benchmark loans.

Inflation-linked bond issues

The Debt Office's long-term commitment to an increase in the share of inflation-linked bonds in its total borrowing portfolio is unchanged, even if Sweden joins the currency union. Inflation compensation is linked to the Consumer Price Index. This is a commitment by the Swedish state, and no change to another index is possible. However, in principle it is possible to issue new inflation-linked bonds that are linked to the EU's Harmonised Index of Consumer Prices and to carry out exchanges between CPI- and HICP-indexed bonds.

From the standpoint of the Swedish state, CPI indexing is advantageous. Central government revenues and expenditures depend on Swedish price developments. Since the currency union's monetary policy objective is price stability for the entire euro zone, Swedish inflation may deviate from average inflation. Swedish investors, too, have reason to protect themselves chiefly against Swedish price increases rather than against average euro zone price increases.

There are thus arguments in favour of retaining inflation-linked bonds with the existing structure. As a result, the inflation-linked bond market would continue to be mainly domestic.

This policy must naturally be weighed against the costs. If it should turn out that future investors in the euro zone inflation-linked bond market tend to prefer HICP indexing, this will have an impact on borrowing costs.

Short-term borrowing and liquidity management

The inclination to issue short-term government securities, corresponding to Swedish Treasury bills, seems to have increased in the countries that now participate in the currency union. Interest rates on short-term government securities are closely linked to the European Central Bank's key rate. Short-term interest-bearing securities issued by euro zone countries are closer substitutes than bonds with different issuers. Compared to the bond market, there is a stronger tendency for the Treasury bill market to become mainly domestically based.

In light of the experience of smaller euro zone countries,

it appears possible and natural for Sweden to continue its short-term borrowing using Treasury bills. Finland does not issue Treasury bills in auctions, but uses an on-tap procedure. Since Sweden has a well-established tradition when it comes to Treasury bills, there are probably prerequisites to continue with auctions. Nor are the arguments for making these auctions less frequent as strong as they are in the bond market. Since Treasury bills are mainly an element of government cash management, there is reason to hold rather frequent auctions.

Liquidity management will be simplified in various ways if Sweden joins the euro zone. The market will become substantially deeper, and the Debt Office can work with more counterparties than today. Not least, we can use other national debt offices as counterparties. This also means that credit exposure to individual counterparties during periods of cash surpluses will decrease in a situation where the Debt Office has more counterparties in its liquidity management activities.

Gradual adjustment of the investor base

It is reasonable to assume that changes in the investor base will occur gradually, even though pricing will be adjusted immediately after a Yes vote in the referendum. Adjustment to new market conditions for borrowing will thus occur successively. The question is how quickly and when the largest changes will take place. It is possible to distinguish three phases after a Yes vote in the referendum.

During the period following the referendum and before Sweden's ERM2 membership, there will be widespread uncertainty about what central rate against the euro the EU will decide on. However, this period will probably be relatively short. During the period of just under two years from ERM2 membership – with a fixed central rate against the euro – until the EU's decision on the krona-euro conversion rate about six months before currency union membership, hardly any speculations against the exchange rate will take place, as long as the credibility of Swedish economic policy is strong. Once the conversion rate is fixed in the run-up to euro zone membership, in principle exchange rate uncertainty will be completely eliminated.

At present, 10-year bonds issued by such countries as Finland, Spain and Belgium are traded at essentially the same interest levels as their German counterparts. The interest rate differential is usually 1-3 basis points (hundredths of a percentage point). One reason behind this narrow spread is probably Germany's economic problems and the comparable liquidity that these other countries have achieved. In case of euro zone membership, Swedish bonds will be traded on equal terms with those of these countries. During ERM2 membership, with a credible fixed exchange rate against the euro, today's interest rate spread of about 50 basis points will shrink in response to expectations about differences in monetary policy key rates until Sweden joins the euro zone. The liquidity of Swedish government securities is another important factor.

Swedish investors have no reason to sell off Swedish Treasury securities at a pace that would adversely affect yields. A sell-off would widen the interest rate spread to Germany and further weaken economic incentives. Foreign net demand for Swedish Treasury securities will probably increase in case of a Yes vote in the referendum. This means that interest rate differentials should tend to narrow. If bond rates are traded down to levels in the vicinity of the lowest euro zone interest rates, the incentives for domestic investors to sell off Swedish Treasury securities will increase.

Swedish investors will probably gradually sell off their Swedish Treasury securities, but only to the extent that there is a strong interest among foreign investors in buying these securities. In other words, it will hardly be a major problem to issue bonds in case of a Yes vote in the referendum. There consequently does not appear to be any urgent need for major immediate changes in borrowing if Sweden votes in favour of currency union membership this autumn.

As the investor base continues to internationalise, it may be justified to hold fewer auctions even before Sweden joins the euro zone. However, in advance it is difficult to specify suitable timing for such a change.

In its proposed 2003 guidelines for central government debt management, the Debt Office said that there are arguments for reducing the pace of amortisation of its foreign currency debt during the transition period to euro zone membership. The foreign currency debt will automatically shrink when the euro becomes Sweden's domestic currency. Swedish euro zone membership will also create flexibility for rapidly adjusting currency exposure to a level that is desirable in the long term. If the level of amortisation is reduced after a Yes vote on the currency union, this means that foreign currency borrowing to refinance maturing loans will increase. This does not affect the size of foreign currency debt, which would instead remain unchanged.

Today the liquidity aspect or discussions about the structure of the investor base are not crucial to the Debt Office's foreign currency borrowing. The cost of each loan is considered individually. During 2002 and 2003, this has meant that loans have mainly been taken out in US dollars. If Sweden votes Yes in the euro zone referendum, there is reason to review the Debt Office's foreign currency borrowing strategy. Direct foreign currency loans in euro are a possibility. As today, the point of departure for how to carry out foreign currency borrowing in this situation will be the long-term costs that different alternatives can offer.

Dealers and the electronic platform

The Debt Office has endeavoured to broaden its circle of authorised dealers and also recruit foreign investment banks. This has proved difficult, however. In the current situation, most foreign banks have concluded that the advantages of being dealers do not offset the required input of resources. International banks believe that they receive sufficiently good service from the existing dealers. Since Sweden has its own floating currency, becoming a dealer requires larger

resources than if Sweden were a participant in the euro currency union. Thus the level of interest in becoming dealers will increase in case of euro zone membership. Prices can be set by computerised programmes and can be linked directly to electronic platforms for the secondary market.

More dealers will mean improved liquidity. More international investment banks would also help broaden the investor base. It should meanwhile be borne in mind that several major investment banks are already active traders in Swedish Treasury securities today, even though they are not dealers.

One substantial element of the main strategy discussed in this article is that there should be an effective, widely used system of electronic trading in Treasury securities between dealers, i.e. interbank trading. The system should also feature openness when it comes to the prices and interest rates at which bonds are traded. Trading must be transparent. There are thus reasons to review the existing electronic trading platform if Sweden joins the currency union.

