

Central Government Borrowing: Forecast and Analysis

2002:2

Borrowing requirement

The central government borrowing requirement	3
Forecast for 2002	3
Forecast for 2003	4
Sensitivity analysis	5
Adjusted borrowing requirement	5
Comparisons with other forecasts	6
Monthly forecasts	6
The central government debt	6
Forecasts and outcome reports	7

Funding

Gross borrowing	9
Nominal krona borrowing	9
Inflation-linked borrowing	11
Foreign currency borrowing	12
Summary	14

News

Inflation-linked bonds in theory and practice	15
Foreign currency exchanges in the market	19

Market information

Swedish government debt	21
Financial markets	22
Swedish economy	23
Dealers	24

Mandate of the Swedish National Debt Office

The Swedish National Debt Office is the central government's financial manager. It is a state agency under the jurisdiction of the Ministry of Finance, with three main areas of responsibility:

Debt management and borrowing

The Debt Office manages and finances the central government debt by borrowing in the Swedish and international fixed income market. Its goal is to minimise the long-term cost of this debt. Meanwhile the Debt Office shall take into account risk, so that costs do not rise too much if anything unexpected occurs.

Central government guarantees and lending

The Debt Office issues and manages guarantees and loans approved by the Riksdag (Swedish Parliament). Its goal is to ensure transparency and, in the long term, to cover the costs of guarantees and loans that involve credit risks. The Debt Office shall therefore assess the risks of the central government's commitments and set fees for guarantees and interest rates for loans that correspond to the expected cost.

The central government's internal bank

The Debt Office provides loans to state agencies and public enterprises. The agencies must also invest their cash surplus with the Debt Office. The goal is to keep down the central government's interest costs. Because the loans and investments of state agencies are managed within the central government, costs will be lower.



The central government borrowing requirement

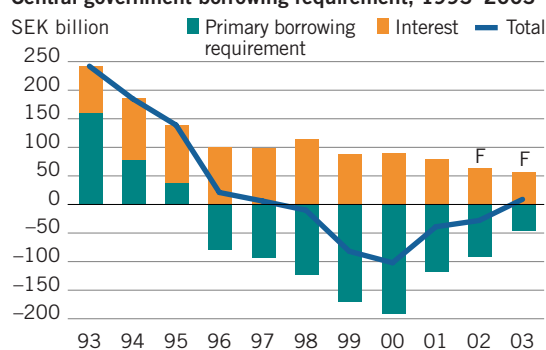
The Swedish National Debt Office's revised forecast for 2002 indicates a surplus in central government payments of about SEK 25 billion, compared to a surplus of SEK 20 billion in the adjusted April forecast. The forecast for 2003 shows a deficit – a positive borrowing requirement – of about SEK 12 billion, representing a deterioration in government finances of SEK 37 billion. Adjusted for nonrecurring payments, the 2003 deficit will total about SEK 17 billion.

The conditions behind the forecast

The economic cycle is important to the borrowing requirement, since it affects both tax revenues and government spending. The current forecast was based on the March report of the Swedish National Institute of Economic Research (NIER). It indicates weak growth during 2002 followed by a significant upturn during 2003. Prices, wages and salaries are assumed to rise during both years. For the central government, such a trend – all else being equal – will mean rising tax revenues.

Aside from the economic picture, actual outcomes of the central government borrowing requirement are an important factor in the Debt Office's assessments. The Debt Office monitors the government's incoming and outgoing payments on a daily basis and can therefore evaluate its forecasts continuously. The outcomes until the end of May 2002 have been weighed into the current assessment.

Central government borrowing requirement, 1993–2003



The Debt Office's forecast of interest payments on the central government debt is based, as always, on the interest rates and foreign exchange rates prevailing on the forecast date. The cut-off date for this forecast is May 31, 2002.

Forecast for 2002

The Debt Office's revised forecast for 2002 indicates a surplus of about SEK 25 billion. The forecast and its effect on central government debt are summarised in the table below, which also presents the outcome for 2001. The chart above shows developments over a longer period.

The forecast published in February indicated a surplus of SEK 10 billion. Owing to a larger surplus than expected during the first quarter, especially due to extra payments to the tax account system, in April the Debt Office adjusted the surplus to SEK 20 billion.

On a total basis, the current forecast thus does not differ much from the preceding one. The components have been adjusted somewhat, as the Debt Office has gone through all portions of the forecast.

Central government borrowing requirement and debt, 2001–2003, SEK billion

	2001	2002 (forecast)	2003 (forecast)
Primary borrowing requirement	-118	-84	-47
Interest payments on debt	80	59	59
Net borrowing requirement	-39	-25	12
Debt adjustments	-73	43	0
Of which transfer from			
National Pension (AP) funds	-69	-	-
Riksbank transfer	-18	-	-
Deposit Guarantee Board, Nuclear Waste Fund and Premium Pension Authority	-	43	-
Revaluation, foreign currency loans	14	0	0
Short-term investments	-11	0	0
Change in central government debt	-122	18	12
Debt at year-end	1,157	1,175	1,187

The primary surplus is estimated at SEK 84 billion. This is SEK 10 billion more than in the February forecast. As mentioned, the most important reason is larger tax revenues. On the other hand, the surplus has been reduced by the fact that the Debt Office no longer anticipates any revenues from divestments of state-owned assets. The reason is that half the year has passed without any

- ▶ concrete divestment plans being presented by the government. The Debt Office's previous assumption was that divestment revenues would total SEK 5 billion.

Outgoing payments so far during the year have mainly followed the forecast. Lower unemployment has held down unemployment benefit costs so much that the increases in benefit levels that will take effect on July 1 will not lead to any revision for the full year. Sickness benefit costs are rising, but this is also what the Debt Office had assumed earlier.

Net lending by the Debt Office is expected to total about SEK 2 billion, unchanged since February. This is less than normal, mainly because the state-owned forest company Sveaskog repaid a loan of SEK 12 billion in January.

Interest payments on the central government debt are estimated at SEK 59 billion in 2002. This is SEK 5 billion lower than in the last forecast. Among the reasons is that the outcome early in the year showed lower interest payments than previously forecasted. In addition, interest on foreign currency loans are projected to be somewhat lower during the remainder of the year than in the Debt Office's previous estimate.

Forecast for 2003

The Debt Office's first forecast for 2003 indicates that for the first time since 1997, there will be a deficit in central government payments. The deficit is estimated at about SEK 12 billion. This represents a swing of about SEK 37 billion compared to 2002. Even though the economy is expected to perform more favourably during 2003, the budget balance will thus deteriorate.

The primary surplus is estimated at SEK 47 billion. This is SEK 37 billion less than in 2002. In other words, the entire swing in the budget is attributable to the primary borrowing requirement. Hidden behind this are large gross changes, among other things connected to the introduction of guarantee pensions. The pension reform means that the special basic deduction for pensioners will be replaced by a general basic deduction. This amounts to a tax hike of nearly SEK 13 billion, which will nevertheless have no budget enhancement effect, since pension disbursements are being raised correspondingly.

Net nonrecurring payments to the central government are expected to decline from SEK 26 billion in 2002 to SEK 5 billion in 2002. The most important reason is that during 2002, the Riksbank (Swedish central bank) made an extra transfer of SEK 20 billion to the Treasury. This decrease is only partly offset by the fact that next year, about SEK 6 billion more of the

mortgage bonds that the Debt Office took over from the National Pension (AP) Funds will mature.

Net payments into tax accounts (excluding taxes paid by central government agencies) are expected to increase by about SEK 30 billion. This reflects continued growth in tax bases, primarily the nominal sum of wages and salaries, private consumption and investments. Supplementary tax payments and back tax payments from households and companies are assumed to decline by SEK 5 billion compared to 2002. One important factor behind supplementary payments is capital gains on shares and real estate. These are notoriously difficult to foresee, both in size and in distribution over time. The Debt Office also assumes that the last stage of the planned roll-back of earlier increases in the general pension charge paid by households will not occur in 2003. According to calculations in the government's spring Budget Bill, there is no room for such a tax cut, which would cost about SEK 10 billion, given the target of a general government surplus equivalent to 2 per cent of Gross Domestic Product (GDP).

When it comes to revenues from divestments of state-owned property, the Debt Office assumes that incoming payments during 2003 will be SEK 5 billion. This is lower than the government's estimate in its spring Budget Bill, but is consistent with the experiences of recent years, when such divestments have been small.

On the expenditure side, disbursements to local governments will increase by about SEK 15 billion.¹ This reflects the fact that local government tax revenues, which are collected by the central government and then disbursed to the local governments, will rise along with growing total wages and salaries. Disbursements for social insurance benefits via the National Social Insurance Board will rise by about SEK 7 billion (excluding pensions). Of this, sickness benefit will account for SEK 4 billion.

Disbursements by the National Labour Market Board are expected to rise by SEK 3 billion due to higher unemployment benefit levels. A more technical effect is that "area aid" to farmers will increase by about SEK 4 billion, since the level of such aid is abnormally low during 2002. The reason is that the year's disburse-

¹ This does not include the effects of the change in the local government account system that enters into force on January 1, 2003, when a new financing model for the system takes effect. The local government account system will disburse payments that compensate municipalities and county councils for their initial value-added tax (VAT) on activities not liable for taxation. Today the system is financed by having municipalities and county councils pay fees intended to cover the withdrawals. The new financing model signifies that the fees paid by municipalities and county councils are being abolished and that withdrawals from the system will occur from the revenue side of the central government budget. The change does not affect the borrowing requirement.

ments were accelerated into 2001 to make room under the central government's budget expenditure ceiling.

Interest payments on the central government debt will amount to an estimated SEK 59 billion in 2003, nearly the same level as this year.

Sensitivity analysis

As mentioned, the forecast is uncertain, among other things because its assumptions about economic developments may prove incorrect. Presented below is a partial analysis of the impact on the borrowing requirement that changes in some important macro variables, roughly estimated and each taken separately, 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.

