RIKSGÄLDEN
SWEDISH NATIONAL DEBT OFFICE

CENTRAL GOVERNMENT BORROWING

FORECAST AND ANALYSIS

2006:3

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LARGE SURPLUS FOR 2007

In this report, the Debt Office estimates that there will be a budget surplus of SEK 11 billion. In the previous forecast, we expected that there would be a deficit of SEK 5 billion. Central government finances are accordingly developing more positively than we previously expected.

This favourable development is expected to continue. We now estimate that net payments to the state during 2007 will be SEK 24 billion greater than we expected in June. Furthermore, the new government is planning to sell state-owned companies. The figure of SEK 50 billion per year for 2007 and onwards is stated in the Budget Bill. As no concrete decisions have been made, the total amount and the allocation between years are still uncertain. We have decided to work on the basis of the Government's assessment and have therefore included sales income of SEK 50 billion in the forecast for 2007. Altogether, this means that we estimate that there will be a budget surplus of SEK 82 billion next year.

A surplus of this size puts the Debt Office in a new but not unknown situation. The state had surpluses of this size in 1999 and 2000. One difference is that the central government debt is less to start with this time. However, it remains sufficiently large that we can maintain effective markets for our instruments, with the aid of balanced borrowing that promotes liquidity. Concretely, we expect to issue nominal bonds from the turn of the year for SEK 2.5 billion per auction and then go down to SEK 2 billion from September. Inflation-linked borrowing will continue at an approximately unchanged pace.

Sales of state-owned companies can lead to large inflows in a short period. However, as the Debt Office has stated previously, we have means of handling these without additional expense for the state or major effects on the markets. The control system for the composition and maturities of the debt provides us with sufficient flexibility to be able to deal with the borrowing without abrupt changes.

The funding plan that we are now presenting is based on the Government's decisions on guidelines for central government debt management in 2007. The decision is based in the usual way on a proposal from the Debt Office. In addition to faster amortisation of the foreign currency debt than previously, the most important new development is that the Government has established an integrated control system for the composition and maturity of central government debt. Our proposal and the Government's decision are summarised in an article in this report.

The Debt Office has recently signed a new framework agreement with three commercial banks. The new agreement enables agencies to reduce the costs of their payments by almost 30 per cent, equivalent to SEK 50 million per year. The framework agreement, which is an important part of our work to increases the efficiency of the central government payment system, is also presented in an article.

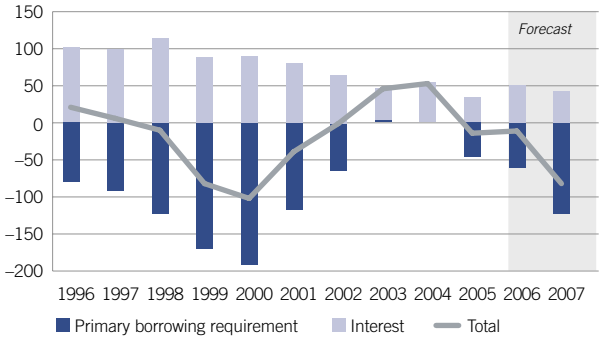
Bo Lundgren
Director General
The Swedish National Debt Office

CENTRAL GOVERNMENT BORROWING REQUIREMENT

Central government finances have continued to develop strongly since our previous forecast. For 2006 we calculate a borrowing requirement of SEK –11 billion, i.e. a budget surplus. This is a strengthening of SEK 16 billion compared with the June forecast. Next year, we calculate a borrowing requirement of SEK –82 billion. This sharp improvement is mainly due to expected divestments income and a continued high level of economic activity. Central government debt is expected to amount to SEK 1,266 billion at the end of 2006 and SEK 1,184 billion at the end of 2007.

Figure 1. CENTRAL GOVERNMENT BORROWING REQUIREMENT, 1996–2007

SEK billion



ANNUAL FORECAST FOR 2006

We expect a borrowing requirement of SEK –11 billion in 2006 (i.e. a budget surplus). This is a strengthening of central government finances of SEK 16 billion compared with the previous forecast. The largest part of this improvement is explained by the Debt Office's net lending to agencies and state-owned companies being lower than expected while tax income has been higher.

Table 1. CENTRAL GOVERNMENT BORROWING REQUIREMENT AND CENTRAL GOVERNMENT DEBT, 2005-2007, SEK BILLION

	2005	Forecast 2006	Forecast 2007
Primary borrowing requirement	–47	–61	–124
Interest payments on debt	33	50	42
Net borrowing requirement	–14	–11	–82
Debt adjustments	43	–12	0
Re-evaluation, foreign currency loans etc.	29	–15	0
Short-term investments	22	–20	0
Change in central government debt	51	–43	–82
Debt at year-end	1,309	1,266	1,184

The primary borrowing requirement

We are revising downwards the primary borrowing requirement (all state payments excluding interest on central government debt) from SEK –45 to –61 billion compared with the June forecast. See Table 2.

Table 2. PRIMARY BORROWING REQUIREMENT 2006, CHANGE FROM PREVIOUS FORECAST, SEK BILLION [1]

Net lending	–7
Taxes, net	–6
Local government funds	–3
Customs Authority	–2
Other	2
Total	–16

[1] *The amounts state the effect on the borrowing requirement. Thus, for instance, "Taxes –6" means that revenue is expected to be higher.*

The monthly outcomes for the central government borrowing requirement have been slightly stronger than expected since June and we expect this positive development to be maintained for the remaining months of the year. The buoyant state of the economy has led to a sharp increase in private consumption, which has been reflected in larger in-payments of value-added tax. Large dividend payments together with increasing interest income have resulted in household preliminary taxes on income being larger than we estimated. In addition, increased imports have led to an increase in income from customs duty and VAT on imports.

The Debt Office's net lending to central government agencies, public enterprises and state-owned companies is estimated at SEK 28 billion, which is SEK 7 billion less than in the preceding forecast. This relatively large adjustment is due to a number of agencies, including the Deposit Guarantee Board and the Export Credits Guarantee Board (EKN) deciding to increase their deposits and amortise their loans. At the same time, new lending has been somewhat lower than expected.

Net lending will be affected by SEK 25 billion in 2006 since payment of pension entitlements from the Premium Pension Agency for 2005 have been brought forward from January 2007 to December 2006. See our previous report from June for further information.

Interest payments on the central government debt

Interest payments are expected to be SEK 50 billion, which is unchanged compared with the previous forecast.

FACTS

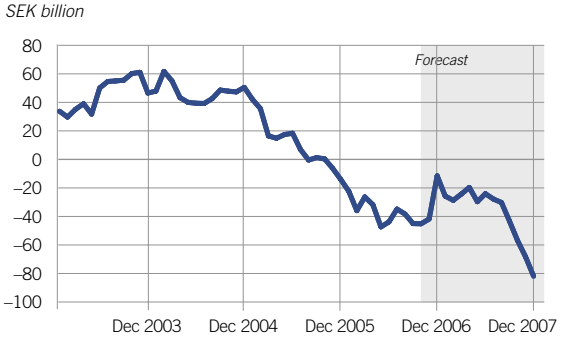
THE DEVELOPMENT OF THE BORROWING REQUIREMENT 2003 – 2007

In just over a year, from the beginning of 2005 to the beginning of 2006, a shift took place in the net borrowing requirement as a rolling 12-month figure of around SEK –90 billion. See Figure 2. During 2003 and 2004, the borrowing requirement was around SEK 50 billion (a budget deficit). In the major part of 2006, the 12-month figure has been around SEK –40 billion (a budget surplus).

This rapid change is mainly due to increased tax income, in particular taxes on capital, which we underestimated in our forecasts during 2005. In 2006, the borrowing requirement has continued to be lower than we expected although not to the same extent as last year. Our discrepancy on the tax forecast for February to October 2006 is approximately SEK –8 billion. In addition, dividend payments from state-owned shares have been larger and the net lending of the Debt Office smaller.

The expected increase in the 12-month figure in December 2006 is due to payment of premium pension funds of approximately SEK 25 billion being moved from January 2007 and that interest payments will increase compared with last year. We expect the 12-month figure to be around SEK –25 billion during the first half of 2007, i.e. a small increase compared with 2006. Subsequently, the twelve-month figure is expected to decrease to SEK –82 billion at the end of 2007, which is due to income from sale of state assets.

Figure 2. NET BORROWING REQUIREMENT 2003-2007, 12-MONTH FIGURE



The diagram shows the development of the central government net borrowing requirement as a rolling 12-month figure from 2003 to 2007. The outcomes are available until October 2006, after which our forecast is shown.

ANNUAL FORECAST FOR 2007

Our new forecast for 2007 is a borrowing requirement of SEK –82 billion. The sharp improvement from the June forecast is largely due to our including the sales income of SEK 50 billion announced by the government in the Budget Bill. There is however considerable uncertainty attached to the forecast of sales income. However, even without this income, the borrowing requirement is improved compared with the previous forecast, not least due to a very buoyant state of the economy leading to increased tax income.

The primary borrowing requirement

The primary borrowing requirement (all payments excluding interest on central government debt) is expected to be SEK –124 billion. Compared with the June forecast, this is an improvement of SEK 78 billion. The most important explanation is that we did not include any sales income in June.

The Budget Bill for 2007 contains a large number of changes in taxes. Most of these entail reduced tax income. The largest single tax reduction is a tax cut on income from employment introduced from 1 January 2007 (the. "job tax deduction"). This means that everybody with income from employment will have lower average tax. The reduction of tax on employment is partly set off by the abolition of the tax deductions for trade union and unemployment fund charges and a reduction in the deductions for travel and other expenses. In addition, excise taxes are being increased on tobacco products and a benefit tax introduced on home PCs.

The Budget Bill also contains proposals on reductions in property and wealth taxes. However, these proposals are expected to have very little effect in cash terms in 2007, but

Table 3. PRIMARY BORROWING REQUIREMENT 2007 CHANGE FROM PREVIOUS FORECAST, SEK BILLION [1]

Sales	–50
Increased contribution in unemployment benefit	–9
Net taxes	9
Transfers	–7
Dividend on state-owned shares	–5
Payment from Venantius AB	–5
Local government funds	–4
Net lending	–4
Other	–4
Total	–78

[1] *The amounts state the effect on the borrowing requirement. Thus, for instance, "Sales income –50" means that revenue is expected to be higher.*

will mainly affect the borrowing requirement for 2008 and onwards since the largest part of these taxes are paid in with a one-year time lag as supplementary tax or tax arrears.

Altogether, we estimate that the proposals in the Budget Bill will lead to a reduction in tax revenue of almost SEK 30 billion in 2007. Despite the extensive tax cuts, the forecast for taxes is only being reduced by SEK 9 billion. This is due to tax revenue being affected positively by the strength of the economy. The development of company profits is expected to be maintained, which will lead to high tax payments from companies next year as well. Household tax on capital income, interest income and dividends are also increasing compared with our last forecast. At the same time, the reduced taxes on salaries will lead to an increase in household disposable income. This will lead to increases in consumption which is already at a high level. VAT income will therefore increase rather more than we expected in June.

In order to finance the tax cuts, the government has proposed a number of savings. The contributions paid for unemployment benefit insurance will be increased next year. We estimate that this will increase central government income by SEK 9 billion.

The Government is also proposing savings within the transfer systems. In particular, this concerns reductions in activity and sickness compensation and activity support and unemployment benefit. We therefore calculate that central government expenditure for transfers will be SEK 7 billion lower in 2007 than before.

Dividends on the state's shares are increasing by SEK 5 billion compared with the previous forecast. This increase is primarily explained by an expected increase in TeliaSonera's dividend for 2006.

Furthermore, the Government has been authorised to take over responsibility as debtor for Venantius AB:s bond loan and the company's outstanding undertaking in the derivative market. This undertaking amounts to around SEK 4.5 billion and will be compensated for by payment of an equivalent amount from Venantius. This takeover will not affect the central government debt since it increases at the time of takeover but then decreases by the same amount due to the payment from Venantius. However, the borrowing requirement will decrease by around SEK 4.5 billion since the payment from Venantius will be reported under the income heading in the state budget.