Summary

On September 14, 2003, Sweden will hold a referendum on whether to join the euro currency union. If the outcome is a Yes vote, the loan market in Swedish currency will become substantially larger and deeper. The investor base will broaden, and only a small share of Swedish central government debt will be held by Swedish investors.

This will have consequences for the Debt Office's borrowing. The liquidity aspect will become more important in order to minimise borrowing costs. Auctions cannot take place as often, which means that auction issue volumes will become larger. It cannot be ruled out that auctions may need to be supplemented by other forms of borrowing, for example syndication when introducing new loans. Liquidity will require a limitation of the number of outstanding loans and borrowing instruments. There will be heavier demand for information and communication with investors. The circle of authorised dealers should be expanded and should include more international investment banks. There are also reasons to review the question of electronic platforms for the primary and interbank markets.

Thomas Olofsson, Head of Funding

State guarantees – proposals for an even better rule system

Via the Debt Office, the Swedish state has issued some SEK 200 billion in guarantees. Other public authorities provide additional guarantee commitments. How these guarantees shall be administered is regulated in the State Budget Act. One requirement is that a fee must be paid, either by the guarantee recipient or with budget funds. The fee makes the cost of the guarantee visible. This article presents a proposal to amend the fee rules in the Budget Act. Instead of a fee equivalent to expected cost, the state should charge market prices for all types of guarantees. This will ensure the avoidance of hidden state aid and make budget-funded guarantees directly comparable to other forms of state aid, thereby making a good rule system even better.

The Swedish state has large commitments in the form of loan guarantees. Guarantees are, in many respects, more difficult to administer than other commitments, such as ordinary central government debt. The value of this debt can be calculated with a fair degree of precision by adding up all outstanding central government debt instruments. In order to calculate the value of guarantee commitments in corresponding terms, one must try to estimate the probability of indemnification and the costs of the guarantees that are indemnified.

Guarantees are also used in order to provide targeted state aid. As a form of state aid, too, guarantees are often more difficult to administer than similar alternatives, such as direct grants. It is difficult to assess the value of the aid implied by the guarantee, and the guarantee may later prove more expensive (or less expensive) than targeted aid, depending on whether the commitment must be indemnified.

In light of this, the rules on state guarantees and how to administer them are of great importance for government finances and as a matter of principle. The first aim of this article is to describe the current rule system for state guarantees, with an emphasis on the role and purpose of guarantee fees. Secondly, the article discusses approaches for appraising guarantees and how these approaches can and should be applied to various types of state guarantees. The analysis leads to the conclusion that the rules in the State Budget Act on how to set the fees for state guarantees should be modified. This would make a good rule system even better.

The guarantee rule system and its aims

According to the Budget Act, a state guarantee may be issued only after a decision by the Riksdag (Swedish Parliament), in which the Riksdag states the purpose and, normally, a maximum sum for the guarantee. The Budget Act also states that a fee must be charged for such a guarantee. The fee shall "correspond to the state's financial risk and the other costs of the commitment, provided that the Riksdag does not decide otherwise for a given commitment" (Section 15, State Budget Act, 1996:1059).[1] The fee is either to be paid by the company on whose behalf the guarantee is issued or, if the Riksdag decides that the fee is to be subsidised, with funds from the central government budget. The reasons for charging fees are connected to the goal of maintaining efficient management and monitoring of central government finances as well as the goal of preventing the state from influencing competition between companies in an undesired way.

As for the administration of central government finances, guarantee fees have two important aims. Firstly, they make it clear that the guarantee makes use of resources, i.e. it may lead to costs for indemnifications in the future. Since state aid in the form of a guarantee is associated with a budget-related cost in the same way as a direct grant, for instance, it becomes possible to compare different forms of aid. In addition, the central government budget shows how much state aid is going to a given activity.

Secondly, fees cause the state to set aside resources to cover future indemnification costs. If the fee is covered by budget funds, this takes up room under the budget's expenditure ceiling and thereby lowers other expenditures. If the guarantee recipient pays the fee, the central government receives outside funds that reduce its borrowing requirement and debt. In both cases, the consequence is that central government debt is less than it otherwise would have been. This gives the government room to borrow more if indemnification should prove necessary. Guarantee fees thereby contribute to effective management and administration of budget funds and central government debt.

Guarantee fees are reported as payments into a guarantee reserve fund, in the form of a deposit account at the Debt Office, and indemnifications are charged to the same account. This means that indemnifications are administered

[1] *State guarantees are provided as part of programmes for certain specified purposes, such as export credits and housing loans, and for specific projects or companies. In the latter case, the government normally asks the Debt Office to issue the guarantee. The Debt Office's tasks include deciding the size of the guarantee fee.*

outside of the expenditure ceiling. Forecasts of central government expenditures limited by the ceiling thus become less uncertain.

The other main motive for guarantee fees is, as mentioned above, to prevent state guarantees from affecting competition between companies in an undesired way. For this reason, the basic principle is that if the guarantee recipient is exposed to competition, the recipient must pay the fee, i.e. appropriation of government budget funds to cover the fee is not permitted. The fee must also correspond to the value of the guarantee.

These rules may be viewed as expressing sound principles as to what role the state should play in the economy. For guarantees that may be of importance to the European Union's single market, there are also special regulations in the EU's state aid rules, which Sweden has undertaken to follow. One of these is the requirement that a market-related fee must be charged to the company receiving a guarantee.

What is the value of a guarantee?

Thus there are good reasons why state guarantees should carry fees. Choosing a principle for how to calculate this fee entails more difficult considerations. There are two main principles for the setting of fees, both of them found in the current rule system.

One principle is based on calculating how much cheaper a loan in the ordinary credit or bond market would be if a company received a state guarantee.[2] For example, if the company would normally pay 7 per cent interest on a loan with no guarantee and instead receives a 5 per cent loan when the state guarantees the loan, the value of the guarantee is 2 per cent of the loan amount (per year).

In this case, the value of the guarantee is thus deduced by examining how it affects borrowing terms in the ordinary credit market. Such a *market-related valuation* of guarantees is the fundamental principle of the EU's state aid rules. Since the state charges as much for the guarantee as a private guarantor would have done, it avoids distorting competition. In this type of valuation, one should thus use fees corresponding to private market valuation of guarantee risk in general and the specific risks at the affected company in particular.

However, there are no well-defined, easily deduced market prices in connection with all types of state guarantees. Such guarantees are often issued because the private market is regarded as unable or unwilling to assume the risk in question. But this does not reduce the importance of having a correct point of departure for valuation of the guarantee. In these cases, "market-related" may be interpreted as meaning that the fee should be set on the basis of the price that would have been charged in a reasonably well functioning private market.[3]

[2] The value of a guarantee is affected by how it is formulated, for example when the guarantee can be utilised, whether the fee is adjustable or fixed etc. The terms of the guarantee are thus important both for valuation and for the aid provided by a given guarantee funded via a budget appropriation to the affected entity.