One per cent/percentage point increase

Effect on the borrowing requirement, SEK billion

Total wages and salaries ²	-6
Household consumption, current prices	-(1-2)
Registered unemployment	3.5-4.5
Swedish interest rates	3
International interest rates	1
Exchange rate	0.5

² Local income-based taxes 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 scale in the table – is larger than the permanent effect.

Borrowing requirement adjusted for nonrecurring effects

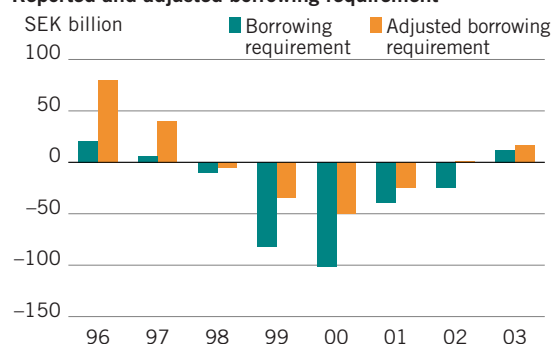
Nonrecurring payments play a considerable role for the borrowing requirement, both for the requirement during individual years and for the change between years. In 2002, calculations indicate that the central govern-

ment's finances are largely in balance after adjusting for nonrecurring payments, i.e. net nonrecurring payments to the central government are expected to total about SEK 25 billion. The most important nonrecurring effects are about SEK 7 billion in maturing mortgage bonds that were transferred from the AP Funds and an extra transfer of SEK 20 billion from the Riksbank.

The adjusted borrowing requirement will increase to SEK 17 billion in 2003. The most important nonrecurring payments to the central government will be maturing mortgage bonds totalling SEK 13 billion and revenues from divestments totalling SEK 5 billion. Working in the opposite direction is the fact that the Debt Office's net lending during 2003 will total an estimated SEK 13 billion and that most of this is regarded as a nonrecurring incoming payment, since the loans will eventually be repaid.

For a more detailed description of nonrecurring – or temporary – payments, see the forecast report of January 31, 2001.

Reported and adjusted borrowing requirement



Comparison between forecasts of borrowing requirement, SEK billion

	Debt office		Government		NIER		ESV	
	2002	2003	2002	2003	2002	2003	2002	2003
Primary borrowing requirement	-84	-47	-88	-45	-70	-33	-73	-17
Interest payments	59	59	61	58	61	62	62	61
Net borrowing requirement	-25	12	-27	13	-9	29	-11	44

▶ Comparisons with other forecasts of the borrowing requirement

The National Institute of Economic Research (NIER) published its most recent forecasts of the central government borrowing requirement in March, the Swedish government in April and the Swedish National Financial Management Authority (ESV) in June (see table below).

The Debt Office's forecast for the current year indicates a surplus of about SEK 25 billion, about as large a surplus as the government is forecasting. Adjusted for known differences in divestment and interest rate assumptions, however, the surplus according to the Debt Office forecast is SEK 11 billion larger than in both the government and ESV forecasts.³

The Debt Office's forecast for 2003 indicates a borrowing requirement of about SEK 12 billion, which is lower than other forecasters. Adjusted for known differences in divestment and interest rate assumptions, this is a borrowing requirement that is SEK 12 billion lower than the government forecasts. Making the same type of adjustment, ESV is forecasting that the borrowing requirement will be SEK 25 billion larger.

At first glance, the differences between the estimates of the Debt Office and other forecasters appear large. This picture is modified, however, if one looks at differences in level and the change between years, respectively. The Debt Office's forecast for the 2002 surplus then turns out to be higher than that of the other forecasters. The Debt Office bases its forecast for the current year on outcomes from the first five months of the year and thereby believes that the level is well balanced. However, the government, the NIER and the Debt Office have about the same view of the change between 2002 and 2003. In this respect, ESV deviates from the others, since its forecast indicates a considerably more dramatic deterioration in central government finances than the other forecasters.

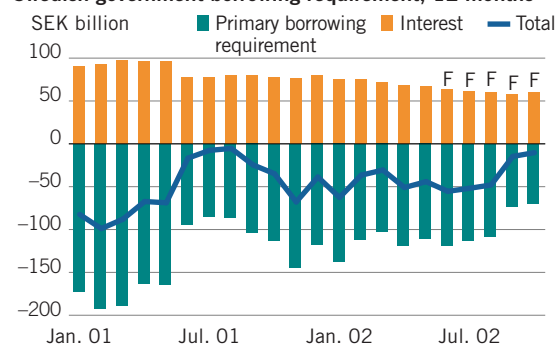
³ The Debt Office, like ESV, assumes no divestment revenues during 2002 – unlike the NIER and the government, which assume that these revenues will total SEK 15 billion. In 2003, the Debt Office assumes SEK 5 billion in divestment revenues: SEK 5 billion higher than ESV's assumption and SEK 10 billion lower than those of the NIER and the government.

Monthly forecasts

Three times annually, the Debt Office presents detailed forecasts. Meanwhile it publishes monthly forecasts for the intervening months. The current forecast presents monthly projections for June up to and including October, when the next report will be published (see table below). If these forecasts need to be adjusted between the regular forecasting dates due to final outcomes or other new information, this will be reported in conjunction with the presentation of the borrowing requirement for the previous month.

Most of the big difference in the borrowing requirement in September 2002 compared to last year is due to substantially larger maturities of mortgage bonds transferred from the AP Funds to the Debt Office during 2001, compared to 2002.

Swedish government borrowing requirement, 12 months

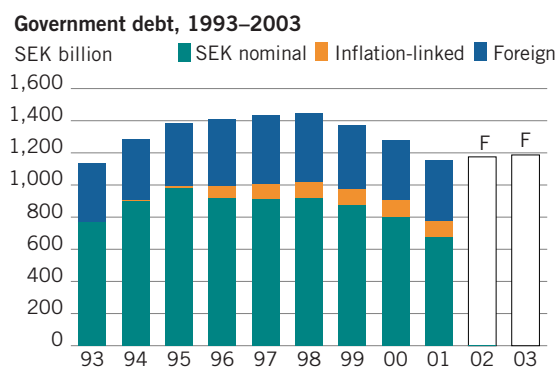


The central government debt

Sweden's central government debt was SEK 1,157 billion at the end of 2001. During 2002, the debt is projected to increase to about SEK 1,175 billion (see chart below). The debt is thus expected to increase despite a forecasted budget surplus of SEK 25 billion. The reason is the decision to transform most of the account balances of the Swedish Nuclear Waste Fund, the Premium Pension Authority and the Deposit Guarantee Board at the Debt Office into Treasury bonds on July 1, 2002. This will increase reported government debt by about SEK 43 billion. It is a matter of an adjustment in the Debt Office's accounts, where one type of debt is exchanged for another. The transaction will have no cash flow effects and will therefore not affect the budget balance. Nor will it affect the consolidated government debt, which takes into account agencies' holdings of Swedish government securities.

In 2003 there are no known debt-influencing effects other than the change in the central government budget.

The central government debt will thus increase by an estimated SEK 12 billion and amount to SEK 1,187 billion at the end of 2003.



Forecasts and outcome reports

The Debt Office produces forecasts on the Swedish central government borrowing requirement as a form of documentation for central government debt management, and in order to supply the participants in the financial market with information on the central government's funding requirements. The government, the Swedish National Financial Management Authority (ESV) and the National Institute of Economic Research (NIER) regularly publish analyses of the central government's fiscal outlook, which include forecasts of the borrowing requirement. The reports vary in terms of their content, forecast horizon and methods, since they are produced for different purposes. In addition, both the Debt Office and ESV publish figures on the outcome of the central government's borrowing requirement. Here, too, there are differences in the reporting. The following is a brief description of similarities and differences between the reporting of the various government agencies.

Forecasts

The Swedish government presents budget forecasts in its spring and autumn Budget Bills. The forecast covers the coming three years in the spring Budget Bill and the coming four in the autumn Budget Bill. The central

government budget is defined in such a way that the budget balance equals the central government's borrowing requirement, the only difference being that a budget surplus equals a negative borrowing requirement (and vice versa). Equality (in absolute terms) is guaranteed by adding an adjustment to a cash basis to the net amount of all revenues and expenditures in the central government budget. Consequently a forecast of the budget balance is simultaneously a forecast of the borrowing requirement. In the government's analyses, the emphasis is often on public sector financial savings, rather than the budget balance, since the government's budget policy target is related to financial savings. Expenditures in relation to the expenditure ceiling are also often more important than the budget balance.

ESV publishes a report entitled "Budget Forecast" four times per year. Its forecast horizon extends for five years at most and is expressed in annual amounts. For the current year, *ESV* also reports monthly forecasts. The forecasts follow the structure of the central government budget. Besides the fact that the budget balance provides a forecast of the borrowing requirement, *ESV* can thus estimate how expenditures are related to the expenditure ceiling. *ESV* projects what will happen if no new decisions are made. One consequence of this method is that revenues from such sources as divestments of state-owned assets are normally included only when a formal decision has been made.

The *NIER* publishes a report entitled "The Swedish Economy" four times per year. Its forecast horizon extends for three years at most and covers full years. The *NIER*'s estimates are made in terms of the National Accounts. The central government's fiscal situation is therefore described primarily in terms of financial savings. This estimate is translated into a forecast for the budget balance (borrowing requirement) by adjusting financial savings for items that affect the budget but not the central government's financial savings (and vice versa). In a similar way, the *NIER* also makes calculations related to the expenditure ceiling.