FACTS

SALES OF STATE ASSETS

The Government has announced that it intends to sell state assets for SEK 50 billion per year from 2007 to 2009. This will in this case reduce the net borrowing requirement and the central government debt by a corresponding amount.

From the point of view of the activity of the Debt Office, it makes no difference which companies are sold. For us, the difficulty lies in dealing with the uncertainty of the size of the sales income and the time at which sales are expected to take place. The shorter the planning horizon is, the more difficult it will be to plan the management of central government debt (see more in the section on funding page 8).

One can naturally speculate as to what companies will be sold first and at what amounts. However, the Debt Office has no additional information than what is public about the sales process. Our assessment is therefore as uncertain as anybody else's.

As regards the *size of the amount*, we do not believe that we can make a better estimate than the government can. We have therefore assumed SEK 50 billion in sales income during 2007. This differs from how we have previously dealt with the Government's forecast of sales income. For a number of years, the former government had included an assumed technical calculation of SEK 15 billion per year in its budget for sales income. This was seldom realised and sales income was instead often close to zero. We therefore did not include any sales income in our forecasts. The difference now is that the Government is very clear about its ambition to sell central government assets and on a large scale.

As regards *the time when* the money is paid to the treasury, we believe that this is more likely to happen during the second half of the year than the first, for the simple reason that the sales process can take time. We have therefore allocated the assumed sales income of SEK 50 billion from September to December 2007. We hope that this allocation will lead to the effects on the loan plan being as small as possible since we will very probably in any case have to revise our funding plan as more information becomes available.

The Debt Office's net lending to central government agencies, public enterprises and state-owned companies is estimated at SEK 11 billion. This is SEK 4 billion lower than in the former forecast. This is primarily an adaptation to the agencies borrowing considerably less than budgeted for in recent years.

Interest payments on the central government debt

Interest payments are expected to be around SEK 42 billion. This is SEK 4 billion higher than our previous forecast. This is explained by higher interest rates in Swedish kronor and higher exchange losses in foreign currency. The lower borrowing requirement in 2007 compared with the previous forecast will not have time to affect interest payments to any greater extent since we have assumed that payments for sales of state assets will take place towards the end of the year.

FACTS

CONDITIONS UNDERLYING THE FORECAST

The forecast is based on the expenditure frameworks and tax rules for central government finances in the budget and spring fiscal policy bills.

In the areas where the forecast for the borrowing requirement requires macroeconomic assessments, the Debt Office bases itself on the National Institute of Economic Research's (NIER) macro scenario. In this forecast, we are using the macro scenario presented by NIER in August 2006.

The level of economic activity continues to be high. NIER estimates a GDP growth of 4.1 per cent this year and 3.3 per cent in 2007. There is now a clear improvement in the labour market and the number of new vacancies is increasing rapidly. Combined with an increase in the rate of wage increase, the improved employment is expected to lead to an increase in the wages bill of over 5 per cent both this year and next year. Household consumption is also expected to continue to increase rapidly, at the same time as investments will remain at a high level.

The Debt Office's forecast for interest payments on central government debt is based on the interest rates and exchange rates current at the time of the forecast. The stop date for the current forecast was 31 October 2006. We have also weighed in the outcome for the borrowing requirement until the end of October.

COMPARISONS

Central government financial net lending compared with the budget balance

According to our estimates, the budget balance will amount to SEK 82 billion in 2007. The financial net lending is only expected to total SEK 22 billion, however. This gap is mainly due to the income of SEK 50 billion, expected from the sale of state assets not affecting the financial net lending. Sales income means that shares will be converted into cash which does not have any effect on the state's wealth.

The financial net lending will none the less gradually improve during the period. The exception is 2006, when it will deteriorate slightly compared with 2005, mainly due to accrual effects.

Table 4. CENTRAL GOVERNMENT NET FINANCIAL LENDING, 2003-2007, SEK BILLION

	2003	2004	2005	Forecast 2006	Forecast 2007
Budget balance	–47	–51	14	11	82
Adjustment items	2	38	–4	–11	–60
Sale of limited companies	0	0	–7	0	–50
Transfer from National Insurance (AP) Fund	–13	–4	–2	0	0
Lending, net repayment	10	15	6	–4	4
Capital and currency losses	8	19	–3	12	5
Accruals, other	–3	8	1	–19	–18
Net financial lending	–45	–12	10	0	22

Comparisons with other forecasts of the borrowing requirement

The Debt Office's new forecast indicates a borrowing requirement of SEK –11 billion this year and a borrowing requirement of SEK –82 billion in 2007. We are thus expecting a lower borrowing requirement both in 2006 and 2007 compared with other forecasters.

Compared with the forecasts from NIER and the National Financial Management Authority (ESV), these

Table 5. COMPARISON BETWEEN BORROWING REQUIREMENT FORECASTS, SEK BILLION

	Debt Office		Government		NIER		ESV	
	06	07	06	07	06	07	06	07
Primary borrowing requirement	–61	–124	–43	–106	–45	–58	–54	–51
Interest on central government debt	50	42	51	43	51	46	51	46
Borrowing requirement	–11	–82	9	–63	6	–12	–3	–4
Borrowing requirement adjusted for interest payments and sales income*	–11	–82	8	–64	5	–66	–4	–58

** Other central government agencies' forecasts but with the Debt Office's forecast on sales income and interest payments on central government debt.*

forecasts have not been able to take into consideration the proposals in the Budget Bill for 2007. Additional sales income of SEK 50 billion for 2007 is included in the Debt Office's and the Government's forecasts. However, even adjusting for the sales income, we calculate a considerably lower borrowing requirement than other forecasters. This is shown on the final line of Table 5, where we make comparisons adjusted for differences in sales income and interest payments.

MONTHLY FORECASTS

The Debt Office publishes monthly forecasts three times a year. Between regular forecasts, the Debt Office only makes revisions of the annual and monthly forecasts in exceptional cases. The revised forecast is then presented at the same time as the announcement of the outcome of the monthly borrowing requirement five working days after the end of each month.

The forecast for the borrowing requirement in November 2006 is SEK –3.8 billion. This is unchanged compared with the previous forecast. The high borrowing requirement in December can be attributed to large payments for excess tax and the extra payment by the Premium Pension Agency. In February, large amounts of tax are paid in, which results in a surplus for this month and the large surplus in May can be explained by expected dividends from state-owned companies.

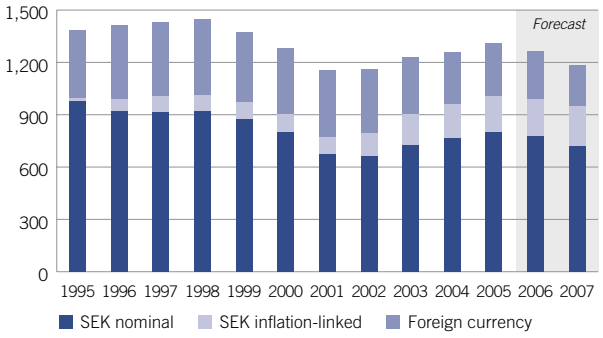
Table 6. CENTRAL GOVERNMENT BORROWING REQUIREMENT BY MONTH 2006–2007, SEK BILLION

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Primary borrowing requirement	–4.5	33.5	–1.0	–34.2	–10.4	–12.4	–43.1	4.2
Interest on central government debt	0.7	14.4	4.2	1.6	5.8	–0.4	6.1	2.5
Borrowing requirem.	–3.8	47.9	3.2	–32.6	–4.7	–12.8	–37.0	6.7

CENTRAL GOVERNMENT DEBT

At the end of October 2006, central government debt was SEK 1,222 billion. This is a reduction since 1 January of SEK 87 billion.

Figure 3. CENTRAL GOVERNMENT DEBT DEVELOPMENT 1995-2007
SEK billion



The negative borrowing requirement has reduced the central government debt by SEK 55 billion since 1 January. In addition, central government debt has decreased by SEK 32 billion due to reduced short-term investments and debt dispositions. A debt-related disposition affects government debt without affecting the borrowing requirement. An example is the revaluation of the foreign currency debt at current exchange rates, which takes place continuously in the reporting of central government debt.

The Debt Office does not weigh in expected debt-related dispositions in the forecast of the development of central government debt. The borrowing requirement is expected to amount to SEK 44 billion up to the turn of the year. This means that central government debt is expected to increase to SEK 1,266 billion by the end of 2006. At the end of 2007, central government debt is estimated at SEK 1,184 billion. This is equivalent to 45 and 40 per cent of GDP respectively.

FACTS

SENSITIVITY ANALYSIS

All forecasts include elements of uncertainty. The Debt Office does not produce any overall uncertainty analysis for the borrowing requirement. Instead, we present a partial analysis of the impact on the borrowing requirement 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

Increase by one per cent/percentage point	Effect on borrowing requirement
Wages bill [1]	–6
Household consumption, current prices	–2
Registered unemployment	4
Interest rates in Sweden	4
International interest rates	1
Exchange rate	0.5

[1] *Local taxes from employment are disbursed to local government with a one-year time lag. As a result, the effect on the central government borrowing requirement in a one-year time perspective – the time horizon in the table – is greater than the permanent effect.*

FUNDING

The issue volume of nominal government bonds will be reduced to SEK 2.5 billion per auction from the turn of the year. A further reduction to SEK 2 billion is planned in September 2007. As far as we are able to judge at present, this issue volume can be maintained in 2008 as well. Borrowing in inflation-linked bonds will continue at an annual rate of SEK 5-10 billion. The Debt Office will amortise the foreign currency debt at an annual amortisation pace of SEK 40 billion. Foreign currency borrowing is estimated at SEK 14 billion in 2007.

This funding forecast entails a number of changes compared with the June forecast. As we now expect a relatively large budget surplus, borrowing will decrease in most instruments. Despite this, we expect to be able to maintain our normal borrowing policy and continue to be able to contribute to liquidity in the markets for government securities.

The Government has set the benchmark for amortisation of the foreign currency debt at an annual pace of SEK 40 billion, which means a decrease in foreign currency borrowing. A maturity target has also been set for the whole debt, which means that the inflation-linked debt now has a target for the development of maturity. According to the Government's guidelines, 25 per cent of the central government debt shall consist of inflation-linked debt.[1]

The forecast for the net borrowing requirement depends to a great extent on income from sale of state assets, which is uncertain both in terms of size and time. Forecast deviations can therefore arise which have consequences for, for instance, the proportion of inflation-linked debt and the maturity of the nominal krona debt. The deviation intervals around the Government's and the board's benchmarks are set in order to enable us to achieve the flexibility required for borrowing to be predictable and without requiring adjustments in the form of expensive transactions. Our starting point and ambition is that any forecast deviations that occur should not entail sharp changes in borrowing, neither in our loan policy nor in our bond borrowing.

THE FUNDING REQUIREMENT

The net borrowing requirement is estimated at SEK –11 and –82 billion respectively for 2006 and 2007. Compared with the forecast from June, the net borrowing requirement is decreasing by SEK 74 billion during 2007. The most important explanation is that the Government has announced that it plans to sell state assets with a value of SEK 50 billion.

[1] *The guidelines for how the central government debt is to be allocated between different kinds of debt are stated in terms of all future cash flows (nominal debt plus coupons and expected inflation compensation). This can also be expressed as the market value of the debt calculated with zero interest rates and expected inflation compensation. We refer to this measure as the aggregate central government debt cash flows. See also the Government's* Guidelines for central government debt management 2007 *and the* Debt Office's Proposed guidelines for 2007.

In addition to the net borrowing requirement, the Debt Office also needs to finance maturing loans. Altogether, funding in bonds and T-bills (government securities) is expected to total SEK -22 billion in 2007. This is a reduction of SEK 46 billion compared with 2006 and reflects the reduced net borrowing requirement together with some reduction in maturing foreign currency loans.