[3] Practical valuation issues are further discussed below.

The Budget Act provides that the guarantee fee shall "correspond to the state's financial risk and the other costs of the commitment". Based on the Government bill and the Guarantee Ordinance, this may interpreted as meaning that the main rule is that the fee shall be calculated on the basis of the *expected cost* of the guarantee. For example, if the guarantee covers a loan of SEK 1 billion and the probability that the borrower itself will not be able to repay the loan is 10 per cent, the expected cost is SEK 100 million (plus administrative costs).[4]

The fee for an individual guarantee is set in advance and will not normally correspond to the actual cost of that particular guarantee. Given numerous guarantees and a correct estimate of average indemnifications, this fee principle will lead to costs for guarantee operations corresponding in the long term to fee income, i.e. will result in zero earnings. To this extent, the rule may be regarded as an application of the "at cost" principle.

A fee based on market-related valuation is never lower than the expected cost. The reason is that a private market participant obviously requests coverage for the expected cost. Under normal circumstances, a private insurer requests further compensation for the risk that actual cost will be higher than expected. Even in well-diversified guarantee operations, a private guarantor must have some form of capital buffer to be able to respond to variations in indemnification costs. The owners of this risk capital require a return on invested funds and this requirement is reflected in a risk premium on the expected cost.

Application of fee principles

Issuing guarantees to activities exposed to competition

It follows from the above arguments that a market-related fee is, almost without exception, higher than is required to cover expected cost. If companies exposed to competition receive state guarantees at a price equivalent to expected cost, this means that the guaranteed company is being subsidised, since it receives resources (a guarantee service) at a non-market-related price.

In activities where state aid is not permitted according to EU rules, a market-related fee must be charged to the guarantee recipient. In these cases, another requirement is that the company should have a sound financial position. There is also a rule that a maximum of 80 per cent of each loan may be covered by a state guarantee. In other words, the company must also be able to obtain loans that are not state-guaranteed. Thus a company that could not manage on its own, for example because of poor profitability and/or insufficient equity capital, can normally not receive state loan guarantees.

The difference between the Budget Act's at-cost principle and state aid rules that require market-related fees is not a formal problem. As long as it concerns guarantees of

[4] An expected cost in kronor can be translated to a percentage of the guarantee amount, so that the fee will be comparable to a percentage premium on the interest rate, as in the above example of a market-related fee.

importance to the single market, EU rules take precedence. Since EU rules can, in this case, be regarded as expressing a sensible approach to the role of the state in the economy and how state aid should be valued and reported, however, there is reason to emphasise that market-related valuation should also be the point of departure for guarantees to companies whose competitors are found only in Sweden.

Guarantees funded by budget appropriations

Guarantees funded by central government budget appropriations may only be provided to activities in which state aid is permitted. The choice of fee principle for budget-funded guarantees, for instance to a state-owned company established to perform a task in a field where state aid is permitted, is therefore not governed by state aid rules. The point of departure must instead be the aims that guide the Budget Act.

As mentioned above, according to the current rules the fee for such a guarantee must correspond to the expected cost. In a report to the Government in May 2002, the Debt Office proposed that this rule be re-examined and that the principle of market-related valuation also be applied to budget-funded guarantees.[5] The motive is that such a system would allow greater precision in the management of state resources.

The basic concept is the same one that underlies the existing requirement that budget funds must be set aside to cover the expected cost of a guarantee. This is crucial, in order to create some degree of comparability between aid in the form of guarantees and other types of aid, such as direct appropriations. However, the at-cost principle does not provide full comparability. This can be illustrated by a simple example.

Assume that the Riksdag wants to a certain activity to receive an appropriation of 1,000. If the Riksdag appropriates the funds directly, the activity can use this aid to buy services (personnel, office space etc.) and goods (computers, equipment etc.) with an aggregate *market value* of 1,000. Assume that the activity needs a loan guarantee and that this guarantee has an expected cost of 100 and a market price of 120. If the activity must buy this guarantee in the same way as it buys other services, i.e. at market price, appropriated funds of 880 will remain to cover other expenditures.

Assume that the Riksdag instead decides that the state will issue the guarantee that the activity needs, as part of an appropriation of 1,000. According to the current fee principle, appropriated funds equivalent to 100 (the expected cost) would be reserved as coverage for the guarantee. Thus 900 would remain that can be appropriated directly to the activity. Consequently the real value of the aid would be larger if it includes a guarantee instead of direct grants alone (1,020 instead of an appropriation of 1,000), even though the conditions for the activity are otherwise identical.

This situation presumably influences the budget process. Aid in the form of state guarantees appear to be cheaper in budgetary terms than direct grants. This means there is a risk that the state's guarantee commitments will grow within appropriations established for individual expenditure areas, and within the overall budget expenditure ceiling. This leads, in turn, to greater risks in the state's balance sheet than if budget funds are used for direct aid, since the final expenditure for a guarantee commitment is uncertain, and may possibly be very high, while appropriated funds can, at most, be spent. There is consequently a risk that important aims underlying the Budget Act, both in allocation of resources between expenditure areas and efforts to maintain robust central government finances, will not be fulfilled if guarantee fees are set on the basis of the at-cost principle.

The example also makes it clear what is required to correct this distortion: *The fee must be set on the basis of the market valuation of the guarantee.* In that case, 120 would be subtracted from the appropriation as the state guarantee fee and 880 would remain for other expenditures, exactly as in the case of direct appropriations alone. There would thus be neutrality between these forms of aid, and reported aid would coincide with actual aid, regardless of which method of aid is chosen.

The importance of uniform valuation of aid is not unique to guarantees. The same effect would arise, for example, if the state offered certain activities office space in state-owned buildings and only charged them on an at-cost basis. Aid to activities that use this office space would be understated in relation to activities that use appropriated funds to pay market rents in private office properties. It is worth noting that the Swedish state charges market rents for state-owned office space.

Fees for appropriation-funded guarantees are a means of *internal pricing* for the purpose of providing the right information in the decision making process. Compared to current rules, room for issuing guarantees decreases, within a given appropriation level. As indicated by the above example, however, this is a prerequisite for creating comparability between different forms of aid. The purpose of market-related fees is thus to ensure that guarantees are used when they provide the most effective aid, not because they utilise a smaller amount of appropriated funds. This is the same purpose that guides the current rules in the Budget Act.

It should also be noted that the arguments for market-based fees are *not* connected to whether the state has, or should have, the same attitude to risk as market participants in the private sector. Nor does it matter whether the state needs to set aside buffer capital – beyond the expected cost – for guarantee risks. The only intention is to create comparability between forms of aid in the budget process. This is an important goal, regardless of the state's attitude towards risk and return requirements.

Methods for determining the size of the fee

Principles must be translated into practical decisions. Market-related fees provide clear guidance on what question must be answered: "What fee would a typical private market participant have asked for in order to issue this guarantee?"