The Swedish National Debt Office publishes the report "Central Government Borrowing: Forecast and Analysis" three times per year. The report contains monthly forecasts up to and including the next publication date plus a forecast for the current year. The June and October

Central government borrowing requirement, SEK billion

	June		July		August		September		October	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
Primary borrowing requirement	-14.2	-22.7	-8.5	-2.2	-0.6	5.0	-37.6	-3.2	-2.7	0.4
Interest payments	4.9	2.0	3.2	0.3	6.4	4.8	3.4	2.2	-1.0	0.3
Net borrowing requirement	-9.4	-20.7	-5.4	-1.9	5.9	9.8	-34.3	-1.0	-3.7	0.7

- ▶ reports also include a forecast for the following year. The forecast is based on estimates of some fifty major cash flows to and from the central government. The Debt Office's forecasts are always made on a strictly cash flow basis, since their primary purpose is to provide documentation for the Debt Office's loan planning. The central government budget is of interest only to the extent that it provides background material for cash flow forecasts. For this reason, the Debt Office publishes no estimates concerning the expenditure ceiling.

Number of forecasting publications per year

	Government	ESV	NIER	Debt Office
Borrowing requirement	2	4	3	3
Central government budget	2	4		
Central government expenditure ceiling	2	4	3	
Financial savings	2		3	

Outcome reports

The Debt Office publishes the monthly outcome for the central government borrowing requirement on the fourth business day after the end of the month. This outcome is compared to the Debt Office's latest monthly forecast. The Debt Office monitors the borrowing requirement on a daily basis. The outcome for a month is, by definition, equal to the sum of the daily borrowing requirement during the month. The Debt Office can therefore quickly report total outcome, even though its information on the cash flow structure is incomplete.

ESV publishes the monthly outcome of the central government budget at the end of the following month. This outcome is compared to *ESV*'s latest forecast. *ESV*'s report presents the outcome according to the expenditure categories in the central government budget, rather than in cash flow terms. Due to an adjustment of the outcome to a cash basis, the budget balance reported for the month coincides with the borrowing requirement according to the Debt Office's report for the same period.

Funding

The central government's funding requirement in the form of bonds is expected to be about SEK 47 billion in 2002, which is somewhat lower than in the preceding forecast. Provided that the Debt Office resumes amortisations of foreign currency loans in 2003, it expects that borrowing in the form of bonds will need to increase to about SEK 96 billion. Under these conditions, issue volumes of nominal Treasury bonds need to increase to SEK 3 billion per auction during the autumn. A further increase may be needed next year. The Debt Office estimates that there is potential to issue inflation-linked bonds at an annual pace of about SEK 10 billion.

Gross borrowing

The Swedish National Debt Office presents below its forecast for the funding requirement during the rest of 2002 plus 2003. This forecast is based on the government's decision on overall guidelines.

As indicated in the preceding sections, the *net borrowing requirement* is expected to be about SEK –25 billion in 2002. This means that the budget surplus will be SEK 15 billion larger than stated in the Debt Office's February forecast. Next year, the net borrowing requirement is projected to show a deficit of about SEK 12 billion, which implies an increase of SEK 37 billion compared to 2002.

The guiding principle of the Debt Office's funding plans, however, is *the gross borrowing requirement*, i.e. the Debt Office's total funding requirement. This consists of the sum of the net borrowing requirement and maturing bonds, including buy-backs and exchanges of Treasury bonds to Treasury bills.

Gross funding requirement, SEK billion

	2002	2003
Net borrowing requirement	-25	12
Maturing loans, plus exchanges and buy-backs	93	94
Maturing Treasury bonds	11	14
Maturing foreign currency loans ¹	35	30
Buy-backs and exchanges of bonds to bills	46	51
Funding requirement, excluding short-term SEK funding	68	106
Net short-term funding and borrowing from households ²	-4	2
Funding requirement, bonds and foreign currency debt	72	104
Foreign currency borrowing ¹	20	-2
Inflation-linked bond issues ³	5	10
Nominal Treasury bond issues ⁴	47	96

¹ Direct foreign currency loans, spot market, evaluated at book value

² Net funding in Treasury bills

³ Average volume of issue per auction period

⁴ Average volume of issue per auction

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

The total funding requirement in 2002 is expected to be about SEK 68 billion, which is SEK 14 billion lower than in the February forecast. Combined with a slight cutback in short-term funding, this works out to a funding requirement of about SEK 72 billion in bonds and foreign currency debt, which is SEK 6 billion lower than in the previous forecast.

Buy-backs and maturities in 2003 will be on about the same scale as in 2002. The funding requirement will thus increase at the same pace as the net borrowing requirement. This results in a funding requirement of about SEK 104 billion in bonds and foreign currency debt, i.e. an increase of SEK 32 billion compared to 2002.

The table to the left also presents an estimate of the allocation of the Debt Office's funding requirement by types of debt – nominal Treasury bonds, inflation-linked bonds and foreign currency borrowing.

Nominal krona borrowing

Short-term borrowing

Borrowing in Treasury bills is not expected to provide any net contribution to funding this year. As a share of total central government debt, outstanding Treasury bills will thus show a slight decline.¹ This is one of the preconditions for preventing a decline in the overall duration (maturity) of central government debt. In 2003, however, the contribution of Treasury bills is

¹ The table includes the item "Short-term funding and borrowing from households". In addition to changes in Treasury bills outstanding, this item also includes changes in short-term funding (i.e. liquidity management instruments such as liquidity bills, overnight loans and repurchase agreements=repos), which mainly arise as a result of the way that cash flows are allocated around the turn of the year. The net change in Treasury bill loans is thus of greatest interest when discussing longer-term funding. In this context, changes in borrowing from households are small.

- ▶ expected to be about SEK 15 billion. This will mean that their share of the debt portfolio will remain largely unchanged.

The Debt Office may also create short-term borrowing by issuing bonds and using interest rate swaps (exchanges of fixed interest for floating rates) in order to create short-term interest rate exposure. This borrowing technique leverages the central government's comparative advantages as a borrower in long maturities, enabling it to reduce its borrowing costs. Meanwhile the supply of bonds becomes larger, strengthening the liquidity of the bond market. During 2002, shrinking swap spreads – the difference between swap interest rates and Treasury bond interest rates – have resulted in smaller cost advantages, however. Under the present market conditions, the Debt Office does not anticipate utilising interest rate swaps as a substitute for Treasury bill borrowing during 2003. The use of swaps in foreign currency borrowing is discussed in greater detail in the following sections.

During the spring, the Debt Office changed its technique for Treasury bill loans. This change was presented in the last issue of *Central Government Borrowing*. At any given time, the Debt Office will normally have six Treasury bill loans outstanding. The Debt Office will issue the two shortest-term Treasury bills only on tap, i.e. with a remaining maturity that is shorter than three months. In conjunction with exchanges of Treasury bonds to Treasury bills, the Debt Office may issue bills with longer maturities than twelve months.

Nominal Treasury bonds

Issue volume

The Debt Office expects a funding requirement in nominal bonds of about SEK 47 billion during 2002. This is marginally lower than its estimate in the February forecast. In 2003, the issue requirement in the form of bonds is expected to rise to about SEK 96 billion.

The Debt Office expects that it will have to raise its current issue volume of SEK 2 billion per auction to SEK 3 billion starting in October. It projects the need for an additional increase to around SEK 4 billion per issue date early in 2003. Until further notice, an enlargement of issue volumes next year should be regarded as a projected consequence of a scenario based on various uncertain assumptions, including the change in the borrowing requirement.

These higher issue volumes should be seen in light of an increased net borrowing requirement next year, equivalent to about SEK 35 billion. A decrease in direct foreign currency borrowing next year, equivalent to about SEK 20 billion (see the section below on foreign

currency borrowing), will also help boost the bond issue requirement. Decreased foreign currency borrowing must be replaced by borrowing in SEK.

As indicated below, during 2002 approximately SEK 35 billion of the refinancing of maturing foreign currency loans will be covered by Treasury bond issues that (via swaps) are converted into foreign currency exposure (referred to here as SEK/swap borrowing).² Given a total Treasury bond issue volume of SEK 47 billion in 2002, this means that about 75 per cent of total borrowing in the form of these bonds is swapped to foreign currencies. During 2003, the Debt Office assumes that the corresponding share will fall to about 25 per cent, since SEK/swap borrowing will be limited to about SEK 25 billion. All else being equal, a lower volume of SEK/swap borrowing next year will limit the need to increase Treasury bond issue volumes. It will also counteract the shortening of average central government debt maturity resulting from the shortening of existing debt maturities over time.

Loans to be included in planned issues

The electronic trading system in the Swedish interbank market focuses on three reference (“benchmark”) loans that have maturities of two, five and ten years. They can thus be called “super-benchmark” loans. The Debt Office's policy is to maintain good liquidity in all benchmark loans. At the same time, there is reason to allow borrowing policy to contribute to the liquidity of super-benchmark loans. This implies that bond issues will consist mainly of these loans, that is, they will have “on the run status”.

In March, the Debt Office introduced loan 1046, which falls due on October 8, 2012. In terms of maturity, it lies midway between loans 1045 (5.25%, March 2011) and 1041 (6.75%, May 2014). Loan 1046 is now being traded as a 10-year loan in the electronic trading system. The loan had reached a volume of SEK 32 billion as of May 31.

² For cost reasons, the Debt Office has chosen to raise loans in Swedish kronor and convert them, using swap agreements (SEK/foreign currency swaps), into foreign currency debt. In most cases, this has proved cheaper than direct foreign currency borrowing. This form of foreign currency borrowing can be said to consist of two parts. One involves carrying out SEK-denominated borrowing using regular bond issues, i.e. the Debt Office assumes a debt in kronor. The second part involves carrying out SEK/foreign currency swaps, with banks as counterparties. In the SEK/foreign currency swap, the Debt Office obtains an asset in kronor – which is the same size as the SEK-denominated debt that arose through the bond issue – and a foreign currency debt. The SEK debt has thus been transformed into a foreign currency-denominated debt. There is a cost saving, because due to the swap, the Debt Office earns higher interest from the bank than the interest the Debt Office pays for the bond issue. This difference is called the swap spread.