Table 1. FUNDING 2005–2007, SEK BILLION

	2005	2006	2007
Net borrowing requirement	–14	–11	–82
Change in cash equivalent holdings and retail market borrowing [1]	29	–33	4
Maturing bonds and buybacks [2]	56	68	55
Government bonds	16	34	43
Foreign currency bonds	40	34	12
Total	66	24	–22
T-bill borrowing, net [3]	–27	–67	–90
Bond borrowing, gross [4]	93	91	68
Foreign currency bonds	25	20	7
Inflation-linked bonds [5]	12	7	7
Nominal government bonds [6]	56	64	54
Funding in government securities	66	24	–22

1 *Change in outstanding deposits, liquidity bills and repos. Retail market borrowing is assumed to be unchanged in 2006 and 2007.*
2 *No buybacks are planned in 2006 and 2007 except in connection with exchanges.*
3 *Net of issues (excluding exchanges) and maturities.*
4 *Nominal amounts. Premiums and discounts (including inflation compensation) and exchange rate differences are included in interest rate payments in the net borrowing requirement.*

	2005	2006	2007
5 *Issue volume per auction, average.*	*0.6*	*0.3*	*0.4*
6 *Issue volume per auction, average.*	*2.4*	*2.8*	*2.3*

Table 1 shows an assessment of the allocation of funding between bonds and T-bills as well as the allocation of bond borrowing among nominal government bonds, inflation-linked bonds and foreign currency bonds.

NOMINAL KRONA BORROWING

Nominal government bonds

Issue volume reduced to SEK 2.5 billion

The issue volume in government bonds will be reduced from SEK 3 to SEK 2.5 billion from the auction on 10 January 2007. This is in light of the decreased borrowing

Table 2. IMPORTANT DATES 2006 AND 2007

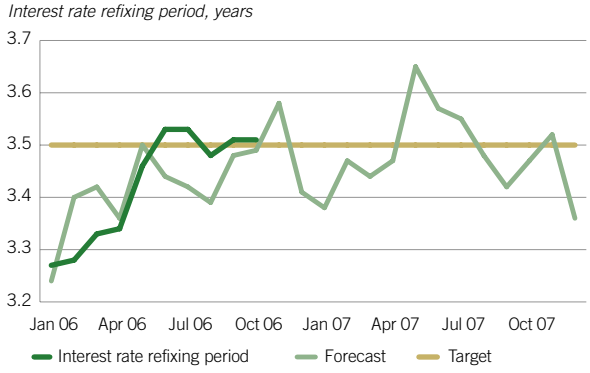
Date	Time	Activity
8 December		Board decisions on benchmarks and funding policy for 2007
14 December	11.00	Exchange of 3101 for 3106
1 February	11.00	Exchange of 3101 for 3106
28 February	09.30	*Central Government Borrowing – Forecast and Analysis 2007:1*
1 March	11.00	Final exchange of 3001
29 March	11.00	Exchange of 3101 for 3106
12 April	09.30	Press release on exchange of loan 1040
7-10 May	16.30	Exchanges of loan 1040 for T-bills
24 May	11.00	Exchange of 3101 for 3106
20 June	09.30	*Central Government Borrowing – Forecast and Analysis 2007:2*
23 August	11.00	Final exchange of 3101 for 3106
24 October	09.30	*Central Government Borrowing – Forecast and Analysis 2007:3*

requirement next year. We expect that a further reduction in the issue will subsequently be required to SEK 2 billion per auction from 12 September 2007. Our borrowing forecast does not extend beyond the end of next year but a preliminary assessment, based on an unchanged budget surplus, indicates that it should be possible to retain this issue volume in 2008 as well.

Our forecast for the interest rate refixing period is shown in Figure 1. The interest rate refixing period is calculated at 3.5 years on average during 2007. Since the maturity is at present well in line with the target, adjustments measures are not required.

As shown in Table 3, the reduced bond borrowing entails that the outstanding volume of nominal government bonds will decrease in 2007 compared with this year.[2] The table also presents the exposure in bond rates, taking into consideration planned swaps. Swaps are discussed in more detail in the section on T-bills and currency borrowing.

Figure 1. FORECAST AND OUTCOME FOR THE DURATION AND INTEREST RATE REFIXING PERIOD OF THE NOMINAL KRONA DEBT 2004–2007



The target for the interest rate refixing period in the nominal krona debt is 3.5 ± 0.3 years. The monthly outcome is published on the fifth bank day of each month in the press release on the central government borrowing requirement.

Table 3. CHANGE IN OUTSTANDING GOVERNMENT BONDS, NET INCLUDING SWAPS, SEK BILLION

	2005	2006	2007
Nominal government bonds, issues	56	64	54
Maturities, buybacks and exchanges	–75	–80	–84
Change in nominal government bond stock	–19	–16	–31
Swaps, net	–27	–11	13
Nominal government bonds and swaps, net change	–46	–28	–17

New ten-year bond planned for December 2007

To maintain liquidity in our benchmark loans and to avoid the bond stock being spread over too many loans, we have calculated in our forecast on the next ten-year bond, loan 1052, not being introduced until the beginning of December 2007. This loan will then become a ten-year reference loan on the third Wednesday of March 2008. No new bond loan will be introduced before at the earliest 2010 since the outstanding loan 1047 will be a new ten-year reference loan in 2009.

We expect to be able to continue to issue in reference loans with two, five and ten-year maturities which are traded in the electronic interbank market.[3] In 2007, approximately half of the issue will be made in the ten-year segment. We expect to make a few occasional issues in the two and fourteen-year maturities and the remainder in the five-year segment.[4]

Table 4. REFERENCE LOANS IN THE ELECTRONIC INTERBANK MARKET*

Date for exchanges of reference loans (IMM date)	2-year	5-year	10-year
Today	1043	1045	1050
20 December 2006		1046	1051
21 March 2007			
20 June 2007	1048		
19 December 2007			

**The above dates for change of reference loans refer to the settlement date. The first transaction date for a new reference loan is normally the Friday before the IMM date.*

[2] *Information about outstanding stocks in the different types of debt is published in the Debt Office's monthly report* The Swedish Central Government Debt.

[3] *The choice of reference loans in the electronic trade is determined by the loan that is closest in maturity to two, five or ten years. Reference loans are only changed, however, on IMM dates (the third Wednesday in March, June, September and December) with the criteria that the loan in terms of maturity is to be closest to two, five or ten years on the following IMM date. In this way, an underlying loan in the forward contracts will always be the same as a reference loan during the last three months of the contract.*

[4] *See fact box on issue decisions in* Central Government Borrowing – Forecast and Analysis 2005:3.

FACTS

INCOME FROM PRIVATISATION AND OUR LIQUIDITY MANAGEMENT

In our planning of funding during 2007, we have arranged funding in such a way as to be able to maintain liquidity, in particular in the government bond market to the greatest possible extent. Borrowing will be concentrated on fewer benchmark loans so as to enable each loan to be sufficiently large. Use of swaps is used to be able to maintain bond borrowing despite a reduced borrowing requirement. At the same time, we continue to a certain extent to borrow both in inflation-linked bonds and in foreign currency bonds.

Income from sale of state assets entails greater challenges to liquidity management than is normally the case. It is difficult to determine when these will be received and how large they will be. If the income is received during months when the borrowing requirements are small, there will arise extensive needs for investment. However, we are able to handle large fluctuations in our cash position.

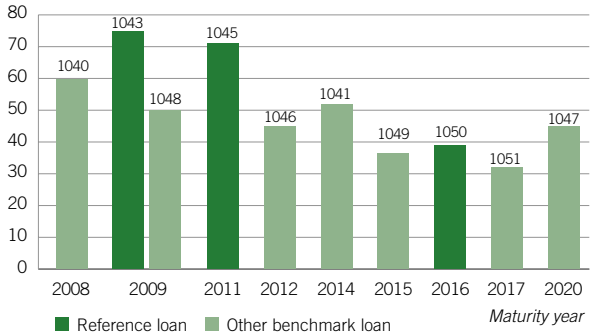
Besides the investment capacity we have in the short-term krona market, we also have access to the international money market. We can deposit surplus cash at institutions with a good credit rating, purchase interest-bearing securities issued by these institutions in SEK and in foreign currency, both in Sweden and abroad. We can also deposit surpluses at other debt offices.

When we invest surpluses in foreign currency, we do not take any foreign currency risk since when we purchase foreign currency spot to make an investment, we at the same time sell foreign currency in a forward transaction (what is referred to as an FX swap). This means that even large investments within the framework of our liquidity management do not have any real effects on the exchange rate. Our policy to purchase foreign currency net for approximately the same amount every month is thus not affected by our using the international capital market in our liquidity management.

Good advance planning is important to reduce the strains on our liquidity management and to avoid excessively abrupt shifts in bond and currency borrowing. For this reason, we are taking expected privatisation income into consideration already from the turn of the year.

We have previously commented, see *Central Government Borrowing – Forecast and Analysis 2006:2*, on the buybacks of government bonds that took place in 2000. Our conclusion is that buybacks of this kind are not a first-hand alternative in the event of large one-off income but should be avoided as far as possible. We expect that the flexibility that we have today in liquidity management should be sufficient, within reasonable limits, to be able to be able to handle cash flows of the size of those arising from sale of state assets.

Figure 2. NOMINAL GOVERNMENT LOANS (BENCHMARK LOANS)
SEK billion



T-bills and interest rate swaps

Reduced borrowing in T-bills

Funding in T-bills is estimated to decrease by SEK 40 billion in 2006 compared with 2005. We expected a reduction of SEK 18 billion in the June forecast. The revision reflects the reduced borrowing requirement compared with the June forecast. During 2007, we expect a further reduction in funding in T-bills of SEK 23 billion compared with 2006 due to the expected sale of state assets during the year.

Table 5. CHANGE IN OUTSTANDING T-BILLS, NET, INCLUDING SWAPS, SEK BILLION

	2005	2006	2007
T-bill, borrowing, net [1]	–27	–67	–90
Exchanges of government bonds for T-bills	56	44	43
Change in T-bill stock	29	–23	–47
Interest rate swaps, net	41	10	21
T-bill stock and swaps, net change	70	–13	–25

[1] *Net of issues (excluding exchanges) and maturities.*

SEK 30 billion in interest rate swaps

The Debt Office can also create short-term borrowing by issuing bonds and then using interest rate swaps to shorten the time to maturity. This technique makes it possible to provide more liquidity to the bond market without increasing the total time to maturity of the debt. Provided that the difference between the swap rate and the government bond rate is sufficiently large, this borrowing technique will also reduce the central government funding costs.

During 2007, around SEK 30 billion of bond borrowing will be swapped for short interest-rate exposure in kronor or foreign currency. Interest rate swaps can also be used as part of currency borrowing. An interest rate swap is combined with a currency swap in such a way as that exposure in SEK is replaced by exposure in a foreign currency.

The Debt Office started to use swaps at the end of 1995 and has to date built up a stock corresponding to around SEK 230 billion. The outstanding stock of swaps is now expected to decrease slightly for the first time. In 2007, the volume of maturing swaps will namely exceed SEK 30 billion, the amount we expect to make in swaps.

If market conditions change, the actual swap volume can deviate from the forecast. Swaps will continue to be made at a relatively even pace during the year.

Table 6. CHANGE IN OUTSTANDING SWAPS, SEK BILLION

	2005	2006	2007
Interest rate swaps [1]	41	12	26
Currency swaps [2]	5	23	4
Swaps total	45	35	30
Swaps, maturities	–18	–24	–43
Swaps, net change	27	11	–13

[1] *Interest rate swaps from long to short interest rate exposure in SEK.*
[2] *Interest rate swaps from long to short interest rate exposure combined with currency swaps to foreign currency.*

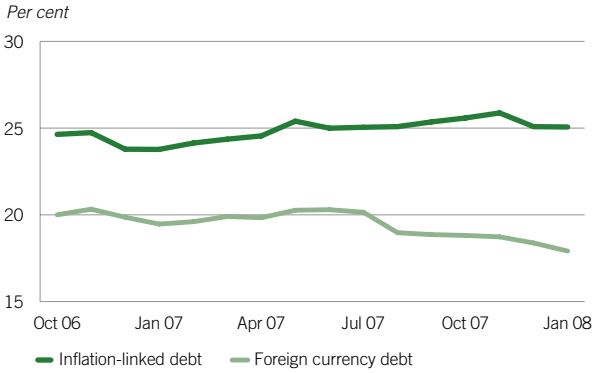
INFLATION-LINKED BORROWING

Unchanged issue volume of SEK 5–10 billion

During 2006, we have to date issued SEK 5.7 billion in inflation-linked bonds and we expect a volume corresponding to around SEK 7 billion for the whole year. Demand has varied but has, at least in periods, been relatively weak. The difference between nominal and inflation-linked interest rate levels has mainly been in line with the Riksbank's inflation target.