[5] *The report (in Swedish) can be downloaded from the Swedish National Debt office web site (http://www.rgk.se/oliver_upload/upl2398-riskhantering_garantier.pdf).*

The procedure that may be appropriate in order to answer this question varies from case to case.

If the company is well established, or even listed on a stock exchange, it is possible to perform a credit evaluation on the basis of publicly available data. One point of departure may be to assign the company a credit rating of the kind provided by such companies as Moody's and Standard & Poor's. A credit rating normally provides good guidance for credit risk premiums. If the company is not well known but operates in a well-established industry, one may produce a credit rating by comparing it to similar companies.

Greater difficulties arise if the company has no equivalents in the private sector, for example, if it was established by the state to perform a specific task. The valuation must then be carried out with the help of a fundamental analysis of the company's characteristics. A number of more or less formalised methods are available to support such analyses.[6]

[6] The Debt Office is working to develop such analytical tools. However, it would require too much space to discuss this modelling work here.

One should not underestimate the difficulties of calculating true and fair market-related fees for non-conventional projects. However, it is not easier in general to calculate a fee that reflects the expected cost. For a company that can be compared to private counterparts, a market-related fee emerges. Then one must estimate the risk premium and subtract it from the market-related fee in order to calculate expected cost. It is thus often possible to come a long way by taking advantage of information that can be gathered in the private credit market.

It is worth noting that regardless of what overall principle is to be applied, guarantee fees are based on estimates and assessments of future events that are always uncertain. It is thus impossible to achieve complete exactness. What principle one applies is nevertheless important, especially since a fee that is set on the basis of expected cost is systematically lower than a market-related fee for the same guarantee.

Summary

Experience has shown that guarantee commitments may have substantial economic consequences for the state. As a result of this insight, guarantees were brought into the purview of the Budget Act when it was adopted in 1996. Under the rules in this Act, a Riksdag decision is required in order to issue guarantees, and a guarantee fee must be paid. The main purpose of the fee is to ensure that the state sets aside resources to cover future expected indemnifications. Towards this aim, it is sufficient to charge a fee that corresponds to the expected cost of each guarantee. This is also the fee principle that the Budget Act specifies.

However, fees based on the expected cost have two shortcomings:

- Guarantees in which the company benefiting from the guarantee pays the fee do not fulfil the requirement that the fee must be market-related. Too low a fee means that the entity is being subsidised, which may distort competition and violate EU state aid rules.
- Guarantees in which the fee is covered by appropriations do not meet the requirement that aid by means of guarantees must be comparable to direct aid. Too low a fee means that guarantees appear more advantageous from a budget standpoint than direct grants. This runs the risk of increasing the number of state guarantees and thereby raising the risk level in state finances.

Consequently, a market-related fee should be charged for all types of state guarantees. The Budget Act should be amended to express this principle clearly. This is also one of the main points in a proposal for more efficient management of state guarantees that the Debt Office has submitted to the Government.

By way of closing, it should be noted that everything said in this article about how state loan guarantees should be administered can be applied to state loans that carry credit risks. Both guarantees and loans imply that the state assumes a risk of loss if the borrower defaults. The current rules for loans are unclear, however, among other things since a loan can be provided without charging an interest rate premium equivalent to a guarantee fee. The Debt Office's view, based on the aims and principles of the Budget Act, is that the rules for loans that carry credit risks and for guarantees should be the same, and has therefore submitted a proposal to the Government on a uniform guarantee and loan model.

Lars Hörngren, Chief Economist

Risks and derivatives

The Swedish National Debt Office uses financial derivatives in its borrowing activities to lower costs and risks. To reduce credit risks in individually negotiated derivatives, the Debt Office enters into Credit Support Annexes (CSAs). Under these agreements, the parties regularly transfer collateral between them. The Debt Office has created a market-conforming CSA variant in order to reduce its credit risks as much as possible.

Exchange-traded derivatives

The Debt Office uses two types of financial derivatives: those that are traded on an exchange, such as futures, and those that are traded over-the-counter (OTC). Exchange-traded contracts are completely standardised. There is a daily settlement of gains and losses, and if an exposure arises on a party, that party must provide corresponding collateral the same day. This system prevents any large credit exposure from arising in the system.

OTC-traded derivatives

The other type of instrument that is used is OTC-traded, such as swaps, forward contracts and options. These types of derivatives are traded bilaterally, mainly with banks and other financial institutions as counterparties. The content of these contracts can be tailored to fit the parties' needs for protection or exposure to market risk. They are typically based on some form of "master agreement" and are individually negotiated between the parties to satisfy their specific demands. These bilateral transactions involve credit exposure to the counterparties that the Debt Office carries out transactions with.

Exposure in OTC transactions

Exposure is measured by calculating the market value of the contract. The market value of a swap or forward contract consists of the net amount of the market value of the contract's receivable and liability positions.

Example of exposure

	Receivable	Liability	Market value
Nominal value	1,000,000	1,000,000	–
Market value	1,250,000	900,000	350,000

Positive exposure = The Debt Office has a receivable from the counterparty, i.e. the market value is positive for the Debt Office.
Negative exposure = The Debt Office has a liability to the counterparty, i.e. the market value is negative for the Debt Office.

If the exposure is measured on a gross basis, it is the sum of all transactions with a counterparty where the Debt Office has a receivable.

If the exposure is measured on a net basis, it is the sum of all transactions with a counterparty where the Debt Office has a receivable minus the transactions where that counterparty has an asset position against the Debt Office.

ISDA agreements and other methods

Netting rules in ISDA agreements

The fundamental and generally applied technique for reducing credit risk is to enter into standard agreements with the chosen counterparties. There are numerous developed models of standard agreements in the market, but the most common one, which the Debt Office also uses, is the ISDA agreement. The International Swap and Derivatives Association (ISDA) has developed a master agreement for derivative transactions that is applicable in most developed jurisdictions. Among other things, the agreement has established a methodology by which transactions concluded between parties are netted against each other in or before a bankruptcy or in case of other similar instances of default. In the absence of such rules, the solvent party risks first having to pay the value of the transactions that are advantageous to the counterparty, then only hope to receive compensation for the remaining transactions ("cherry picking"). A number of jurisdictions, including Sweden, have harmonised their legislation in such a way that the netting rules in the ISDA agreement are maintained in case of bankruptcy.

Internal ceilings

The Debt Office has executed ISDA agreements containing netting rules with its derivative counterparties. Beyond this, the agreement has been supplemented with a set of internal limits on exposure, risk amounts and maturities, primarily based on the creditworthiness of the counterparty as stated by well-established rating institutions. Risk calculated as exposure multiplied by the risk of loss has also been legislated. These internal limits have been established in order to serve as protection and as a safeguard that the Debt Office's counterparties will maintain good creditworthiness at all times.