Beginning in August, there will be a change in the principles determining what loans are counted as benchmark loans in the electronic trading system. At any given time, the benchmark loans will consist of those loans that have maturities closest to two, five or ten years. In other words, a change in benchmark loan may take place at any time. According to the new principle, benchmark loans change only on IMM dates (the third Wednesday in March, June, September and December) and with the criterion that in terms of maturity, the loans should be closest to two, five and ten years on the following IMM date. Given this change, an underlying loan in forward contracts will always be the same as a benchmark loan during the three final months of the contract.

Inflation-linked borrowing

Issue volumes

In the judgement of the Swedish government and of the National Debt Office, an increased share of inflation-linked bonds in central government debt would lower risks. However, the increase in this share should occur at the pace that is allowed by market demand and is reconcilable with the Debt Office's goal of minimising costs.

During the spring of 2002, average demand for inflation-linked bonds was stronger than during 2001. Market pricing normalised and the difference in interest rates compared to the nominal market was largely consistent with inflationary expectations and inflation targets. The conditions thus became more favourable for inflation-linked borrowing. However, changes in issue volumes should be made with caution, since the inflation-linked bond market does not have the same depth as the nominal bond market, and pricing may be sensitive to major changes in supply.

In the judgement of the Debt Office, current market conditions allow inflation-linked bond issues at an annual pace of about SEK 10 billion. This is equivalent to about SEK 1 billion per issue month. However, the issue volume on individual issue dates will be decided after the Debt Office has heard proposals from dealers and investors and will be based on the prevailing demand situation and the pricing picture.

Loans to be included in planned issues

The Debt Office's policy has been to narrow down the outstanding stock of inflation-linked bonds for the purpose of building up volume and liquidity in fewer loans, with a focus on coupon loans.

For this purpose, the Debt Office has carried out

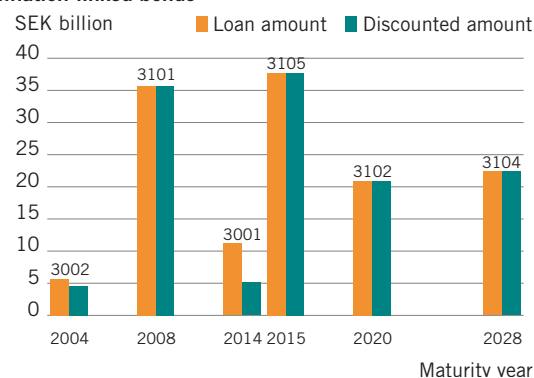
buy-backs and exchanges at auctions. A total of more than SEK 9 billion of loan 3002 (0%, 2004) has been bought back. This loan has a short remaining maturity. Its liquidity has deteriorated as pricing has become more volatile. The market has been offered exchanges of loan 3001 (0%, 2014) for loan 3105 (3.5%, 2015). For the purpose of building up liquidity in loan 3104 (3.5%, 2028), loan 3102 (4%, 2020) has been exchanged for 3104. Loans 3105 and 3104 have now reached satisfactory volumes. There is thus no strong need for further restructuring. The Debt Office's strategy will thus be pure bond issues.

To date, loans 3101, 3105 and 3104 have been issue candidates. As the exchanges from 3102 and 3104 end, 3102 may also be issued. Loan 3101 (4%, 2008) has a large outstanding volume. Within a couple of years there will be reason to introduce regular exchanges for longer-term loans. However, until further notice this loan will remain an issue candidate. The chart below shows loans outstanding as of May 31, including the estimated impact of the transfer of the account assets of certain government agencies.

The Deposit Guarantee Board, the Swedish Nuclear Waste Fund and the Premium Pension Authority have assets deposited in accounts at the Debt Office. On July 1, 2002, these assets will be converted to Treasury bonds in accordance with a decision of the Riksdag (Swedish Parliament) and the government. In a press release on May 3, 2002, the Debt Office explained the effects of this step on outstanding stocks of bonds. The outstanding inflation-linked bond portfolio is expected to increase by about SEK 30 billion, while its duration will increase by about 0.6 years. The Debt Office will announce more exact figures on the impact on outstanding inflation-linked loans after the transfer has taken place.

To summarise, the Debt Office may issue loans 3101, 3105, 3102 and 3104. It mainly expects to issue bonds for the three longest-running loans. ▶

Inflation-linked bonds



► Auction mechanisms

Flexible issue volumes

In *Central Government Borrowing 2002:1*, the Debt Office discussed the possibility of occasionally using flexible issue volumes for inflation-linked bonds. The proposed flexibility implies that in case of good demand, the issue volume at an auction may be increased by a pre-stated amount. One precondition is that this can occur at a reasonable interest rate and without significant impact on interest rates.

Internationally there are limited precedents, although France uses an interval system in its auctions. The Debt Office has gathered opinions from dealers and investors.

Although reactions have not been unambiguous, the Debt Office has drawn the conclusion that flexible issue volumes should be introduced as an alternative to fixed volumes. A degree of flexibility at individual auctions may allocate a planned volume of bond issues more efficiently over the year. Flexible issue volumes will be used when the demand is deemed good, but when there is uncertainty about what this implies in terms of issue volumes. On other occasions, fixed volumes will apply. Flexibility per auction will be relatively narrow, for example SEK 500 million.

The choice of loans, issue mechanisms and volume on individual issue dates will be decided after gathering proposals from dealers and investors. Issue terms will be announced one week before the auction. If the auction is implemented with flexible volumes, the volume offered will be announced in terms of an interval.

Allocation principle at inflation-linked bond auctions

The Debt Office has also raised the question of whether there is reason to switch to uniform pricing as an allocation principle at auctions of inflation-linked bonds. Uniform pricing means that all those that receive an allocation buy at the highest acceptable interest rate. The purpose would be to decrease uncertainty for investors at each individual auction. For the issuer, this may signify more aggressive bids and thereby result in lower average borrowing costs.

The reactions to this proposal have been mixed. Internationally, both uniform pricing and competitive pricing are used. For example, uniform pricing is used for inflation-linked bonds in the United Kingdom and for all government bond auctions in the United States.

The Debt Office welcomes continued discussion on the allocation principle, based on the experience from the Swedish market, but until further notice it will retain competitive pricing at its inflation-linked bond auctions.

Foreign currency borrowing

The Debt Office is currently not amortising foreign currency loans. This decision implies that the Debt Office will deviate by nearly SEK 15 billion from the government's amortisation benchmark of SEK 15 billion in 2002. In the judgement of the Debt Office, the krona is undervalued and may be expected to strengthen in the future. There are currently no plans to resume amortisations during this year. The performance of the krona will be an important factor in a decision to change the pace of amortisation.

In its annual guidelines for debt management, the government has stated that in 2002, the benchmark for the pace of amortisation should be SEK 25 billion. Today there is no reason to choose another benchmark as the basis for the 2003 funding forecast.

During 2002, foreign currency loans and currency swaps equivalent to more than SEK 53 billion will fall due. To achieve a pace of amortisation close to zero, the Debt Office must borrow the equivalent of SEK 55 billion in foreign currencies.

Foreign currency loans may be raised by issuing Treasury bonds and swapping these for exposure to foreign currencies (referred to here as SEK/swap borrowing) or by direct borrowing in foreign currencies. Taking into account the depth of the swap market, the Debt Office's assessment is that the volume of swaps should be limited to SEK 35 billion in 2002, while direct foreign currency borrowing should be equivalent to about SEK 20 billion. Given the market conditions at present, however, it cannot be ruled out that the scale of SEK/swap borrowing may be cut back and be replaced by foreign currency borrowing.

Foreign currency debt amortisation (change in currency exposure), SEK billion

	2002	2003
Gross foreign currency loans	55	22
Benchmark for foreign currency borrowing	-2	-25
Maturing foreign currency loans ¹	35	30
Maturing currency swaps	18	11
Realised exchange rate differences	6	6
Other	-2	0
Gross foreign currency loans	55	22
Gross foreign currency loans ¹	18	5
Net short-term foreign currency loans ²	3	-7
Gross foreign currency swaps	35	24

¹ Direct foreign currency loans in the spot market, evaluated at current 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.

During the spring, the Debt Office issued a three-year US dollar bond loan in the eurodollar market, equiva-

lent to about SEK 13 billion. In addition, so far this year the Debt Office has borrowed about SEK 17 billion by means of SEK/swap borrowing. During the autumn, the Debt Office expects to borrow about SEK 5 billion more in the international capital market. The scale will depend on how good terms can be achieved. The remaining borrowing requirement will be covered by SEK/swap borrowing, while net funding in the commercial paper market will be about SEK 3 billion.

During 2003, foreign currency loans and currency swaps equivalent to SEK 41 billion will fall due. This is SEK 12 billion less than in 2002. The Debt Office expects that it will need to refinance maturing foreign currency loans equivalent to SEK 22 billion next year, i.e. SEK 33 billion less than in 2002.

The reduced refinancing requirement in 2003 will mean that the scale of SEK/swap borrowing can decrease by SEK 10 billion to SEK 24 billion. The Debt Office

has also assumed that it will borrow SEK 5 billion in the international capital market. Outstanding short-term foreign currency borrowing, which is projected to amount to SEK 3 billion at the end of 2002, can be phased out entirely under these circumstances. Net direct foreign currency borrowing will thus be SEK -2 billion during 2003. This is about SEK 20 billion less than in 2002, which is one of the reasons for the increase in the issue volumes of bonds.

Taking into account maturing swaps and the loan volume assumed here, the outstanding stock of interest rate and foreign currency swaps will increase by about SEK 17 billion this year and SEK 13 billion next year. The Debt Office carries out swaps at a relatively uniform pace during the year. The average maturities of interest rate swaps should have the same duration as bond issues.