The share of inflation-linked debt is at present 24.6 per cent of central government debt. This means that the proportion is now in line with the target decided upon by the Government. In the light of next year's relatively large budget surplus during 2007, the share of inflation-linked debt will tend to grow even with limited issue volumes. To contribute liquidity to the market, we will none the less continue to issue at an annual rate of SEK 5-10 billion in 2007. Figure 3 shows that we only expect a marginal increase in the share of inflation-linked debt in 2007.

Figure 3. THE SHARE OF INFLATION-LINKED AND CURRENCY DEBT MEASURED AS A PROPORTION OF THE AGGREGATE CENTRAL GOVERNMENT DEBT CASH FLOW



The benchmarks for how central government debt is to be allocated between different types of debt are stated in terms of all future cash flows (nominal debt plus coupons and expected inflation compensation). This can also be expressed as the market value of the debt calculated with zero interest rates and expected inflation compensation. We refer to this as the aggregate central government debt cash flows.

A dialogue will take place with the market on the more long-term inflation-linked borrowing and the role we can play as regards contributing to liquidity in the market. Investors and dealers are welcome to contribute points of view and suggestions. We will make an announcement at a later date on the forms of this dialogue.

The auction volume at the ordinary auctions in 2007 will normally be SEK 500 million. However, deviations can occur when market conditions are special, for instance, on coupon maturity.

During 2007 we plan 14 sales auctions and five exchange auctions. The current auction calendar for 2006 and the spring of 2007 are shown in Market information at the end of the report.

As mentioned above, the Government has decided on a benchmark for the whole of central government debt. These benchmarks also cover inflation-linked debt. In our submission to the Government, we have used as a basis the development of the maturities of inflation-linked debt over time and the exchanges described here. In December, our board will decide on a deviation interval for the maturity of the inflation-linked debt. This interval will be set

so as not to be an impediment to the flexibility we need in our management of inflation-linked debt.

Loans 3106, 3105, 3102 and 3104 will be issued in 2007. This borrowing will be allocated relatively evenly between these loans. This assessment is dependent on a state of the market that can change. The next occasion for revision is in February when the next assessment will be reported on. The choice of bond for each particular auction will mainly comply with an internal issue plan decided upon in advance.

Inflation-linked borrowing in a longer perspective

What will borrowing look like in the somewhat longer term? Even without large budget surpluses, issue volumes are restricted by the size of future maturities. If we were to offer exchanges of loan 3106 for longer bonds, as we are now doing with loan 3101, this will further restrict the scope for issues. If we were instead to let the whole of loan 3106 mature without any preceding exchanges, the scope would be larger. However, investors would then have to resort to the second-hand market: both to manage the loan when there is a short period to maturity and to meet any reinvestment needs. We can mention here some examples of possible changes in borrowing on our part to contribute to liquidity: In some auctions, we could make buybacks instead of sales and we could make subsequent extension exchanges to avoid excessively large maturities when loans 3106 and 3105 mature.

Exchanges of 3101 and 3001

In 2006 and 2007, further exchanges of loan 3101 for 3106, and probably an additional longer inflation-linked bond, will be offered: one exchange in autumn 2006 and four during 2007. Exchanges took place in June and August corresponding to a total of SEK 5.9 billion of loan 3101. The exchanges carried out to date have been price risk neutral, as will be the first two exchanges to come in the spring. However, the exchange in December will be liquidity neutral.[5]

The total extent of the exchanges will correspond to the current outstanding nominal amount, i.e. SEK 26.7 billion. After the final exchange in September 2007, no further opportunities will be offered for exchanges or buybacks. This also means that we will not be able to keep any regular market maintenance repo or exchange facility in loan 3101 in relation to our dealers. It should be noted that the exchange volumes in particular auctions will not be adjusted upwards even if previous exchanges have not been fully subscribed to. Exchanges will take place in accordance with the scheme included in Table 7.

[5] *Exchanges that are neutral in terms of price risk mean that the market value of purchase and sales volume multiplied by the modified duration of the respective bond are to be equal. Exchanges that are neutral in terms of liquidity mean that the purchasing and sales amounts (cash amounts) are to be equal.*

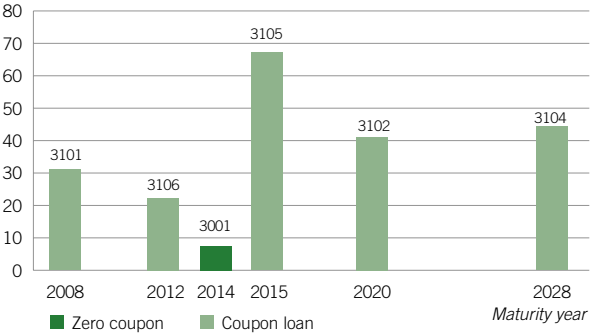
Table 7. EXCHANGES OF 3101 FOR LONGER INFLATION-LINKED BONDS

	Buyback of loan 3101, approx, SEK bn	Sale of loans	Conditions
14 December 2006	2	3106	Liquidity neutral
1 February 2007	7		Price risk neutral
29 March 2007	6		Price risk neutral
7 June 2007	6		
6 September 2007	5		
Total	26		

We will also offer an opportunity for exchange for zero coupon loan 3001 next year. This will be 1 March when we offer exchanges for loan 3105 and possibly also for loan 3106. The terms for this exchange opportunity will be announced a week before the auction. The outstanding volume in 3001 is presently SEK 6.5 billion.

The actual extent of the exchanges will depend on investor interest. Investors will not be offered any financial incentives to exchange the loans. This means that we will reduce the exchange volume if the offers are not in line with market pricing. It should also be noted that the prerequisite for our being able to rely on the market's indicative pricing for exchanges is that this actually reflects the market participants' overall valuation of, for instance, the inflation path and the consistency between nominal and inflation-linked interest rate levels. There is a more detailed account of our policy for pricing at auctions on our website.

Figure 4. INFLATION-LINKED GOVERNMENT BONDS
SEK billion



FOREIGN CURRENCY BORROWING

According to the Government's guidelines, the foreign currency debt is to be amortised at an annual pace of SEK 40 billion. This is an increase from the SEK 25 million that applied for 2006. The foreign currency debt is being am-

ortised by SEK 18 billion during the current calendar year as a result of our making us of the possibility of amortising less up to 21 June during a period when the exchange rate of the krona was weak.

During 2007, foreign currency loans equivalent to SEK 51 billion will mature. This means that we need to borrow SEK 11 billion in foreign currency next year to achieve the goal of the pace of amortisation for the foreign currency debt. This is a reduction compared with 2006.

Table 8. FOREIGN CURRENCY BORROWING 2005–2007, SEK BILLION

	2005	2006	2007
Foreign currency borrowing requirement, gross	30	44	11
Foreign currency amortisation	–20	–18	–40
Maturities and exchange rate differences	50	62	51
Bonds in foreign currency [1]	43	30	12
Exchange rate swaps [2]	18	21	38
Short-term currency loans, net	–4	4	0
Realised exchange rate differences	–8	6	1
Foreign currency borrowing, gross	30	44	11
Bonds in foreign currency	25	20	7
Foreign currency swaps, gross [2]	5	23	4

[1] *Valued at acquisition prices.*

[2] *Interest rate swaps from long to short interest rate exposure with foreign currency exposure combined with foreign currency swaps to foreign currency.*

We can borrow in foreign currency by issues of bonds in krona that are swapped to exposure in foreign currency (krona/swap borrowing)[6] or by issues of bonds in foreign currency (direct currency borrowing). The allocation of currency borrowing between direct currency borrowing and krona/swap borrowing depends on the interest rate terms that can be obtained.

To date, we have borrowed SEK 20.4 billion on the capital market. Among others, two dollar loans (eurodollar) of SEK 1 billion each have been issued: one in February maturing in 2011 and one in May maturing in 2009. The size, maturity and public sale of the loans to large institutional investors makes them benchmark loans. In addition, we have borrowed SEK 18 billion in krona/swap borrowing. The remaining part of the currency borrowing this year will mainly take place by krona/swap borrowing.

[6] *Interest on government bonds is first swapped to short interest-rate exposure in foreign currency by our receiving a fixed swap rate, which is higher than the bond rate, at the same time as we pay a floating foreign rate. This transaction consists of a combined interest rate and foreign currency swap.*

Within the framework of the swap, we exchange at the same time the krona amount from the bond borrowing to foreign currency. On maturity, we purchase foreign currency at the exchange rate applicable then. In accordance with the swap agreement, we have namely agreed to exchange the foreign currency back to kronor at the same exchange rate as applied a the time of the initial exchange. We can pay for the bond maturity with the krona amount.

Accordingly, we have obtained a foreign currency exposure since the currency is purchase on maturity at an exchange rate which is not known at present. This borrowing can lead to an exchange gain or loss. Krona/swap borrowing is thus foreign currency borrowing with currency exposure.

During 2007, the borrowing requirement has been routinely allocated between currency borrowing and krona/swap borrowing, see Table 8. This allocation is based on the experiences of demand and costs in recent years. The actual allocation may deviate from this scenario.

The share of foreign currency debt is at present 20 per cent of the debt measured as a share of the aggregate central government cash flows (see footnote 1 above). We expect to continue to amortise the foreign currency debt at an annual pace of SEK 40 billion, provided that the exchange rate of the krona is at reasonable levels, until the share of foreign currency debt is 15 per cent.

SUMMARY

The Debt Office expects, despite a relatively large budget surplus, to be able to maintain our normal funding policy and to continue to contribute to liquidity in the markets for government securities. However, borrowing in most instruments will decrease. Our starting point and ambition is that any forecast deviations that occur shall not entail any abrupt changes in borrowing.

The issue volume in nominal government bonds will be reduced to SEK 2.5 billion per auction from the year-end. We expect an additional reduction to SEK 2 billion will need to be implemented in September. As far as we can now determine, this issue volume will be retained during 2008.

Bond borrowing will be allocated so that approximately half will be made in the ten-year maturity. In addition, we expect to make occasional issues in the two and fourteen-year segments and the remaining issues in the five-year maturity. In our planning, we are assuming that a new ten-year bond will be introduced in December 2007.

T-bill borrowing is expected to decrease by SEK 23 billion during 2007 compared with 2006. This reduction is a result of the decreased borrowing requirement. We expect to make swaps corresponding to around SEK 30 billion in 2007.

Inflation-linked bond borrowing is expected to correspond to an annual rate of SEK 5-10 billion. During 2007, investors will be offered exchanges of the shortest inflation-linked bond 3101 for longer inflation-linked bonds. An exchange of the zero-coupon loan 3001 for other inflation-linked loans will also be offered.

From the turn of the year, the Debt Office will amortise the foreign currency debt at an annual pace of SEK 40 billion. The foreign currency debt is estimated to amount to SEK 11 billion during 2007.

THE PROPOSED GUIDELINES FOR 2007 IN BRIEF

In this year's guideline proposal, the Swedish National Debt Office takes another step forward, tying up a number of loose ends. Among other things, we present proposals regarding how control of the debt percentages should be designed once they have reached their benchmarks. We also propose that, starting next year, the maturity control of the debt will be based on a comprehensive maturity measure that comprises the entire debt. Finally we propose a new system of control of the Debt Office's position-taking.

The Swedish National Debt Office annually submits proposed guidelines to the Government regarding the management of the central government debt. The starting point of the proposal is the goal of the central government debt management prescribed by law, i.e., to minimise the long-term cost of the debt while taking into account the risks inherent in the management. In addition, the management shall be within the framework of the demands

The main issues in central government debt management concern the allocation of debt between nominal krona debt, inflation-linked debt and foreign currency debt, and the maturity of the debt. Costs are also affected by how these decisions are put into practice, i.e. how control takes place. In last year's Guideline Decision, the Government instructed the Debt Office to complete the analysis of percentage control and how a comprehensive maturity measure for the whole of central government debt should be defined and handled. The analysis in this year's guideline proposals is therefore concentrated on matters relating to control of central government debt. In this article, we present a summary of the Debt Office's proposed guidelines 2007-2009.