However, these internal limits have to some extent prevented the Debt Office from entering into transactions that would have been desirable in order to reduce the costs of debt management and thus of the central government debt. For example, according to the limits, a new transaction should carry a maximum maturity of one year if a counterparty has a credit rating below AA-. Furthermore, both maturity and risk limits would be exceeded if a party's credit rating should

be lowered, which implies that a business relationship may need to be changed or terminated. With the application of a CSA transfer of collateral, the Debt Office can modify these internal rules, make them less strict and retain a high degree of security in the transactions.

The form of the Debt Office's CSA agreements

A Credit Support Annex (CSA) is an annex to the ISDA agreement that establishes a system for collateral transfer between the parties in order to eliminate the exposure that arises in derivative transactions. The collateral that is exchanged is intended for use in a bankruptcy situation or when the ISDA agreement is terminated for another reason and the transactions between the parties are to be netted and settled. CSAs have become an established technique for reducing credit risks in derivative transactions, undoubtedly also an effect of the fact that the system specified in the agreement is upheld in many jurisdictions in the event of bankruptcy. The technique is used both between banks and between banks and sophisticated end users of derivative contracts. Among the latter type of market participants, for example, are other Nordic sovereign players such as Danmarks Nationalbank (the Danish central bank) and the Nordic Investment Bank (NIB).

CSA agreements with all counterparties

According to a resolution adopted by the Board of the Debt Office in December 2001, the Debt Office must enter into CSAs containing certain provisions with its ISDA counterparties. The Board adopted this resolution to enable the Debt Office to streamline its credit risk management and allow more effective debt management with longer maturities, by removing a number of limitations. Since the autumn of 2002, the Debt Office has therefore executed new CSAs with a number of important counterparties. All of the Debt Office's major ISDA counterparties will also receive the Debt Office's new form of CSA.

The following sections set out some important features of the Debt Office's new CSAs.

Reciprocity

The rules on transfer of collateral in the Debt Office's CSAs are reciprocal and thus apply to the Debt Office as well. This reciprocity will presumably lead to more favourable treatment of the Debt Office by its counterparties in terms of pricing and limits than if a rule was introduced that applied unilaterally to the counterparty.

The Debt Office has chosen collateral in the form of cash

Pursuant to the CSAs, collateral can be provided in the form of cash or securities. The Debt Office has chosen a structure where both the Debt Office and the counterparty provide collateral only in cash, since managing and safeguarding a securities portfolio increases administration and risk, compared to the simpler handling of cash alone. The Debt Office has also chosen a system of collateral title transfer, not the alternative of pledging. This is because for the Debt Office, title transfer is more effective and seems to work smoothly from a legal perspective, given the jurisdictions where the Debt Office's counterparties are located.

Valuation agent system

According to a CSA, the parties shall appoint a valuation agent that appraises existing exposure at regular intervals, to enable the parties to assess whether the collateral needs to be adjusted. One or both parties may be valuation agents. In the CSAs being signed by the Debt Office, both parties act as valuation agents. This means that the Debt Office is not controlled by the counterparty's calculations, but independently appraises transactions and decides whether there is a need for further collateral. A system in which both parties are valuation agents is safer and administratively less cumbersome, since both parties make their valuations and do not need to be in contact on dates other than the agreed ones (in the Debt Office's agreements, every fortnight) and otherwise as required, depending on the change in the exposure. If the parties disagree on the size of the exposure, there is a dispute resolution procedure in which the sum that they agree on is transferred and the parties carry out a new appraisal with the assistance of "reference market makers", which comprises an average of the valuations given by four major banks. A disagreement about the valuation of exposure is not an event that triggers termination of the agreement.

Threshold value systems

The CSA agreements that the Debt Office enters into contain regulations on reciprocal threshold values according to the table below.

	SEK million	USD/EUR million
AAA	500	50
AA+	250	25
AA	200	20
AA–	125	13
A+	100	10
A	80	8
A–	50	5

Under the threshold value system, the Debt Office achieves control of credit exposure to each individual counterparty and thus its entire exposure. The size of the threshold value is linked to credit rating. Lowering of a party's credit rating will automatically result in lower threshold value according to the table. The threshold values for the various rating categories are a reflection of difference in default risk, i.e. the likelihood of bankruptcy at various rating levels based on statistics from the credit rating institutions. The levels indicated by the table imply that the expected loss is at about the same level for the various rating categories. The threshold value is denominated in the amount determined by the agreement.

The Debt Office requires all its counterparties to be rated by at least two of the big three institutions that evaluate creditworthiness: Standard & Poor's, Moody's and Fitch. The threshold value should follow the lowest of the credit ratings

that are set. If the counterparty is rated by all three of these institutions, the middle rating that is assigned will continue to apply.

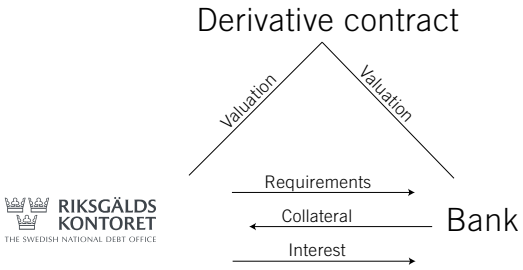
Minimum transfer amount

In addition to threshold values, CSAs contain a provision on a "minimum transfer amount" equivalent to SEK 10 million or USD/EUR 1 million, depending on what currencies the parties have agreed to use.

Given the legislation of its CSAs described here, the Debt Office has a good chance of monitoring the exposure that arises in its OTC transactions.

Regardless of whether collateral can be posted and administered, however, the Debt Office has no intention of entering into derivative transactions with counterparties with a weak financial position. A bankruptcy or similar event will unfailingly involve major administrative strains and will presumably result in higher costs. For this reason, the Debt Office only enters into transactions with counterparties that have credit ratings of at least A-. Consistent with this, the Debt Office's ISDA agreements should also include a provision permitting the Debt Office to terminate executed transactions if the credit rating of a counterparty should fall below an acceptable level.

Example of daily collateral valuation



1. Daily valuation of outstanding derivative contracts (swaps, forward contracts and options) in the business systems of both parties.
2. If the valuation shows a higher exposure amount for the Debt Office than the value of collateral posted by the counterparty minus threshold value, the Debt Office requires additional collateral. Correspondingly, the counterparty requires additional collateral if its valuation should show that it has an exposure to the Debt Office higher than the collateral posted by the Debt Office minus the threshold value.
3. Collateral is deposited in an account designated by each party. Title to the collateral is transferred to the other party, which has full access to these funds.
4. The party that has received this collateral pays interest on the total collateral to its counterparty.

Summary

In brief, CSA agreements can be described as a very effective technique for reducing credit risks on OTC-traded derivative instruments. The use of this technique has significantly helped reduce the Debt Office's exposure to credit risks. In the future, the Debt Office will only enter into OTC-traded derivative transactions with counterparties with which the Debt Office has CSAs.