Capital market loan of USD 1.25 billion

On May 16, the Debt Office carried out a bond issue of USD 1 billion maturing in December 2005. The loan was extended the following day by USD 250 million.

This was the first time since 1999 that the Kingdom of Sweden had borrowed in international capital markets. The issue was carried out in light of the extensive refinancing requirement that has arisen because the Debt Office is, at present, not amortising foreign currency loans. The strong government budget situation, and the fact that Sweden once again has the highest international credit rating in foreign currency contributed to strong demand and favourable borrowing terms. The loan was issued by a consortium, with ABN AMRO and Schroder Salomon Smith Barney as the joint lead manager banks. Seven additional banks participated in the consortium.

The loan was priced at 108 basis points above two-year US Treasury notes (the extension was priced at 105

basis points). According to the indicative swap interest rates prevailing on the borrowing date, this was equivalent to a floating cost of 17–19 points below USD LIBOR (the floating bank interest rate for dollar loans in the eurodollar market). The extension of the loan resulted in the equivalent of roughly another 2 points lower floating interest cost.

The loan was allocated relatively equally between Asia and Europe. Nearly half of the investors consisted of central banks. Of the total loan, 35 per cent was sold to Asia outside Japan, 25 per cent to the United Kingdom, 11 per cent to the Middle East, 8 per cent to Switzerland, 5 per cent to Japan, and the rest was evenly distributed in Europe. The largest single category of investors was central banks in Asia. Overall, the demand for the loan was strong, both at the time of placement and in the subsequent secondary market.

► Summary

The Debt Office's funding requirement in bonds and foreign currencies is expected to be about SEK 72 billion in 2002, which is somewhat lower than in the last forecast. Next year, this funding requirement is expected to rise to about SEK 104 billion. Under these conditions, issue volumes of nominal Treasury bonds will need to increase to SEK 3 billion per auction starting in October 2002. A further increase to about SEK 4 billion per auction may be needed after the turn of the year, but this assessment is based on a number of uncertain assumptions. Borrowing in the form of bonds will be higher, due to an expected increase of SEK 35 billion in the net borrowing requirement and a decrease of about SEK 20 billion in direct foreign currency borrowing next year.

In the judgement of the Debt Office, there is a potential to issue inflation-linked bonds at an annual

pace of about SEK 10 billion. Flexible auction volumes, with an opportunity on the issue date to expand the issue volume by an amount established in advance, will be introduced as an alternative auction mechanism to fixed-volume issues. Auction activities will continue to focus on pure auctions in the four outstanding inflation-linked coupon loans, preferably the three with the longest maturities.

The Debt Office's calculations assume that its amortisations of foreign currency debt will be resumed in 2003, in keeping with the government's medium-term guideline decision. Consequently only about SEK 22 billion in foreign currency loans will need to be refinanced. This means that the Debt Office's presence in the swap market will decrease by about SEK 10 billion. No net direct foreign currency loans need to be raised next year.

Inflation-linked bonds in theory and practice

The Swedish National Debt Office commissioned an independent financial consultant to survey the attitude towards inflation-linked bonds. Investors, asset managers and financial investment advisers were interviewed about who and what influences investment decisions. Many institutions use asset and liability management (ALM) studies to match the two sides of their balance sheet in order to establish their strategic portfolio. ALM studies point towards a relatively high share of inflation-linked bonds in the portfolio, but in practice, various subjective judgements will lower this share.

Institutional commitments

Of the institutions that were interviewed, it is mainly pension funds that have a clear, inflation-linked commitment side in their balance sheet. Of these, certain central government-administered pension funds have commitments directly connected to the Consumer Price Index (CPI). Some of the insurance companies that were interviewed have a partially inflation-linked commitment side, for example with certain payments connected to the inflation level or to the Swedish social insurance system's inflation-indexed "base amount".

The strategic portfolio

All of the Swedish National Pension Funds (AP Funds) except the Fourth AP Fund, most employer-run pension funds and some insurance companies have inflation-linked bonds in their strategic portfolio. There are major variations in how large a share of their total portfolio these bonds represent. In general, the AP Funds have between 5 and 10 per cent of their assets invested in inflation-linked bonds. The two largest employer pension funds in the survey have 20 and 40 per cent inflation-linked bonds in their portfolio, respectively, while some employer pension funds have none at all. As a rule, insurance companies have small shares of inflation-linked bonds in their portfolio. It is usually a matter of between one and two per cent, although there are exceptions.

Among Swedish mutual funds (unit trusts), there is only one inflation-linked fixed-income fund today. No mixed mutual funds have established the objective of surpassing a benchmark index by holding a certain share of inflation-linked bonds.

The decision-making level

At a majority of institutions whose representatives were interviewed, the Board of Directors makes the decision

that establishes the strategic portfolio. The report shows, however, that the Board's knowledge of financial theory and portfolio management varies from one institution to another. In many cases, an institution's expertise is found among its employees, who thus have a major influence on the decision-making process, even if the Board formally makes the decision.

ALM studies

A majority of institutions that have an explicit commitment side in their balance sheet carry out some form of ALM study to establish their strategic portfolio. This ALM study is usually quantitative, but how the study is done and by whom varies greatly. Major insurance companies and AP Funds often have their own units or special analysts that carry out ALM studies, while other institutions mainly enlist the aid of financial consultants.

Consultants seem to be hired primarily by institutions that are undergoing changes, or by institutions in which there is no large, established asset management organisation. Examples of such institutions are AP Funds and certain employer pension funds. Municipalities also increasingly tend to use consultants in order to obtain help with their long-term asset management. Larger and older institutions, however, rarely seem to rely on consultants. Small institutions may likewise be cautious about relying on the help of consultants. Since they also often have insufficient resources to perform their own ALM studies, they instead tend to listen to advice from discretionary asset managers that compete for contracts to manage their portfolios.

The results in practice

ALM studies done by consultants and internal analysis units often result in recommendations to have a sizeable share of inflation-linked bonds in the strategic portfolio. The reason is that inflation-linked financial instruments have good matching and diversification charac-

- ▶ teristics. However, it is very rare for the findings of an ALM study to be transformed directly into a strategic portfolio without any adjustments. There may be other, more subjective, judgements that influence the decision on this portfolio. Above all, expectations regarding the future characteristics of various asset classes lead to changes in those cases where the ALM study was based on historical data. But the choice of strategic portfolio is also influenced by the general attitudes of institutions towards different asset classes.

The role of the organisation

In the interview material, it is possible to distinguish certain differences between institutions that play a major role in determining the size of inflation-linked bond investments. Generally speaking, the influence of the asset management organisation seems to be the most important factor behind how large a share of inflation-linked bonds is included in the strategic portfolio. Organisations that regard active management as their strength prioritise financial instruments that are considered more liquid. This is especially clear among larger and older institutions, such as insurance companies. One of the insurance companies in the survey stated that there is a competitive situation among insurance companies that leads to a herd mentality. As a result, the companies feel that investments in inflation-linked bonds are less attractive, since no one dares to be the first.

Conversely, the more heavily influenced by analysis the organisation is – either by virtue of its own analytical activity or through hired consultants – the larger the share of inflation-linked bonds in the strategic portfolio tends to be. For this reason, newly started or recently changed institutional investors generally have a larger share of inflation-linked bonds than old organisations.

Day-to-day asset management

Asset managers with inflation-linked bonds in their strategic portfolio

Some of the employer pension funds and one of the insurance companies that were interviewed and that have inflation-linked bonds in their strategic portfolio apply a pure buy and hold strategy. They feel that inflation-linked bonds fulfil a function in their long-term portfolio, but that all attempts at tactical management are meaningless due to the poor liquidity of this financial instrument.

Other institutions are more active in their fixed-income portfolio. It is usually a matter of positions along the curve, or spreads against nominal Treasury

bonds or corporate bonds. A number of interviewees nevertheless stated that they only make minor deviations from benchmark.

Asset managers without inflation-linked bonds in their strategic portfolio

Normally, nominal fixed-income asset managers have mandates to buy inflation-linked bonds. They do so if they believe that these bonds can generate a higher return than the nominal benchmark that they are evaluated against. However, many of these managers stated that this rarely occurs, due to the limited liquidity of inflation-linked bonds. They want to be sure that they can sell assets. The margins are frequently small and the horizon short for this type of trading, often less than one year. In that case, long-term instruments like inflation-linked bonds are not suitable. In spite of this, some asset managers use inflation-linked bonds with short-term maturities for tactical trading.

Advantages and disadvantages of inflation-linked bonds

Among the *positive opinions* in the interviews, respondents often mentioned that inflation-linked bonds have good diversification characteristics, provide protection against inflation and match real-term commitments. At present, inflation-linked bonds also have a liquidity premium, which those that are not in such great need of liquidity can take advantage of. Some of the institutions interviewed for the survey stated that inflation-linked bonds have better liquidity than reputed, and that it is always possible to sell them at reasonable prices when you want. In addition, the central government is a reliable issuer.

Most of the *negative opinions* are related to the limited liquidity of inflation-linked bonds. The spontaneous comment was that the liquidity of these bonds is low, but on further reflection many of the respondents said it is still possible to sell most of them. Fear of poor liquidity applies especially to the future, since the respondents are uncertain as to their own liquidity needs and fear that the liquidity of inflation-linked bonds will have deteriorated. Market participants seem to have established a "truth" to the effect that inflation-linked bonds are poor financial instruments due to their low liquidity. This leads to a Catch 22 situation that everyone is aware of.

There also seems to be general uncertainty among investors concerning inflation-linked bonds. Many investors believe that inflation-linked bonds are an unknown product and hard to comprehend. In addition, they perceive it as an uncertainty factor that the

Riksbank (Sweden's central bank) maintains an inflation index other than the Consumer Price Index (CPI). Furthermore, there is uncertainty about the consequences of possible Swedish membership in EMU (the euro zone) on inflation-linked bonds.