THE COMPOSITION OF THE DEBT

The Government should as before specify benchmarks for debt percentages. Furthermore, the Government should instruct the Debt Office to set a fixed interval around the benchmarks for foreign currency debt and inflation-linked debt. Accordingly, an interval will also be indirectly defined for the nominal krona debt, since the percentages always add up to one.

Inflation-linked debt to be controlled by the benchmark

Depending on the different characteristics of types of debt, it is proposed that the intervals should have a different character and function. For inflation-linked debt, it is proposed that the Government instruct the Debt Office to specify a *deviation interval*. An interval is necessary since it is difficult, or even impossible, to control the size of inflation-linked debt in detail. Partly because we do not have any short-term inflation-linked borrowing and the derivative markets are extremely limited. And partly because the primary market for inflation-linked bonds is thin, which means that we cannot count on always being able to issue the volumes we have planned. The interval limits should be set on the basis of what is needed to enable cost-effective management of inflation-linked debt (preliminary estimates show that a deviation interval of 2–3 percentage points should be sufficient). In the operational control of the inflation-linked percentage, the Debt Office shall have the benchmark specified by the Government as a point of reference although the percentage will in practice vary around this as a result of predictable factors such as maturities and coupon payments but also owing to unexpected events such as unforeseen changes in the borrowing requirement.

Foreign currency debt to be controlled through a control interval

We propose that the Government instruct the Debt Office to specify a *control interval* for the *foreign currency debt*. Within this interval, the currency percentage shall be permitted to vary as a result of exchange rate movements without the Debt Office taking any measures. This is justified by there being reasons to assume that the value of the krona will vary over time around a long-term relatively stable average. Too strict a control of the currency percentage could therefore result in the Debt Office borrowing and amortising respectively when it is expensive, i.e. buying SEK when the krona is strong and buying foreign currency when the krona is weak. By abstaining from action as long as the currency percentage moves within the control interval, the Debt Office can thus avoid carrying out systematically poor transactions. However, adjustments are made for other deviations, for instance, those as a result of maturing loans, coupon payments and borrowing requirement in connection with planning of borrowing (at present, three times a year). If the currency percentage is above or below the interval, the percentage shall be gradually restored to the *interval limit* by changes in the borrowing plan.

In the guideline decision, the Government should confirm that the differing prerequisites for control of the in-

flation-linked and currency percentage respectively mean that the Debt Office's management of the two types of debt should be based on different principles.

The size of the deviations resulting from exchange rate movements that should be allowed involves a trade-off although a limit must be set to maintain control over the composition of the debt and thus its risk characteristics. We consider an interval of ±2 percentage points to be appropriate.

Nominal SEK debt to be residually determined

Since the debt percentages always add up to one, there is no scope for specifying special guidelines for the percentage of the *nominal krona debt* but this is a residual item.

We further propose that percentages are to be calculated with the aid of the measure the *central government debt's aggregate cash flows* (CCF). This measure includes, in addition to the nominal face value of the debt, also the future coupon payments and future inflation compensation. In this way, we obtain a measure that includes all obligations associated with central government debt and therefore provides a better picture of the central government debt's risk exposure than the ordinary measure, unconsolidated central government debt. This also provides better comparability between the different types of debt. For instance, a better picture is obtained of the size of the inflation-linked debt in relation to the nominal debt since consideration is also given to the future inflation compensation. This is also the same measure that is used according to current guidelines to calculate the interest rate refixing period. [1]

The percentages change when they are measured on the basis of the CCF measure instead of the unconsolidated central government debt. The effect is largest on the inflation-linked percentage, which increases by almost 7 percentage points. The currency percentage decreases by over 2 percentage points. This is mainly caused by our including future inflation compensation in inflation-linked debt and that the main part of it is due when the loan matures, and that inflation-linked debt is so much longer than other types of debt and therefore includes more coupon payments.

New benchmarks for the percentages

The change of measure does not, of course, change the real risk exposure of the state. One starting point can therefore be to make a direct translation from one measure to the other. Rounding off to the nearest multiple of five the Debt Office therefore proposes that the benchmark for inflation-linked debt be set at *25 per cent* and the benchmark for the nominal krona debt at *60 per cent*. The benchmark for the currency percentage is unchanged at 15 per cent.

The variations in percentages shall not be subject to quantitative evaluation. The Debt Office's decision on the size of the interval and handling of situations where the currency percentage ends up outside the interval shall, however, be described and justified in our reports to enable qualitative evaluation by the Government and the Riksdag.

Control system to take effect at year-end for inflation-linked percentage

It is proposed that the new control system *come into effect* on 1 January 2007 for *inflation-linked debt*. For *foreign currency debt*, we propose, however, that the existing control system with an annual amortisation mandate continue until further notice. The reason is that the currency percentage is still a fair distance from the long-term goal (approximately 20 per cent compared with the goal of 15), so that it would be difficult to include foreign currency debt in the new control system from the turn of the year.

We thus propose that the guidelines for currency amortisation for 2007 and 2008 be retained unchanged, i.e. benchmark should be SEK 25 billion and the deviation interval SEK ±15 billion. Given present forecasts and assessments, it should be possible to apply the new control system for the foreign currency percentage from 2009. Exactly when and how a transition to percentage control of the foreign currency debt should take place should be taken up in a future guideline decision.

THE MATURITY OF THE DEBT

Entire debt to be comprised

The Debt Office proposes that the maturity of central government debt is to be controlled by a common maturity measure which includes the whole debt, i.e. inflation-linked debt should also be included in the maturity measure in the future. The maturity should as before be measured in terms of the *interest rate refixing period* and the interest rate refixing period in different types of debt should be weighed together in a one-for-one relationship. To calculate the interest rate refixing period in the inflation-linked debt, we must make an assumption about future inflation targets. It is then reasonable to assume the Riksbank's inflation target of 2 per cent. Measured in this way, the average interest rate refixing period is 5.1 years on 31 July 2006.

[1] *It is important to point out that we are not proposing a change in the central government debt measure. The official measure of central government debt, "unconsolidated central government debt" is to continue to be used when calculating the amount of central government debt.*

Maturity to be shortened

The Debt Office makes the assessment that there is scope both from principal and practical reasons to undertake some further shortening of the maturity of central government debt. Central government finances are relatively strong, illustrated by the falling debt ratio, now and in the immediate years to come. Moreover, the level of risk in the debt portfolio gradually decreases as a result of the decrease in the foreign currency percentage. Arguments of principle indicate that a shortening of the maturity provides reduced expected costs and our model-based analyses indicate that some shortening can take place without significant effects on the financial level of risk.

It is proposed that the *benchmark* for the comprehensive maturity of the debt be set by the Government at 4.7 years in 2007. For 2008 and 2009, we propose additional shortenings to 4.6 and 4.4 years respectively. According to current practice, we propose that the Government should not specify any interval limits for the maturity. These shall be set by the Debt Office separately for the respective type of debt, taking into consideration the operational prerequisites that control the maturity. It is thus proposed that the *control system* for maturity function as before.

Thoughts about maturity in individual percentages

The difficulties of controlling the maturity of the inflation-linked debt and the nominal debt mean that the proposals on comprehensive maturity are based on specific assumptions on the maturity of the debt components. The explanation for the proposal that maturity should be reduced in 2008 and 2009 is that the maturity of the inflation-linked debt is gradually decreasing. This is in turn due to the present loan policy in the inflation-linked market, where we for reasons of cost do not borrow in as long maturities as before. Consequently, we cannot either maintain the average interest rate refixing period in inflation-linked debt.

Another explanation is that we – if the Government adopts the above proposal – intend to shorten the foreign currency debt markedly from 2007. By ceasing to make the derivative transactions which we presently use to extend the maturity of the foreign currency debt to the benchmark of 2.1 years, we can reduce the maturity to on average one and a half month, equivalent to 0.125 years. We consider that it is appropriate to shorten the maturity of foreign currency debt, among other reasons because foreign currency debt consists of several currencies and the impact of short-term interest changes is therefore limited. This change does not affect the Debt Office's refinancing risk and decreases our costs as the need for derivative transactions decreases.

The proposal is based furthermore on the maturity of the nominal krona debt being left unchanged at 3.5 years throughout the whole period.

POSITIONS AND SCOPE FOR RISK

Risk is controlled by Value at Risk

The Government should as before give the Debt Office a mandate, within specified limits, to take strategic and tactical positions to reduce the state's interest costs through reallocations between types of debt and changes of the maturity. We propose that the risk mandate in future be stated in terms of daily *Value at Risk* (VaR), according to the model that has been applied in the Debt Office for several years for control of the active management in foreign currency.

The advantage of a uniform risk measure is that all types of positions can be included. The Government thus obtains a better grasp of the risks that the Debt Office is able to take (apart from what follows from the central government debt having the characteristics set in other guidelines). A natural consequence of this is also that the risk mandate for active management in foreign currency decided upon by the board should also be included in the general risk mandate adopted by the Government. This risk taking now takes place within the limits which are not set in guidelines but based on the Government and the Riksdag having approved the Debt Office's management.

Positions are taken through derivatives

Positions should be taken through *derivatives*. These derivative positions should be accounted for a in a separate portfolio and continuously valued at market value. This provides a clear distinction between the Debt Office's management of central government debt according to the Government's guidelines and the Debt Office's position-taking. A consequence of this is that the concept of letting expectations on interest rate movements have an impact on the issue amount of long-term nominal or inflation-linked krona bonds by the Debt Office should be omitted. The ability of the Debt Office to take positions in krona interest rates through derivatives should also be terminated, partly because we have such a dominant position in the market that we risk causing concern to other market participants that we would use information about our own future conduct for position-taking.

The risk mandate should be set at SEK 600 million measured as daily VaR at 95 per cent probability. This

means that if the whole risk mandate is used, there is a 95 per cent probability that the Debt Office will not lose more than SEK 600 million in a day. This also means that there is a 5 per cent probability that the loss will be greater than SEK 600 million.

It is proposed that the new system for position-taking will *come into force* on 1 January 2007. Taking into consideration that we propose that foreign currency debt shall be controlled for at least another year by an amortisation mandate, the decisions that concern the krona's exchange rate should be left outside. These should be regulated as before in the deviation interval for the amortisation rate.

FACTS

THE GOVERNMENT'S DECISION

The Government decided on 9 November 2006 on guidelines for the management of central government debt 2007. In its basic principles underlying the decision, the Government resolved that central government debt should be managed by the Government stating benchmarks for the percentages of foreign currency debt, inflation-linked debt and nominal debt, and a special control interval for the foreign currency debt. The percentages shall be calculated on the basis of a measure that takes into account all cash flows of the debt, i.e., not merely the face value of the bonds, but also any future coupon payments and expected inflation compensation. The measure is called *the central government debt's aggregate cash flows* (CCF). The control system will enter into effect in January 2007, except for the management of the foreign currency debt, which will be introduced at a later time.

The Government shall also state a benchmark for the *overall* maturity of the central government debt, i.e. not just the nominal part of the debt, but also the inflation-linked. The maturity benchmark shall be stated in terms of average interest rate refixing period.

Finally, the Government stated that the Debt Office will have the ability to take interest and currency positions aiming to lower the cost of the central government debt, with due consideration to risk. Positions should be taken through derivatives. The scope of the position-taking shall be limited by the Government stating a maximum risk mandate, measured in terms of daily Value at Risk. The risk mandate comprises all positions except those concerning the exchange rate of the krona vis-à-vis other currencies.