However, CSAs also have disadvantages. The technique ties up large quantities of capital as collateral, and the administrative process is burdensome. For this reason, the Debt Office closely monitors all efforts being made to institute central clearing of OTC contracts. These solutions would mean that a stock exchange or equivalent institution would assume the role of the central counterparty with which all parties administered their collateral. This would reduce the need for collateral and make the administrative process more efficient. Meanwhile this would require standardisation of contracts, thereby somewhat reducing the flexibility of market risk management.

Anne Gynnerstedt, General Councel
Lars Hörngren, Chief Economist

Market information

Source: The Swedish National Debt Office, unless otherwise stated

Swedish government debt

Treasury bonds, outstanding volumes, May 31, 2003

Nominal bonds (nominal amount)			
Maturity date	Coupon %	Loan. no	SEK M
2005-02-09	6.00	1035	69,294
2006-04-20	3.50	1044	66,595
2006-08-15	8.00	1037	65,107
2008-05-05	6.50	1040	54,783
2009-01-28	5.00	1043	65,389
2011-03-15	5.25	1045	45,532
2012-10-08	5.50	1046	55,970
2014-05-05	6.75	1041	65,721
Total benchmarks			**488,390**
Non-benchmarks			**18,249**
Inflation-linked bonds (outstanding amount)			
2004-04-01	–	3002	5,702
2008-12-01	4.00	3101	36,275
2014-04-01	–	3001	20,711
2015-12-01	3.50	3105	44,675
2020-12-01	4.00	3102	27,489
2028-12-01	3.50	3103	3
2028-12-01	3.50	3104	31,064
Total inflation-linked bonds			**165,920**
Total Treasury bonds (nominal and inflation-linked)			***672,559***

Treasury bills, outstanding volumes, May 31, 2003

Maturity date (nominal amount)	SEK M
2003-06-18	76,787
2003-07-16	27,507
2003-08-20	17,502
2003-09-17	73,478
2003-12-17	57,584
2004-03-17	37,695
Total Treasury bills	**290,552**

Rating

	Debt in SEK	Foreign currency debt
Moody's	Aaa	Aaa
Standard & Poor's	AAA	AA+

Auction dates

Treasury bonds

Announcement date	Auction date	Settlement date
2003-06-11	2003-06-18	2003-06-23
2003-06-25	2003-07-02	2003-07-07
2003-08-06	2003-08-13	2003-08-18
2003-08-20	2003-08-27	2003-09-01
2003-09-03	2003-09-10	2003-09-15
2003-09-17	2003-09-24	2003-09-20
2003-10-01	2003-10-08	2003-10-13
2003-10-15	2003-10-22	2003-10-27
2003-10-29	2003-11-05	2003-11-10
2003-11-12	2003-11-19	2003-11-24
2003-11-26	2003-12-03	2003-12-08
2003-12-10	2003-12-17	2003-12-22

Treasury bills

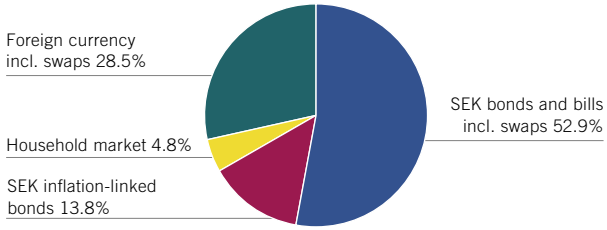
Announcement date	Auction date	Settlement date
2003-06-18	2003-06-25	2003-06-27
2003-07-02	2003-07-09	2003-07-11
2003-07-30	2003-08-06	2003-08-08
2003-08-13	2003-08-20	2003-08-22
2003-08-27	2003-09-03	2003-09-05
2003-09-10	2002-09-17	2003-09-19
2003-09-24	2003-10-01	2003-10-03
2003-10-08	2003-10-15	2003-10-17
2003-10-22	2003-10-29	2003-10-31
2003-11-05	2003-11-12	2003-11-14
2003-11-19	2003-11-26	2003-11-28
2003-12-03	2003-12-10	2003-12-12

Inflation-linked bonds

Announcement date	First issue date in each period	First settlement date in each period
2003-08-21	2003-08-28	2003-09-02
2003-09-18	2003-09-25	2003-09-30
2003-10-16	2003-10-23	2003-10-28
2003-11-20	2003-11-27	2003-12-02

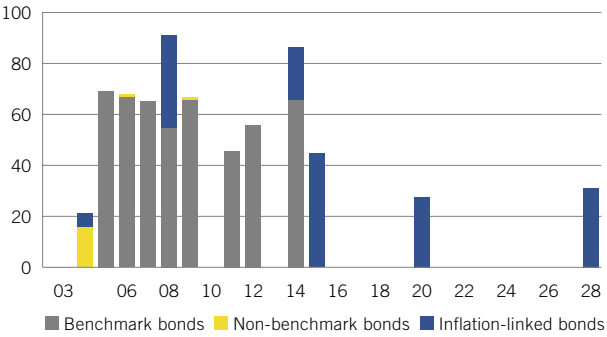
Debt structure

Total debt SEK 1,199 SEK billion May 31, 2003



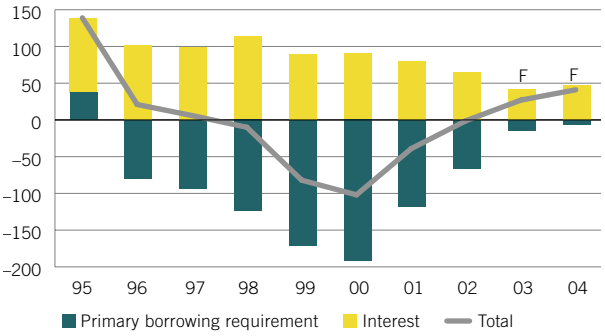
Maturity profile, SEK nominal and inflation-linked bonds

SEK billion May 31, 2003



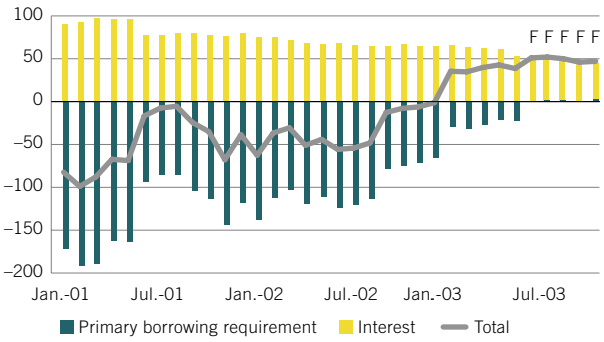
Central government borrowing requirement, 1995–2004