Many respondents stated that the pricing of inflation-linked bonds is unclear and that there are large spreads between buy and sell prices. They said that there are too few market participants and that active asset managers stay away from these bonds. Some of them believe that the price risk of inflation-linked bonds is too high and their diversification effect is too small. Some market participants would like to see more published portfolio studies.

A majority of the larger market participants that were interviewed are dissatisfied with the Swedish National Debt Office's market maintenance and are disturbed by the lack of relations between issuer and investors. They believe that the Debt Office does not listen enough to investors and that the communication emanating from the Debt Office is sporadic and short of content.

One institution stated that it carries out monthly benchmark rebalancing, but that this is troublesome and expensive, since inflation-linked bonds have limited liquidity. One market participant also pointed out that even the inflation-linked bond index itself has recently changed, due to changes in the outstanding supply that the Debt Office helps to create.

Many respondents believe that inflation-linked bonds have a dull image and that there is heavy competition from other, more "exciting" asset classes. They feel that inflationary worries are low, due to low historic inflation, and that inflation-linked bonds have had poor returns historically speaking. Some investors have problems dealing with inflation-linked bonds in their administrative systems. A few believe that inflation-linked bonds cause certain accounting problems.

Suggestions to the Debt Office

The institutions were asked what the Debt Office might do in order to improve the functionality and efficiency of the inflation-linked bond market in Sweden. Their main suggestions can be summarised as follows:

- improve the liquidity of the market,
- undertake more market maintenance measures and persuade dealers to be more active and to better maintain the secondary market,
- broaden the investor base by attracting foreign investors and hiring foreign dealers,
- increase investor knowledge about inflation-linked bonds and their value in the strategic portfolio,

- strengthen relationships with investors by means of advisory sales and services,
- have clear issuance plans and state annual targets for issues,
- match inflation-linked loans against nominal loans.

Conclusions

The National Debt Office's survey of the inflation-linked bond market confirmed the Debt Office's earlier perception of what factors determine the investment decisions of institutional investors, but has also led to new insights. What turns out to be more important to individual financial investors' holdings of inflation-linked bonds is whether these financial instruments are included in their strategic portfolio or not. There are clear arguments in favour of treating inflation-linked bonds as a separate asset class in the strategic portfolio. If more investors treat them this way, the volume of demand will increase.

The survey shows that there is a need to disseminate greater knowledge about inflation-linked bonds and their value in the long-term portfolio, both at the Board and asset management level. To meet this need, the Debt Office should build direct relationships with asset managers, by initiating and making itself available for discussions concerning inflation-linked bonds and portfolio management and by being sensitive to the opinions of asset managers. The Debt Office, in collaboration with its dealers, should also continue secondary market maintenance efforts, for example by means of exchanges that support market liquidity, clearer issuance plans, steps to improve price transparency etc.

Another important but more long-term measure is to encourage the final customers of institutional investors – small savers – to demand more inflation-protected savings products. Today nearly all savings are nominal, even though the private individual ought to find it more interesting to achieve real-term growth in savings capital. If small savers become more aware of this, insurance companies will have an incentive to offer insurance products with inflation protection, and fund companies to offer mutual funds that have targets expressed in terms of real return.

By Sara Lindberg and Joy Sundberg

Swedish inflation-linked bonds

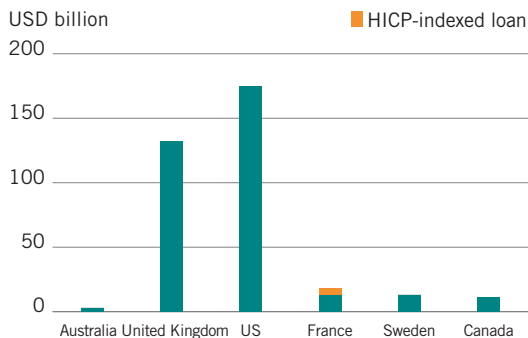
In 1994, inflation-linked bonds were introduced in Sweden. The market grew rapidly, especially in 1996 and 1997. Since then, this trend has proceeded at a slower pace. In 2002, inflation-linked bonds account for about 8 per cent of central government debt. The Swedish government has decided that the share of inflation-linked bonds in this debt portfolio should increase in the long term. The reason is mainly to spread risks, as well as to achieve cheaper borrowing in the longer term.

Inflation-linked bonds in an international perspective

The first of the major OECD countries to issue inflation-linked government bonds was the United Kingdom, which introduced them in 1981. After that, nearly 10 years passed before Canada launched its first inflation-linked loan in 1990, followed by Australia and Sweden in 1994, the United States in 1996 and finally France in 1998. During 2001, France expanded its inflation-linked borrowing by becoming the first country in Europe to introduce a loan that is linked to the euro area's harmonised index of consumer prices (HICP).

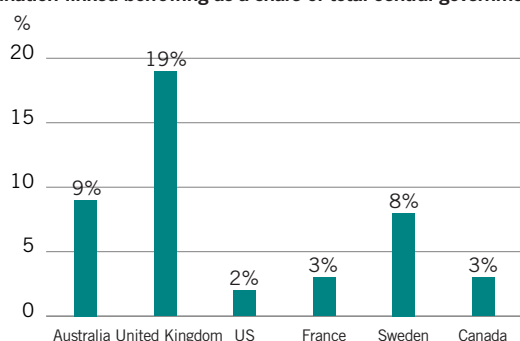
The charts below show how large the inflation-linked borrowing of each country is, both in absolute terms and as a share of total central government debt. The final chart shows international real-term interest rates.

Inflation-linked debt



Source: CDC IXIS, March 2002

Inflation-linked borrowing as a share of total central government debt



The interview survey

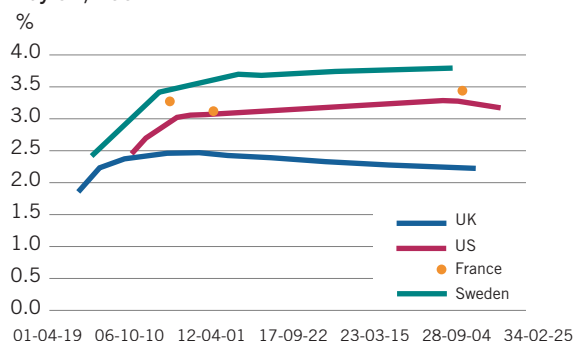
In order to create a better picture of what factors determine investment decisions, the Debt Office commissioned an interview survey. This survey included investors, dealers, investment consultants and other individuals with a good understanding of the inflation-linked bond market. A total of 29 interviews were conducted.

In the investor category, the respondents were individuals who are responsible for the management of fixed-interest assets or for the analysis that determines the composition of the strategic portfolio. The consultants who were interviewed for the survey mainly provide strategic advice to investors concerning the structure of their asset portfolio.

The interviews were conducted without any standardised interview form, since the institutions and the respondents' fields of responsibility were considered so highly varied that a standard form would not be appropriate. However, there were a number of questions/areas that were to be examined at each interview. Among these were:

- How does the commitment side of institutional balance sheet look, and in what part of the organisation are decisions made about the institution's strategic portfolio?
- Do they use asset and liability management (ALM) studies, i.e. matching between the asset and liability sides of the balance sheet to establish the strategic portfolio?
- How and by whom is such a study performed, and to what extent are its findings adjusted to more subjective judgements?
- How are inflation-linked bonds handled in day-to-day asset management?
- What other views do the institutions have about inflation-linked bonds?

International yield curves for inflation-linked bonds, on May 31, 2002



Foreign currency exchanges in the market

Starting on July 1, the Swedish National Debt Office will make currency exchanges in the market, instead of with the Riksbank. These exchanges will be carried out evenly between each month, with a degree of flexibility. Aided by forward contracts etc, the Debt Office will be able to buy foreign currency gradually in the run-up to large debt maturities and thereby limit exchange rate risks.

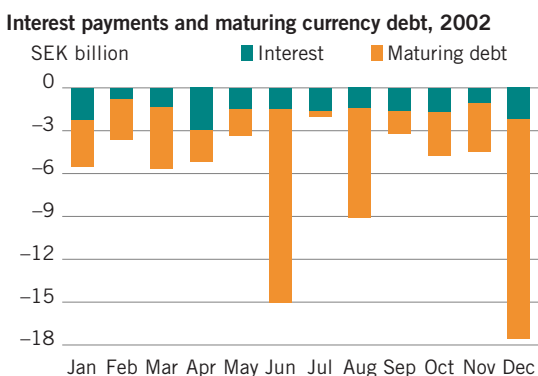
The government’s decision on the guidelines for central government debt in 2002 enables the Debt Office to exchange currencies directly in the market, instead of with the Riksbank. This article presents the main features of how the Debt Office will manage these exchanges.

The Debt Office has entered into agreements with Nordea and Postgirot bank on foreign currency accounts. These accounts will replace the accounts that the Debt Office now has at the Riksbank. Foreign currency will be bought and sold in the market via the Debt Office’s counterparties.

Uniform net exchange trajectory

The underlying payments related to borrowings, debt maturities, interest payments etc are unevenly distributed over the year. This is especially true of maturing foreign currency loans, which are concentrated to June, August and December. During 2002, overall outflows will vary between about SEK 2 billion and SEK 20 billion during individual months, which can be seen in the chart below.