On this basis, the Government stated the following guidelines:

- The percentage of foreign currency debt is to decrease in the long-term to 15 per cent. The benchmark for the amortisation rate is to be set at SEK 40 billion during 2007. The amortisation rate in 2008 and 2009 should be SEK 40 billion each year. The Debt Office shall be allowed to deviate from the specified amortisation rate by SEK ±15 billion kronor.
- The percentage of inflation-linked loans in central government debt shall be 25 per cent. The Debt Office shall specify the operational deviation interval around this benchmark.
- In addition to inflation-linked borrowing and borrowing in foreign currency, the central government funding requirement will otherwise be met by nominal loans in kronor. The target percentage for the nominal krona debt will therefore by definition be 60 percent of the central government debt.
- The benchmark for the average maturity in the central government debt shall be 4.7 years at the end of 2007. The direction for the corresponding times in 2008 and 2009 shall be 4.6 and 4.4 years respectively. The Debt Office shall decide on benchmarks for each particular type of debt and specify deviation intervals around these.
- The risk mandate for the Debt Office's position-taking shall be set at SEK 600 million, measured as daily Value at Risk at 95 per cent probability. The board of the Debt Office shall determine how the risk mandate is to be allocated between the strategic and operational levels.
- The Debt Office shall contribute to improving the market's function by market and debt support. This must not lead to the goal of keeping costs to a minimum in the long-term being set aside.
- The Debt Office shall contribute to reducing the costs of central government debt by retail market borrowing.

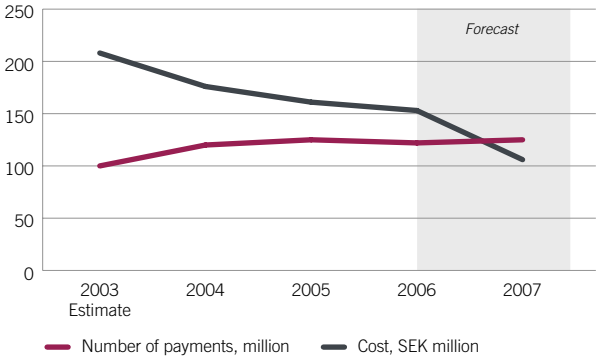
CHEAPER BANKING SERVICES FOR THE CENTRAL GOVERNMENT THROUGH NEW FRAMEWORK AGREEMENTS

The new framework agreements for payment services enable public authorities to lower their costs for payment services by approximately 30 percent. For the central government as a whole, this corresponds to savings of around SEK 50 million per year or SEK 200 million over the four-year framework agreement term. Half of the lower costs are attributable to lower prices in the new agreements and half to the authorities being able to switch to more efficient services of the different framework agreement banks.

On 29 September 2006, the Debt Office signed framework agreements for payment services with Nordea, SEB and Swedbank. This means that the central government's payments will be intermediated by the same banks as before. The agreement term is three years starting on 1 April 2007 and ending on 31 March 2010. Thereafter, the Debt Office has an option to extend the agreement for one additional year.

The Debt Office has been charged by the Government with further developing the payment system of the central government. In this role, the Debt Office has been assigned to procure framework agreements for payment services to the approximately 270 public authorities of the central government. The agreements concern payments of approximately SEK 4,200 billion annually and comprise payments both to and from the central government. Receipts are primarily comprised of taxes and public charges, and payments are primarily comprised of transfers such as pensions and child subsidies, as well as costs of the central government's administration.

NUMBER OF CENTRAL GOVERNMENT PAYMENTS AND COSTS



THE PAYMENT SYSTEM OF THE CENTRAL GOVERNMENT IS BECOMING INCREASINGLY COST EFFICIENT

The new framework agreements will result in the cost-efficiency of the payment system of the central government increasing further. In 2003, the average central government payment cost a little over SEK 2. Thereafter, the cost has been reduced. The new agreements have been calculated to result in a per-payment cost of less than SEK 1. The chart shows how the central government's costs of payment intermediation are successively being reduced even though the number of payments is increasing.

From financing via float to fees (Agreement 2004-2007)

Before 2004, banks were compensated by being able to have disposition of the intermediated amount without having to pay interest to either the sender or the recipient of the payment. The banks therefore earned interest on the money, which constituted their compensation for intermediating the payment. The float was not charged to the individual public authorities, but was centrally financed through higher interest costs for the central government.

The new fee model means that each public authority must pay for the banking services it uses. This has made the costs of the payment services visible and strengthened the motivation of the public authorities to use more efficient and cheaper payment services.

Lower prices and ranking (Agreement 2007-2010)

A new factor for this agreement is the new EU directive (2004/18/EEC) that applies to public procurement. This means, among other things, that the agreements must be ranked or that a renewed competitive tendering procedure shall be applied. The procurement rules have had a price-deflating effect at the same time as leading the public authorities even more clearly to use the most cost-efficient services in each bank.

The prices in the new agreement are 15 percent lower than in the present agreement. Calculated on the

number of transactions in 2005, and on the condition that the public authorities maintain their payment flows in the same banks as today, the lower prices entail savings for the public authorities of SEK 25 million per year.

The Debt Office has furthermore ranked the different parts of the new agreements. If the public authorities choose the services that are most highly ranked (on the basis of price and functionality), additional savings of 15 percent or 25 million per year may be obtained.

The ranking concerns not only each bank's *basic services package*, but also *each individual payment service.* The aim of the ranking of the basic services packages of the banks is to simplify and reduce the work for the majority of public authorities when they use payment services. Each bank offers a basic services package containing the services used by most of the public authorities.

Each *individual payment service* in the agreements has also been ranked. This ranking enables the public authorities efficiently to "cherry pick" by using each respective bank for what it is cheapest and best at. Each public authority is to use the service that is most highly ranked, unless there are strong reasons to make another selection. The new agreements furthermore mean that large public authorities, with more than one million payments for an individual service per year, shall make a renewed competitive tendering procedure. In the agreements, the banks have agreed to capped prices regarding these transactions. Each authority shall use the bank that offers the best terms after the renewed competitive tendering procedure for these transactions.

The Social Insurance Office is the public authority that orders the greatest number of payments, followed by the Tax Agency, the National Road Administration and the National Board of Student Aid. Some ten larger public authorities represent 90 percent of the number of payments and almost as large a part of the cost of the payment intermediation.

ASSIGNMENT TO FURTHER DEVELOP THE CENTRAL GOVERNMENT'S PAYMENT SYSTEM

The aim of the payment activities and the framework agreements is to achieve a cost-efficient and safe payment system. Furthermore, the central government's information need should be satisfied and the agreements should offer a freedom of choice both for the public authorities and the general public. Another requirement is for the central government to have a competition-neutral relationship to the banks.

Since 1999, the Debt Office has the Government's assignment to further develop the payment system of the central government. The development efforts are carried out in several areas. The above-mentioned framework agreements are a part of these efforts and concern the part of the central government payment system that is in the private banks.

There are several advantages to centralised procurement of payment services. The bargaining position in relation to the banks is improved by great payment volumes, at the same time that the procurement form enables uniform requirements to be made regarding technology, security, liquidity management, feedback etc. Since the agreements require investments by the banks in the form of adapted infrastructure, it is justified that large volumes are procured at a single occasion. The administrative costs may also be reduced in a centralised procurement, when the individual authority does not itself need to carry out an extensive, complicated and time-consuming procurement procedure.

Another area of development with which the Debt Office is working are the electronic systems supporting the Debt Office and the public authorities in their payment activities. Furthermore, the Debt Office reviews and makes proposals regarding the central government rules that control the operations.

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Cash Management Department

MATURITY AND RISK

For this year's guideline proposal, the Debt Office developed a simulation model to quantify the risk associated with the central government debt for different choices of maturity. The results indicate that the risk of short maturity in the debt is limited. A maturity in the debt portfolio of, e.g., one year, leads to a Cost at Risk of SEK 17 billion in one year's time. This is only SEK 1.3 billion more than the Cost at Risk that the present five-year debt is associated with.

In the guidelines for central government debt management for 2006, the Government requests an analysis of the prerequisites for a comprehensive maturity measure for the whole of the central government debt. A comprehensive maturity measure is intended to provide a holistic view of the trade-off between the expected cost and risk. A benchmark for the maturity of the whole debt increases the ability to balance increased risk-taking in one type of debt with a reduction of risk in another debt component.

In this article – which is set forth in a more detailed version in this year's guideline proposal – we analyse the risk/maturity aspect by quantifying in a simulation model the risk that central government debt is associated with for different choices of maturity. The aim is for the results to be able to provide guidance in the choice of the comprehensive maturity of the central government debt.

In the model, we generate interest rates (for the krona debt as well as for the foreign currency debt), inflation and exchange rate and calculate, on this basis, the nominal cost and risk for different borrowing strategies. In accordance with the Government's guidelines, costs are measured as the average running yield and the risk as the variation of the average running yield. More precisely, we define our risk measure as the difference between the median and the 95-per cent percentile in our simulated cost distribution. We call this measure Running Yield at Risk (RYaR) and it shows how much higher than expected the average running yield will be with a probability of 5 percent.

The results show that the risk decreases with the maturity of the debt. The risk reduction decreases, however, quickly when the maturity is extended. The results also show that the risk depends on our time perspective. With an average maturity of three years, RYaR is 1.2 percentage points in one year's time and 1.7 percentage points in five year's time. Expressed in kronor, i.e., Cost at Risk, this corresponds to a risk of SEK 15 and 22 billon respectively.

COST AND RISK FOR THE DIFFERENT DEBT CATEGORIES

To analyse the risk in the central government debt, we must have a clear definition of what is to be regarded as cost. Costs are defined in the Government Bill 1997/98:154 as the periodised interest expenditure. According to the guidelines for central government debt management, these shall be measured in terms of the average running yield, which is a measure of the periodised interest expenditure in relation to the size of the debt.

However, this definition is primarily focused on the nominal krona debt. To quantify the risk associated with the inflation-linked and the foreign currency debt, and thus enable a calculation of the total risk in the debt, we must also take into account the effect of inflation and exchange rate changes. The analysis takes these effects into account in two different ways. These are described in more detail below.

The stock effect is included in the cost measure

In the normal case, inflation-linked borrowing and foreign currency borrowing are associated with greater risk than nominal krona borrowing. This is a result of our measuring the costs of central government debt in nominal kronor. How much of the costs we lock in (i.e., how much risk we take) when we issue a bond depends then on the choice of debt.

When we issue a nominal krona bond, we undertake to pay a given nominal yield to the investor. The investor thus bears both the real interest rate risk and the inflation risk.

When we issue inflation-linked bonds, it is the central government that carries the inflation risk. We undertake to pay a given real interest rate and to compensate the investor for inflation during the maturity of the inflation-linked bond. An inflation-linked bond may be seen as a combination of a bond that costs a particular amount corresponding to the real interest rate at the time of issue, and variable borrowing, the cost of which corresponds to realised inflation. Through our only locking in the real interest rate when we issue an inflation-linked bond, the risk is greater than if we issue a nominal bond, given the maturity.

To calculate the cost per unit of debt for the inflation-linked debt, we adjust the average running yield (r^r) for inflation during the period $(\Delta p/p_t)$ and add the inflation adjustment of the debt. The cost of the inflation-linked debt for the period t to $t+1$ expressed in nominal terms is thus given by:

$$i^r = r^r(1+\Delta p/p_t)+\Delta p/p_t . \qquad (1)$$

When we borrow in foreign currency, we lock in the foreign nominal interest rate during the maturity of the loan. The cost expressed in kronor depends on exchange rate movements. The volatility of the exchange rate means that foreign exchange borrowing is associated with greater risk than nominal krona borrowing. We calculate the cost per unit of foreign currency debt by adjusting the average running yield (r^{fx}) by the change in the exchange rate $(\Delta fx/fx_t)$ and adding the change in market value caused by a changed exchange rate. The cost of the foreign currency debt for the period t to $t+1$ can thus be written as:

$$i^{fx}=r^{fx}(1+\Delta fx/fx_t)+\Delta fx/fx_t . \qquad (2)$$

Cost without stock effect

The extent to which the stock effect, i.e., the effect of the exchange rate on the outstanding debt volumes, shall actually be included in the cost expression on which the risk analysis is based can be discussed, however. If we study a longer time period, there is a lot that indicates that temporary variations in the exchange rate will eventually cancel one another out and thus not affect the long-term cost. We take this into consideration by also basing risk assessments on the following cost expression:

$$i^{fx}=r^{fx}(1+\Delta fx/fx_t)\cdot \qquad (3)$$

The cost of the inflation-linked debt is, of course, affected by inflation. Since the Riksbank has undertaken to keep inflation in the long-term at two per cent, it may, however, be of interest to study the risk in the inflation-linked debt if the inflation compensation on the principal is evenly distributed over the maturity of the bond. Such an apportionment – which means that we in the long term view inflation as a secure cost of two percent per year – gives the following cost expression:

$$i^{r}=r^{r}(1+\Delta p/p_t)+\Delta \bar{p}/p . \qquad (4)$$

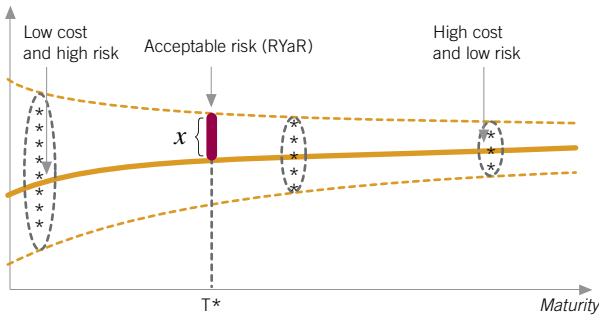
where $\cdot\Delta \bar{p}/p$ states the average inflation. Since this term is invariable, the risk is only generated by variations in the average running yield and the inflation compensation on the coupon payments.