SEK billion

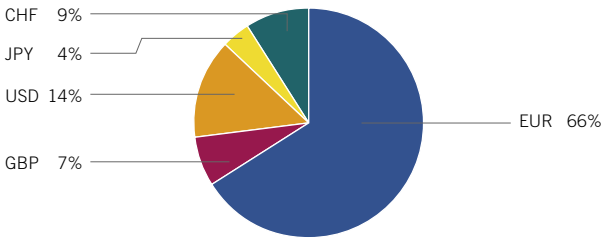


Swedish government borrowing requirement, 12 months

SEK billion

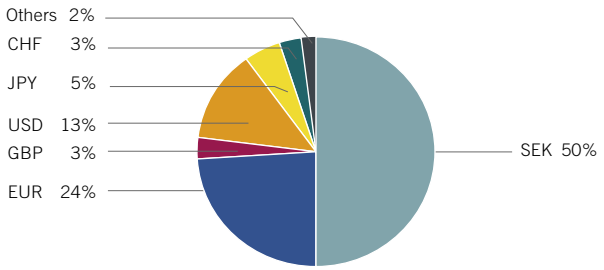


Benchmark, foreign currency debt



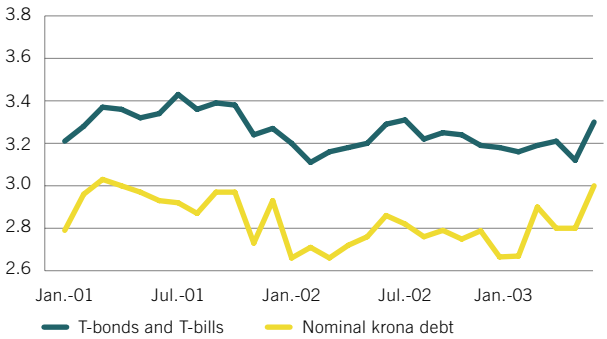
Funding in foreign currencies

May 31, 2003



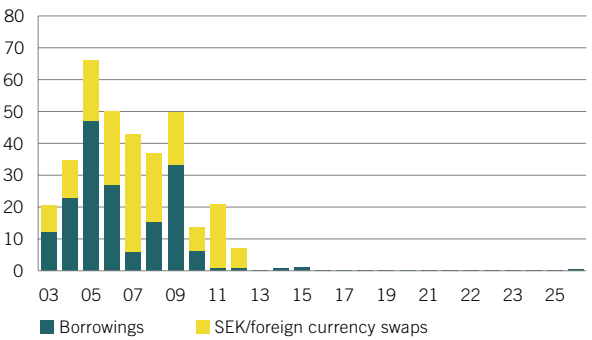
Duration of nominal debt

Years



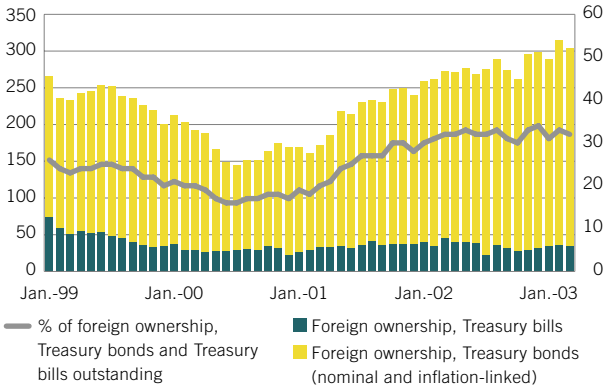
Maturity profile, foreign currency loans excl. callable bonds

SEK billion May 31, 2003



Foreign ownership of Treasury bonds and Treasury bills

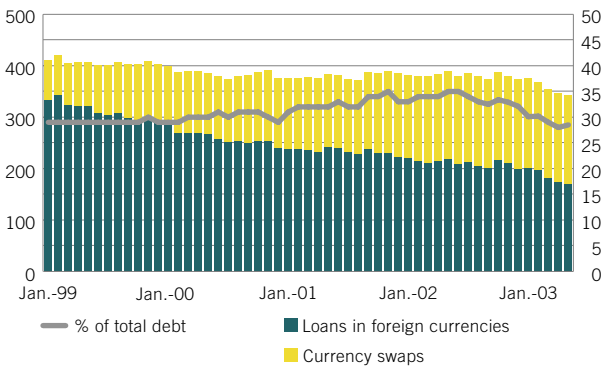
SEK billion



Source: The Riksbank

Central government debt exposure in foreign currencies

SEK billion

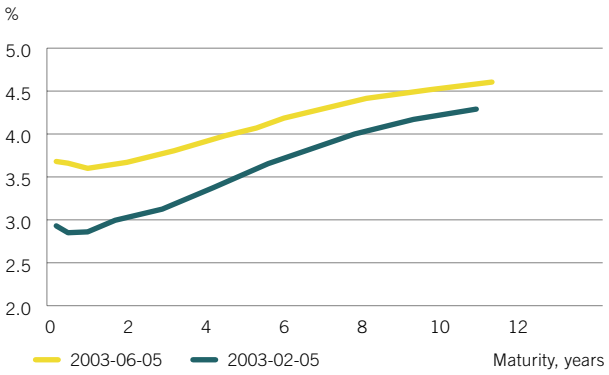


Financial markets

All values up to May 31, 2003

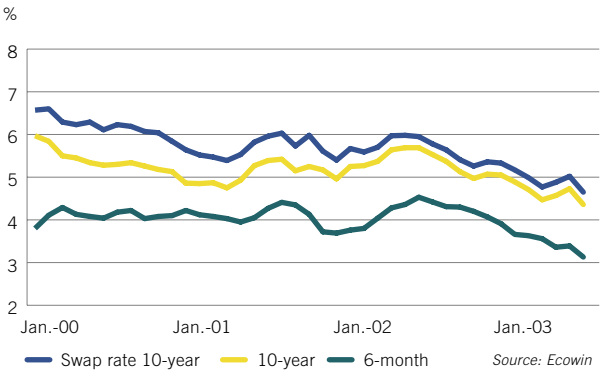
Yield curve, Swedish government securities