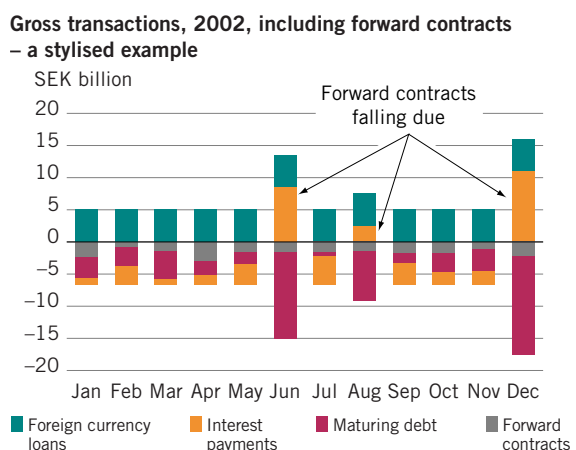
Payments in foreign currencies during 2002 are outflows in the form of interest payments in the range of SEK 20 billion and maturing debt equivalent to near-



ly SEK 60 billion. Different forms of foreign currency loans are projected to produce inflows in the range of SEK 60 billion. The loans are equal to the maturing debt during 2002, since the Debt Office at present is not amortising foreign currency debt. Hence, the net flows during 2002, i.e. the net of all in- and outflows, are equal to interest payments, which are about SEK 20 billion or more than SEK 1.6 billion per month.

Normally, it is neither proper nor possible to match a maturing loan by taking out a new loan of equal size the same day. By purchasing foreign currencies in forward contracts, the Debt Office can nevertheless smooth its foreign currency exposure on payments of maturing debt. Alternatively, the Debt Office can buy foreign currency in the spot market when maturing debt is due and at the same time sell the currency in a forward contract. With both techniques it can achieve a uniform distribution of net exchanges – i.e. the net amount of interest payments, maturing debt, loans and forward contracts – which means that the Debt Office avoids currency exposure in particular months.

The principle can be seen in the adjacent chart. In the figure, stylised and evenly distributed funding can be seen together with maturing debt and interest payments. Positive columns represent loans and maturing forward contracts (inflows) and negative ones represent payments in foreign currencies (outflows). The figure ▶



▶ illustrates, in principle, how the Debt Office deals with large amounts falling due by purchasing foreign currencies through forward contracts. During the first five months of the year, the Debt Office thus makes forward purchases of foreign currencies that fall due for payment in June (and to some extent in August), when the first large maturities of outstanding foreign currency loans take place. Maturities in December will be handled in a similar way. This implies that the Debt Office will buy foreign currency by means of forward contracts in such a way that the net exchanges each month are equal. As noted above, this is more than SEK 1.6 billion per month during 2002, which is equal to interest payments as long as the Debt Office abstains from amortising foreign currency debt. Note that the chart is only an illustrative example, since the Office will not start its exchanges until July 1.

Trade-off between flexibility and risk

According to the government's guidelines, the exchanges shall occur at a uniform pace over time, in order to decrease the risk that the exchange rate will be unfavourable on the payment date. At the same time, a degree of flexibility is required in order not to create unnecessary transaction costs. In addition, exchange rate fluctuations will influence the amounts exchanged, expressed in SEK terms. There should also be a degree of flexibility to choose if transactions should be made before or after the turn of the month, for example, so that the Debt Office is not forced to carry out transactions under unfavourable market conditions.

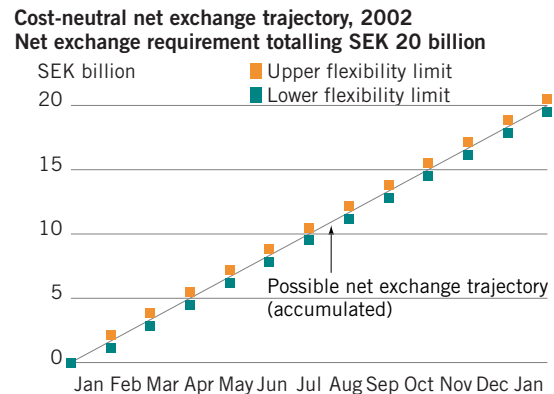
An excessively short reconciliation period and/or narrow tolerance interval would result in frequent transactions to fulfil the mandate. This would lead to high transaction costs and limit the ability of the Debt Office to take advantage of variations in market conditions. There would also be risks of unfavourable pricing, due to counterparts being aware in advance of the Debt Office's transaction needs.

Net exchanges arise from relatively large-scale gross flows. A reasonable degree of flexibility is provided by a permitted deviation interval of SEK ± 500 M from an accumulated net exchange trajectory with monthly reconciliation. This cost-neutral corridor will serve as a guide for the Debt Office's currency exchanges.

The chart illustrates a theoretical net exchange trajectory (the solid line) based on estimated transactions during 2002 together with a permitted interval of SEK ± 500 M.

The cost-neutral exchange trajectory defined this

way should limit the uncertainty about the Debt Office's presence in the foreign exchange market and satisfy reasonable demands for predictability and transparency. Predictability thus does not imply that the market will be aware in advance of individual transactions, but it will be aware of the scale of the Debt Office's net exchanges each month.



Change in pace of amortisation will have a direct impact

The Debt Office's net exchanges each month depend, among other things, on the scale of maturing debt, interest payments, the exchange rate of the krona and the pace of foreign currency loan amortisation. Decisions on such matters as an increase in the pace of amortisation will affect net currency exchanges, since the need for refinancing foreign currency loans will decrease.

The Board of the Debt Office makes decisions on changes in the pace of debt amortisation. Now that the Debt Office will gain full control of its own currency exchanges, a change in the pace of amortisation will have an immediate impact on the pace of currency exchanges.

Market information

Source: The Swedish National Debt Office, unless otherwise stated.

Swedish government debt

Treasury bonds, outstanding volumes, May 31, 2002

Nominal bonds			Nominal amount
Maturity date	Coupon %	Loan no.	SEK M
2004-01-15	5.00	1042	63,085
2005-02-09	6.00	1035	61,929
2006-04-20	3.5	1044	61,026
2007-08-15	8.00	1037	51,937
2008-05-05	6.50	1040	53,116
2009-01-28	5.00	1043	49,593
2011-03-15	5.25	1045	45,006
2012-10-08	5.5	1046	31,991
2014-05-05	6.75	1041	46,211
Total benchmarks			463,894
Non-benchmarks			18,150

Inflation-linked bonds

Maturity date	Coupon %	Loan no.	SEK M
2004-04-01	0	3002	5,657
2008-12-01	4	3101	31,835
2014-04-01	0	3001	11,223
2015-12-01	3.5	3105	26,558
2020-12-01	4	3102	12,171
2028-12-01	3.5	3103	0,003
2028-12-01	3.5	3104	15,159
Total inflation-linked bonds			102,606
Total Treasury bonds			584,650

Treasury bills, outstanding volumes, May 31, 2002

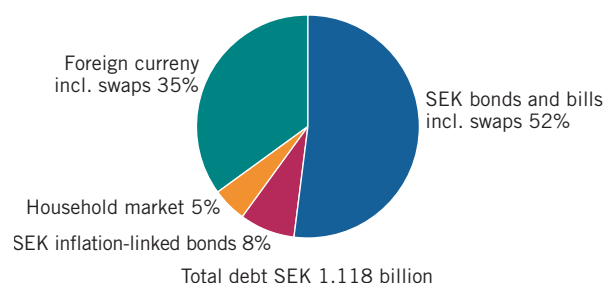
Maturity date	Outstanding volume	
	Nominal	Amount
	SEK M	
2002-06-19		59,211
2002-07-17		24,997
2002-08-21		22,499
2002-09-18		46,583
2002-12-18		53,601
2003-03-19		33,604
2003-06-18		16,106
2003-09-17		14,476
Total		271,077