THE LINK BETWEEN RISK AND MATURITY

The risk we are interested in controlling is that the average running yield does not become too high. Loans with short maturity generally give rise to a more volatile average running yield than loans with long maturity. This is because short-term loans need to be renewed often which increases exposure to interest rate fluctuations.

However, yield curves generally have a positive slope. This means that it is cheaper to borrow in short maturities than long. The choice of maturity is consequently a trade-off between low cost and high risk for short-term borrowing and high cost and low risk for long-term borrowing. Figure 1 shows a stylised picture of this relationship. The oval markings symbolise the spread of the average running yield for different maturities. As mentioned above, the spread is largest for short maturities and decreases when we increase the maturity.

Figure 1. AVERAGE RUNNING YIELD, RYaR AND MATURITY
Average running yield



The confidence intervals are also shown in the figure. These are to be interpreted as the level within which the interest rate stays, at a particular probability. The distance between the interest rate curve and the confidence interval states the RYaR for different maturities in the debt. In the figure, a maturity of T* means a RYaR of x percentage points. The benchmark for the average interest rate refixing period can be regarded as an approximate mix of short- and long-term borrowing which gives the desired balance between cost and risk.

THE SIMULATION MODEL

In the following section, we present the simulation model in greater detail; a reader who is mostly interested in the results of the model may skip this section and move directly to the simulation results.

The aim of the model is to provide guidance in the choice of the maturity for the aggregated debt. To achieve the goal, we need realistic estimates of future costs of the

different parts of the debt. In other words, we need a stochastic model for the interest rates (for the krona debt as well as the foreign currency debt), inflation and the exchange rate.

In the model, we opt to allow the variables to follow stationary stochastic processes which vary around long-term averages.[1] In the final parameterisation of our simulation model, we rely to a great extent on estimated historical relations but also on (hopefully realistic) assumptions about the future.

With the aid of the simulated values of our variables, we estimate the nominal cost of the inflation-linked debt and foreign currency debt with different maturities in accordance with equation (1) – (4) (the cost of the nominal krona debt coincides, of course, with the average simulated nominal interest rates). We are then finally in a position where we can study how the volatility of the costs (i.e., the risk) is affected by the choice of maturity.

Specification of the yield curves

In this work, we use a method developed by Diebold and Li to estimate the dynamics of the yield curves of the different types of debt.[2] Diebold and Li assume that the yield curves are of a Nelson-Siegel type and that they have the following function form:

$$r_t^j(\tau)=\beta_{1t}^j+\beta_{2t}^j\left(\frac{1-e^{-\tau\lambda_t}}{\tau\lambda_t}\right)+\beta_{3t}^j\left(\frac{1-e^{-\tau\lambda_t}}{\tau\lambda_t}-e^{-\tau\lambda_t}\right)+\varepsilon_t^j \qquad (5)$$

The Nelson-Siegel curve gives an approximation of the interest rate, $r_t^j(\tau)$, on bonds and T-bills with different maturities (τ) in the three types of debt (j) at time t.

The parameters β_{1t}^j, β_{2t}^j, β_{3t}^j are three latent dynamic factors and the parameter λ_t in the weights on β_{2t}^j and β_{3t}^j controls how fast the functions (weights) move towards zero. A small value of λ_t provides slowly decreasing functions and a better adaptation of the yield curve for long-term maturities, while a large lambda means the converse. λ_t also controls the maturity where the weight on β_{3t}^j reaches its maximum.

One important result that Diebold and Li point to in the aforesaid essay is that the three time-varying factors can be interpreted as the level, slope and curvature of the yield curve and that the dynamics of the factors (and thus the yield curve) can be estimated with time-series models.

The factor β_{1t}^j is highly related to the level of the curve. To see this, we let maturities approach infinity and find that $r_t(\infty)=\beta_{1t}^j$. Furthermore, we see that a change in β_{1t}^j parallel shifts the whole curve since the weight is identical (=1) regardless of the maturity.

The slope of the curve is linked to the factor β_{2t}^j. This is seen by $-\beta_{2t}^j=r_t(\infty)-r_t(0)$. That β_{2t}^j can be interpreted as the slope of the interest curve is understood intuitively since an increase in β_{2t}^j increases short-term interest rates more than long-term interest rates – the weight on β_{2t}^j is larger at the short end – which gives a flatter yield curve immediately.

Finally, Diebold and Li show that the factor β_{3t}^j is linked to the curvature of the yield curve. The reason is that an increase in β_{3t}^j has little effect on very short and very long interest rates, although it increases medium-long interest rates, which means an increased curvature.

Estimation of the yield curves

We use monthly data from January 1996 to March 2006 inclusive to estimate the yield curves monthly. For maturities less than a year, we use the interest rate on deposits and for maturities of a year and longer, we use swap rates, see table 1 for descriptive statistics. To avoid estimating yield curves for each of the currencies included in the foreign currency debt, we have weighted together the interest rates in these currencies in accordance with the Debt Office's foreign currency benchmark. In this way, we create a time series with "foreign curves".

Table 1. Descriptive statistics, nominal interest rates, Jan 1996 – March 2006

	Swedish Interest Rates		Foreign Interest Rates	
Maturity, (months)	Average %	Standard-deviation	Average %	Standard-deviation
1	3.7	1.3	3.0	0.8
3	3.7	1.2	3.0	0.8
4	3.8	1.2	3.1	0.8
9	3.9	1.2	3.1	0.9
12	4.1	1.2	3.2	0.9
24	4.4	1.2	3.5	0.9
36	4.8	1.3	3.7	0.8
48	5.0	1.3	4.0	0.8
60	5.2	1.3	4.2	0.8
72	5.3	1.3	4.3	0.9
84	5.4	1.3	4.5	0.9
96	5.5	1.3	4.6	0.9
108	5.6	1.3	4.7	0.9
120	5.7	1.3	4.8	0.9

[1] *As it is extremely difficult to separate the stochastics in many economic data series from pure randomizations, we have also opted to let interest rates and the krona exchange rate follow so-called random walk-processes. See "Central Government Debt Management: Proposed Guidelines 2007–2009".*

[2] *Forecasting the Term Structure of Government Bond Yields (NBER 2003).*

Since the central government largely uses bonds for its long-term loans, it would be preferable if we could use (zero coupon) interest rates on central government bonds in the estimates. Swap rates tend to be both somewhat higher and more volatile than central government bond rates. Sufficiently long time series for zero coupon interest rates are, however, not available at present. Furthermore, information about benchmark rates are available only for the nominal krona debt and the foreign currency debt. The section on model calibration contains a discussion on how we solve the problem with interest rates on the inflation-linked debt.

As regards the estimation of the parameters in equation (5), we follow usual practice and fix the value of lambda. This enables us to calculate the value of the regressors for each maturity and estimate the beta parameters by ordinary least squares for each month. Besides being much simpler, the estimations will also, according to Diebold and Li, be more reliable than if lambda is estimated as well. This is because we replace a number of unstable numerical optimisations with robust OLS regressions.

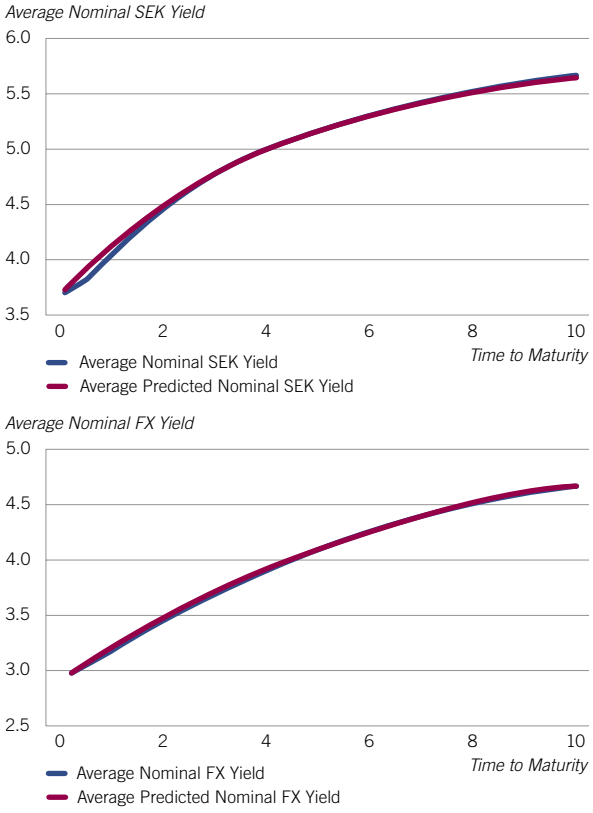
Diebold and Li choose to set lambda at 0.0609. Lambda determines the maturity at which the weight of the factor β_{3t}^{i}, or curvature, is greatest. The US interest rate curve is generally considered to show the largest curvature at a 2-3 year maturity; the value of lambda which maximises the weight in the middle of the interval, i.e., at 30 months, is just 0.0609. If we apply this method to the time period and the markets we study in this memorandum, we see that the curvature of the Swedish nominal yield curve has had its maximum at a maturity of approximately 4 years while the hypothetical foreign curve shows its greatest curvature at around a maturity of 5 years. This produces a lambda of 0.037 in the Swedish market and a "foreign lambda" of 0.030.

After we locked the lambda parameters and estimated the equation (5) month for month for our interest-rate series, we obtain time series with beta values. In Table 2 we show average values and standard deviations and in Figure 1 we draw the average actual yield curves for the time period and make a comparison with the results of the estimations.

Table 2. Estimation results, Jan 1996 – March 2006

Swedish curve	Average	Standard deviation
β_1^n	6.3	1.5
β_2^n	–2.7	1.0
β_3^n	–0.2	1.9
Foreign curve		
β_1^{fx}	5.8	1.1
β_2^{fx}	–2.9	1.1
β_3^{fx}	–1.1	1.6

Figure 2. ACTUAL AND PREDICTED YIELD CURVES, AVERAGE, JAN 1996 – MARCH 2006



The dynamics of the yield curves, the exchange rate and inflation

The variables of the model– the beta parameters, inflation and the exchange rate – follow stationary stochastic processes (so-called Ornstein-Uhlenbeck processes). The dynamics that we assume for these variables is:

$$dX = \alpha(\overline{X} - X)dt + \sigma dz \qquad (6)$$

Where $\alpha(>0)$ is the speed at which the variable X returns to its "normal level" $\overline{X}$ from a certain realised value X. dz is an increment from a Wiener process with volatility, σ. If we discretise the equation (6) we obtain:

$$X_{t+\Delta t} = X_t + \alpha(\overline{X} - X_t)\Delta t + \sigma\sqrt{\Delta t}\varepsilon_{t+\Delta t},$$

$$= \alpha\overline{X}\Delta t + (1 - \alpha\Delta t)X_t + \sigma\sqrt{\Delta t}\varepsilon_{t+\Delta t},$$

$$= a + bX_t + \eta_{t+\Delta t}. \qquad (7)$$

An ordinary AR(1) process where $\eta_{t+\Delta t}$ is normally distributed noise ($\varepsilon_{t+\Delta t}$ is "standard normal"). To "get a hold of" the parameters in our basic model we thus estimate equation (7) by OLS (for each of our eight variables) and then calculate:

$$\hat{\alpha} = \frac{1-b}{\Delta t}\,, \tag{8}$$

$$\hat{\bar{X}} = \frac{a}{1-b} \text{ and} \tag{9}$$

$$\hat{\sigma} = \sqrt{\frac{var(\eta_{t+\Delta t})}{\Delta t}}\,. \tag{10}$$

Since we use annualised monthly data in our estimates, we have Δt =1/12. In the same way as for foreign interest rates, the exchange rate dynamics is estimated on the basis of an index that describes how the krona relates to a weighted average of the currencies included in the foreign currency debt. In order not to overestimate the volatility of inflation and the exchange rate respectively, we use seasonally-adjusted data when we estimate these (12-months changes).