%



Interest rate developments

%

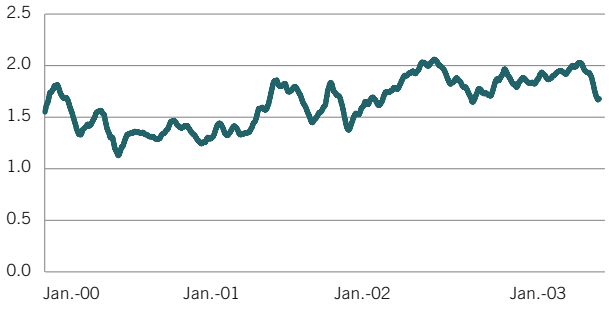


Source: Ecowin

Break-even inflation

%

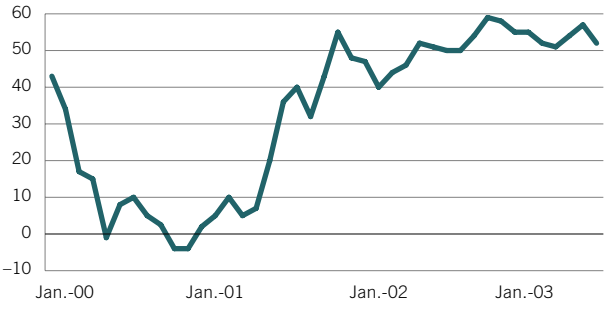
Loan 1041 – 3105



Source: Ecowin

Interest rate spread vs Germany – 10-year

Basis points

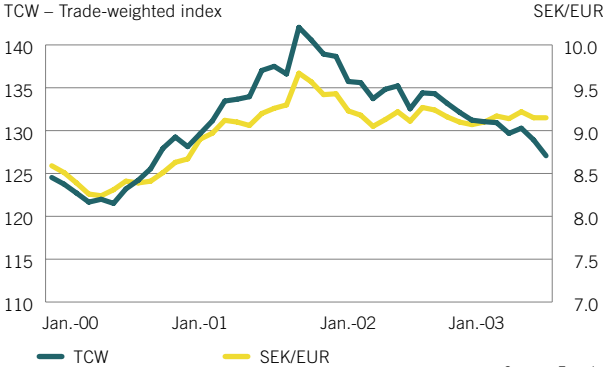


Source: Ecowin

Historical exchange rates

TCW – Trade-weighted index

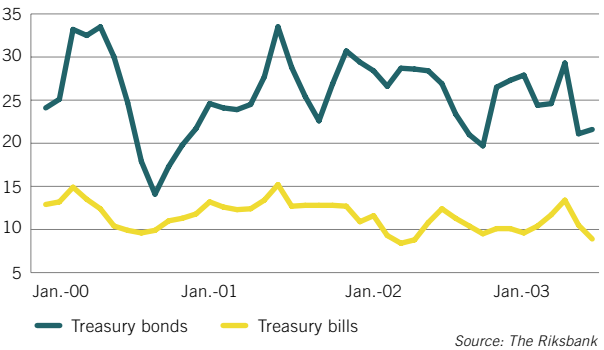
SEK/EUR



Source: Ecowin

Trading volume, Swedish government securities

SEK billion

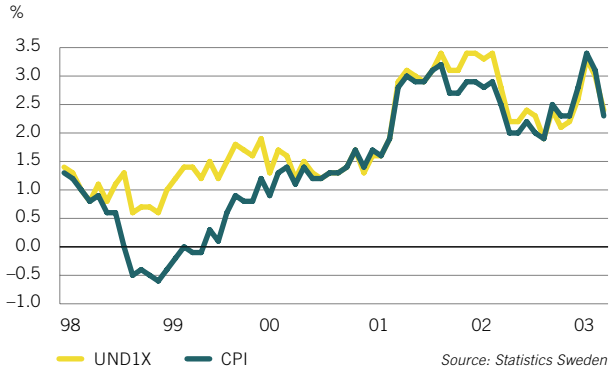


Source: The Riksbank

Swedish economy

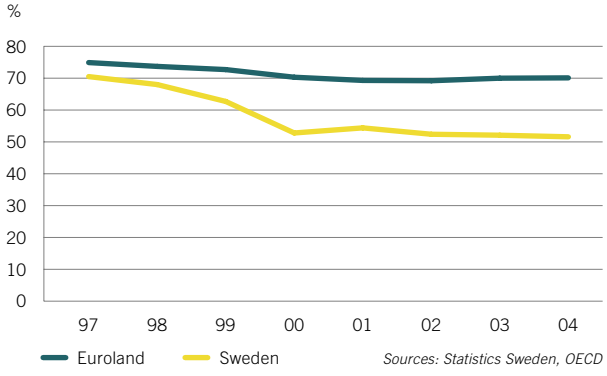
All values up to May 31, 2003

Inflation indexes:
UND1X and CPI in Sweden 1998–2003



Source: Statistics Sweden

General government debt in relation to GDP according to the Maastricht criteria



Sources: Statistics Sweden, OECD

National accounts

Percentage change Supply and demand			2001	2002	2003	2004
Gross domestic product [1]			1.1	1.9	1.4	2.8
Imports			–3.5	–2.7	2.5	8.1
Household consumption expenditure			0.2	1.3	2.2	2.5
Government consumption expenditure			0.9	2.1	1.0	0.9
Gross fixed capital formation			0.8	–2.5	–0.3	4.6
Stock building			–0.4	–0.1	0.2	0.1
Exports			–0.8	0.4	1.9	8.0
Selected statistics	**Mar.-03**	**Apr.-03**	**2001**	**2002**	**2003**	**2004**
CPI, year-on-year		2.3	2.9	2.3	1.5	2.1
Unemployment rate		4.6	4.0	4.0	4.6	4.3
Current account	4.6		4.2	4.2	3.9	4.3

[1] *2,340 SEK billion (current prices 2002).*

Sources: Statistics Sweden, The Riksbank; forecast: National Institute of Economic Research.

Primary dealers	Telephone	Reuter-page
ABN Amro Bank NV	+46-8-506 155 00	PMAA
Danske Consensus	+46-8-568 808 44	PMCO
E Öhman J:or Fondkommission AB	+46-8-679 22 00	PMOR
FöreningsSparbanken	+46-8-700 99 00	PMBF
Nordea	+45-33-33 17 58	PMUB
SEB	+46-8-506 23 151	PMSE
Svenska Handelsbanken AB Publ.	+46-8-463 46 50	PMHD

The next issue of *Central Government Borrowing: Forecast and Analysis* will be published on Wednesday, October 22, 2003, at 9.30 am.

For more information:

Borrowing requirement and government debt:	Lars Hörngren	+46-8-613 47 36 or +46-8-613 47 40
Funding:	Thomas Olofsson	+46-8-613 47 82

Articles published earlier	**Author**	**Issue**
The Debt Office's method for risk analysis	*Johan Palm*	2003:1
Analysis of foreign currency debt structure	*Magnus Andersson and Lars Andrén*	2003:1
Borrowing and funding during 2002		2003:1
How central government debt is funded	*Thomas Olofsson*	2002:3
Swaps in central government debt management	*Anders Holmlund*	2002:3
Electronic trading in the fixed income market	*Tord Arvidsson*	2002:3
Inflation-linked bonds in theory and practice	*Sara Lindberg and Joy Sundberg*	2002:2
Valutaväxlingar på marknaden		2002:2
The Debt office's simulation model	*Anders Holmlund and Sara Lindberg*	2002:1
Real return on equities and inflation-linked bonds	*Magnus Andersson*	2002:1
Borrowing and funding during 3001		2002:1
Proposed guidelines in brief		2001:3
Account balances exchanged for bonds		2001:3
New Treasury bill policy – a proposal		2001:3

RIKSGÄLDS KONTORET
THE SWEDISH NATIONAL DEBT OFFICE

Visiting address: Norrlandsgatan 15 • Postal address: SE-103 74 Stockholm, Sweden
Telephone: +46-8-613 45 00 • Fax: +46-8-21 21 63 • E-mail: rgk@rgk.se • Internet: www.rgk.se

Wildeco