Rating

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

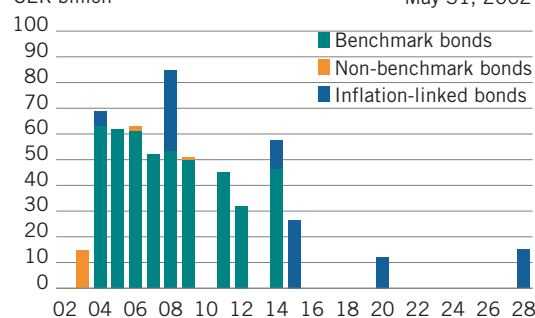
Debt structure

May 31, 2002

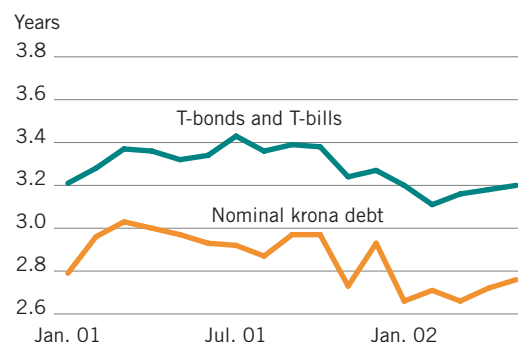


Maturity profile, SEK nominal and inflation-linked bonds

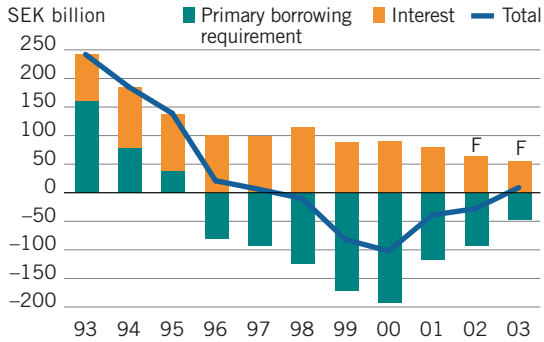
SEK billion May 31, 2002



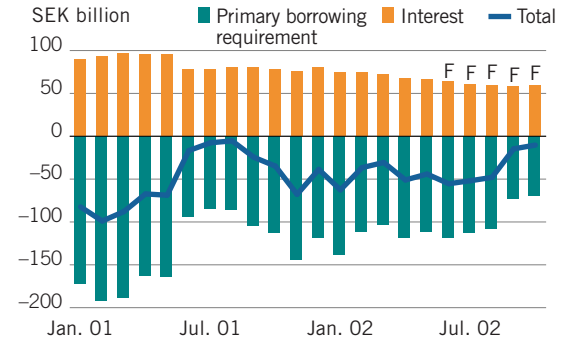
Duration of nominal debt



Central government borrowing requirement, 1993–2003

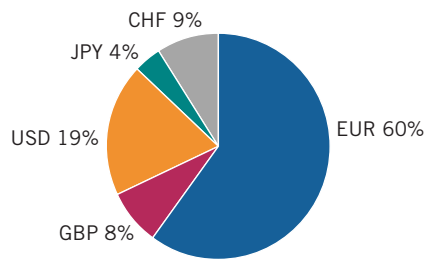


Swedish government borrowing requirement, 12 months



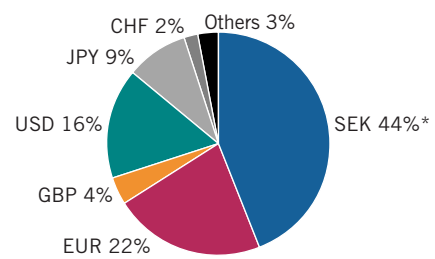
Foreign currency, benchmark

May 31, 2002



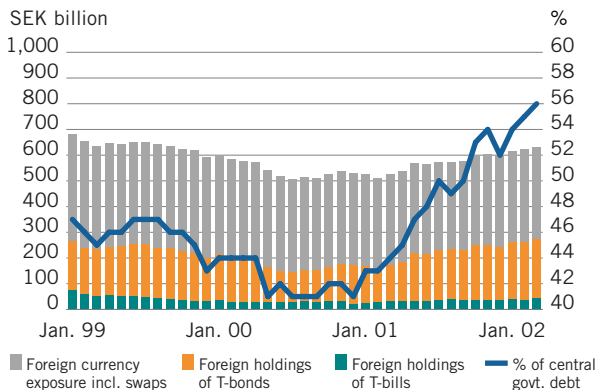
Funding in foreign currencies

May 31, 2002



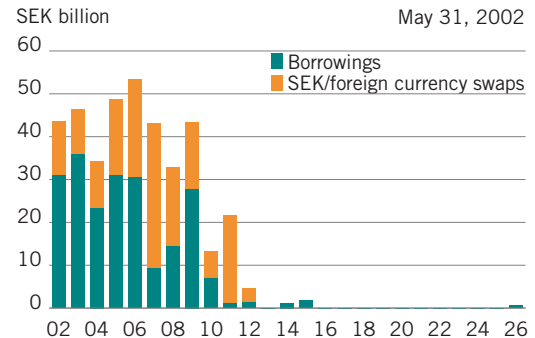
*SEK/foreign currency swaps

Central government foreign debt



Source: The Riksbank

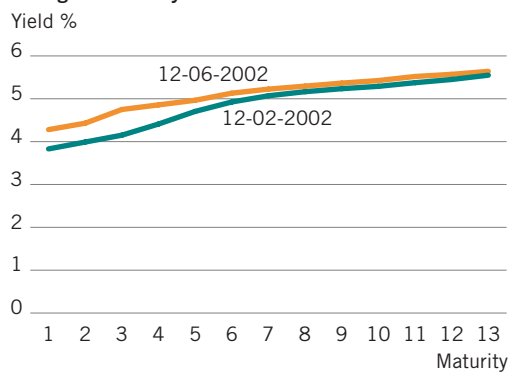
Maturity profile, foreign currency loans excl. callable bonds



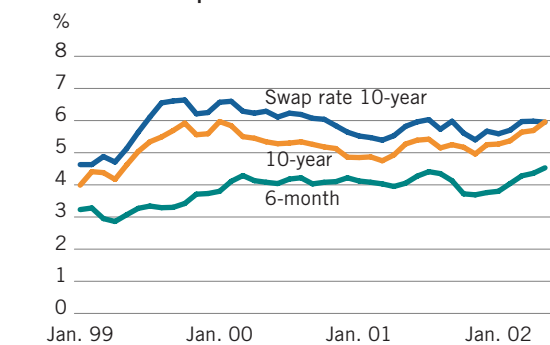
Financial markets

All values up to May 31, 2002

Swedish government yield curve

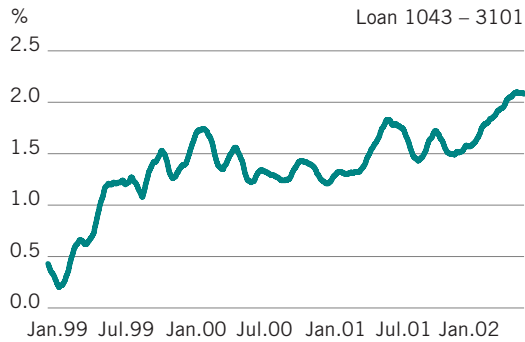


Interest rate developments



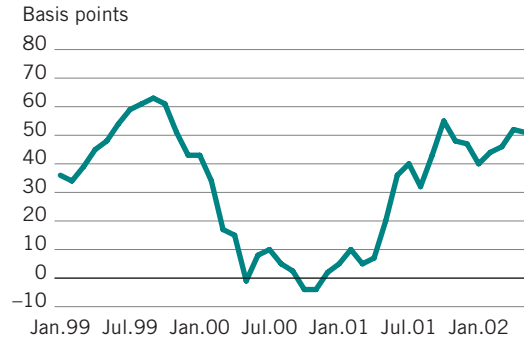
Source: Ecowin

Break-even inflation



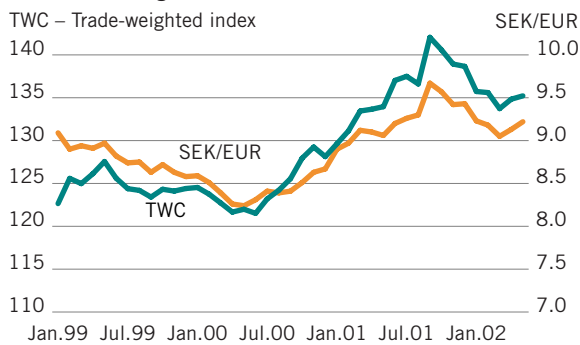
Source: Ecwin

Interest rate spread vs Germany – 10-year



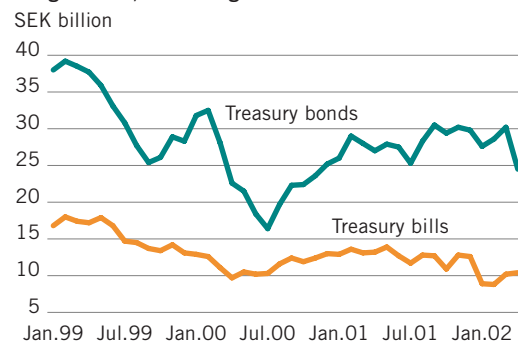
Source: Ecwin

Historical exchange rates



Source: Ecwin

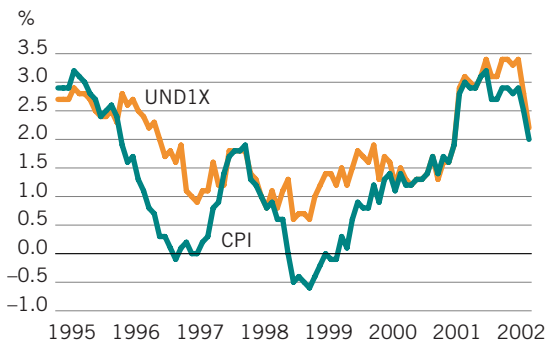
Trading volume, Swedish government securities



Source: The Riksbank

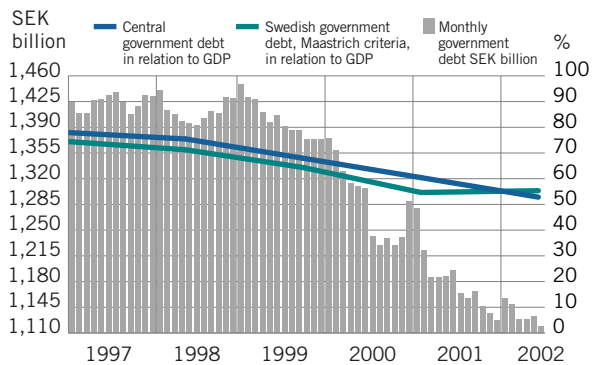
Swedish economy

Inflation indexes: UND1X and CPI in Sweden



Source: Statistics Sweden

Government debt, 1997–2002



Source: Debt Office, National Institute of Economic Research

National accounts

Percentage change		2000	2001	2002	2003	
Supply and demand						
Gross domestic product ¹		3.6	1.2	1.3	2.7	
Imports		11.5	-3.9	1.7	9.3	
Household consumption expenditure		4.6	0.2	2.2	3.0	
Government consumption expenditure		-0.9	1.4	0.8	0.3	
Gross fixed capital formation		5.0	1.5	1.8	4.6	
Stock building		0.5	-0.5	-0.2	0.3	
Exports		10.3	-1.4	1.2	7.8	
Selected statistics	Mar-02	Apr-02	2000	2001	2002	2003
CPI, year-on-year		2.0	1.3	2.6	2.1	2.1
Unemployment rate		3.4	4.7	4.0	4.3	4.1
Current account	3.6		3.3	2.8	2.8	2.5

¹ SEK 2,098 billion (current prices 2000).

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

Dealers

Dealers	Telephone	Reuter page
ABN Amro Bank NV	+46-8-506 155 00	PMAA
Consensus – Den Danske Bank A/S	+46-8-568 808 44	PMCO
S E B	+46-8-506 23 151	PMSE
Svenska Handelsbanken	+46-8-463 46 50	PMHD
Swedbank (Föreningsparbanken)	+46-8-700 99 00	PMBF
Nordea	+45-33-33 17 58	PMUB
E Öhman J:or Fondkommission AB	+45-8-679 22 00	PMOR

The next issue of *Central Government Borrowing: Forecast and Analysis* will be published on Wednesday, October 30, 2002, 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