The results from the exercises – which with some modification are to be used as input in the simulations – are shown in Table 3.

Table 3. Parameter estimates, stationary processes, Jan 1996- March 2006

Swedish curve	α	$\bar{X}$	σ
β_1^n	0.32	4.69	0.84
β_2^n	0.67	–2.90	1.04
β_3^n	0.97	0.28	2.44
Foreign curve			
β_1^{fx}	0.31	4.39	0.58
β_2^{fx}	0.31	–1.72	0.73
β_3^{fx}	1.21	–0.61	2.34
Inflation (π)	0.74	0.94	1.18
Exchange rate (FX)	0.49	8.38	0.34

Calibration of the simulation model

The full simulation model consists of eleven equations. We have three equations for each of three types of debt that control how the yield curve in the respective type of debt develops over time, and one equation each for inflation and exchange rate trends. In the preceding section, we only estimated eight equations, however, three equations for the inflation-linked interest rate curve are missing.

Since data on inflation-linked interest rates are not available, we have decided to calibrate the inflation-linked yield curve on the basis of the Swedish nominal curve. This means that the difference between the curves amounts on average to expected inflation (= The Riksbank's inflation target of two per cent). As regards the slope and curvature of the interest-linked curve, we assume that these comply on average with that of the nominal curve. The import of this is that in the model – on average – it is as expensive to borrow inflation-linked as nominally given a particular maturity. We have estimated the variance of the inflation-linked curve (the three beta factors) at half of the variance in the nominal curve by comparing the interest rate volatility of a synthetic 10-year inflation-linked bond with the 10-year nominal interest rate.[3]

The simulated yield curves are parameterised on the basis of the average Swedish curve from and including January 2000. In other words, we use the "Swedish" beta- and lambda values for the foreign yield curve as well. This means that we assume that the expected cost for borrowing in foreign currency accords with borrowing in SEK.

In the calibration of the model, we have moreover chosen to depart from the regression results in the previous section as regards the future inflation process. We scale down the estimated volatility by 20 per cent in the simulations. We consider that a scaling-down is justified due to the time period we are studying largely being directly after the decision on a new monetary policy regime. It is not inconceivable that a period of this kind is associated with greater uncertainty about inflation than when the new regime has settled in.

The results in the previous section, the scaling-down of the volatility in the inflation process, and the assumption of the appearance of future average interest rate curves then give the following dynamic processes:

$$\begin{bmatrix} \beta_{1t+1}^n \\ \beta_{2t+1}^n \\ \beta_{3t+1}^n \\ \beta_{1t+1}^r \\ \beta_{2t+1}^r \\ \beta_{3t+1}^r \\ \beta_{1t+1}^{fx} \\ \beta_{2t+1}^{fx} \\ \beta_{3t+1}^{fx} \\ \pi_{t+1} \\ FX_{t+1} \end{bmatrix} = \begin{bmatrix} \beta_{1t}^n \\ \beta_{2t}^n \\ \beta_{3t}^n \\ \beta_{1t}^r \\ \beta_{2t}^r \\ \beta_{3t}^r \\ \beta_{1t}^{fx} \\ \beta_{2t}^{fx} \\ \beta_{3t}^{fx} \\ \pi_t \\ FX_t \end{bmatrix} + \begin{bmatrix} 0{,}32 \\ 0{,}67 \\ 0{,}97 \\ 0{,}32 \\ 0{,}67 \\ 0{,}97 \\ 0{,}31 \\ 0{,}31 \\ 1{,}21 \\ 0{,}74 \\ 0{,}49 \end{bmatrix} \cdot \begin{bmatrix} (5{,}6-\beta_{1t}^n) \\ (-2{,}6-\beta_{2t}^n) \\ (0-\beta_{3t}^n) \\ (3{,}6-\beta_{1t}^r) \\ (-2{,}6-\beta_{2t}^r) \\ (0-\beta_{3t}^r) \\ (5{,}6-\beta_{1t}^{fx}) \\ (-2{,}6-\beta_{2t}^{fx}) \\ (0-\beta_{3t}^{fx}) \\ (2{,}0-\pi_t) \\ (8{,}21-FX_t) \end{bmatrix} + \begin{bmatrix} 0.84\varepsilon_{1t+1}^n \\ 1.04\,\varepsilon_{2t+1}^n \\ 2.44\varepsilon_{3t+1}^n \\ 0.60\varepsilon_{1t+1}^r \\ 0.74\varepsilon_{2t+1}^r \\ 1.73\,\varepsilon_{3t+1}^r \\ 0.57\varepsilon_{1t+1}^{fx} \\ 0.73\varepsilon_{2t+1}^{fx} \\ 2.35\varepsilon_{3t+1}^{fx} \\ 0.94\varepsilon_{t+1}^{\pi} \\ 0.34\varepsilon_{t+1}^{FX} \end{bmatrix} \tag{11}$$

[3] *We create the inflation-linked bond by weighing together existing inflation-linked bonds to a hybrid bond with a ten-year maturity.*

We introduce stochastics in the processes by drawing, for each time step – one year – a random number, ε, from a multivariate standard normal distribution. The processes (i.e., the random numbers) do not have autocorrelation and are correlated according to Table 4.

A realistic correlation structure in the model is important since it directly affects the diversification effect we make use of when we borrow on a number of markets and in several types of debt. In the simulations, we use the estimated historical correlations between the eight variables that we estimate. To obtain correlations between the inflation-linked curve and other variables, we use the real beta factors we have created on the basis of the factors of the nominal curve. The correlation between the real factors and the corresponding nominal factors has been set at 0.7. We then obtain the following correlation matrix:

Table 4. Correlation matrix, input in the simulations

	β_1^n	β_2^n	β_3^n	β_1^r	β_2^r	β_3^r	β_1^{fx}	β_2^{fx}	β_3^{fx}	FX	π
β_1^n	1.00	–0.58	–0.38	0.71	–0.42	–0.25	0.97	–0.75	–0.34	–0.64	–0.10
β_2^n	–0.58	1.00	0.38	–0.41	0.71	0.26	–0.48	0.68	0.24	0.45	0.37
β_3^n	–0.38	0.38	1.00	–0.27	0.27	0.70	–0.37	0.59	0.87	0.06	0.15
β_1^r	0.71	–0.41	–0.27	1.00	–0.29	–0.17	0.68	–0.53	–0.24	–0.45	–0.07
β_2^r	–0.42	0.71	0.27	–0.29	1.00	0.19	–0.35	0.49	0.17	0.32	0.26
β_3^r	–0.25	0.26	0.70	–0.17	0.19	1.00	–0.24	0.41	0.60	0.04	0.11
β_1^{fx}	0.97	–0.48	–0.37	0.68	–0.35	–0.24	1.00	–0.72	–0.45	–0.57	–0.01
β_2^{fx}	–0.75	0.68	0.59	–0.53	0.49	0.41	–0.72	1.00	0.53	0.39	0.04
β_3^{fx}	–0.34	0.24	0.87	–0.24	0.17	0.60	–0.45	0.53	1.00	–0.06	0.01
FX	–0.64	0.45	0.06	–0.45	0.32	0.04	–0.57	0.39	–0.06	1.00	0.50
π	–0.10	0.37	0.15	–0.07	0.26	0.11	–0.01	0.04	0.01	0.50	1.00

SIMULATION RESULTS

In the simulations, we generate 20,000 paths for our stochastic variables; the simulation horizon is 30 years. To obtain a measure of the average running yield right from year one, we need a "loan history" which is as long as our longest loan strategy. Volatility arises when a loan is renewed and the market rate at time t on instruments with a certain maturity replaces the interest rate on the instrument that matures. As a simplification, we have in the simulations assumed that the interest rate curves have been constant, and the same as the simulated average curve for the period between January 2000 – March 2006, during our "loan history".

We also make some simplified assumptions as regards the strategies which we study. In the first place, we assume that borrowing in the different types of debt takes place with the same maturity and that we roll bonds with a particular maturity in a certain strategy. This means that, to achieve a maturity of, for instance, five years, we issue only 10-year bonds. In the second place, we assume that 20 per cent of the borrowing is inflation-linked krona borrowing, 15 per cent is foreign currency borrowing and the rest is borrowed in nominal kronor.

With these assumptions, it is simple – on the basis of the cost definitions and the simulated distributions – to calculate the risk related to different maturities and time horizons, with which the central government debt is associated. The results are set forth in Figures 3 and 4, and in Tables 5 – 8 below.

Figure 3. PORTFOLIO RUNNING YIELD AT RISK

Percentage points and years

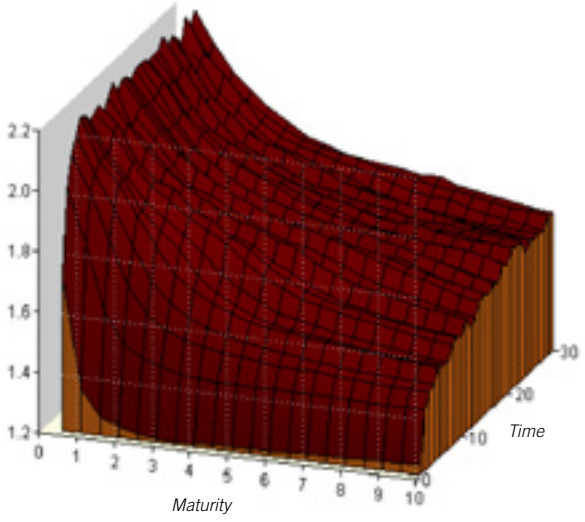
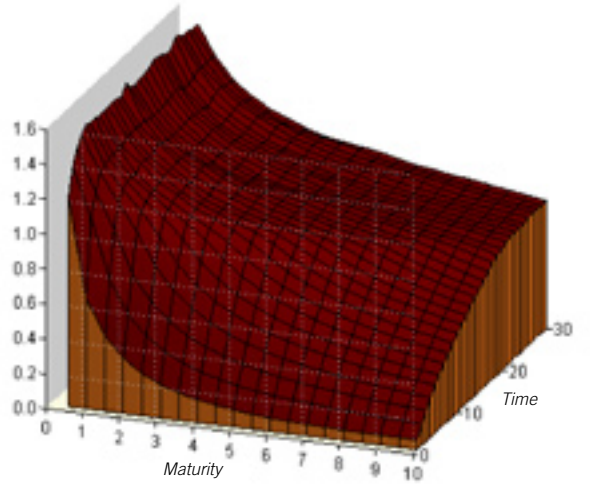


Figure 4. PORTFOLIO RUNNING YIELD AT RISK (w/o stock effects)

Percentage points and years



In the figures – showing RYaR for the total debt, with and without the so-called stock effect – we find (as expected) that the risk decreases with the maturity of the debt and increases the longer the time perspective. Note, however, that the marginal risk reduction decreases rapidly as the maturity is extended, and that with long maturities it takes a long time before the "horizon risk" levels out.

In the tables, RYaR is presented – for the total debt and the debt's various components – one and five years ahead for different maturity strategies, and what this RYaR can be converted to in kronor and ören (Cost at Risk, CaR) given today's size of the debt (April 2006). With a maturity of, for instance, five years in the total debt, RYaR amounts – when the stock effects are included – to 1.25 percentage points in a year's time. This corresponds to a CaR of SEK 15.6 billion.

We also see clearly that the risk in the foreign currency debt and the inflation-linked debt is due to a great extent on whether we include the stock effects or not. With these included, the foreign currency debt is considerably more risk-filled than both the inflation-linked debt and the nominal domestic debt, and the inflation-linked debt in turn is more risky than the nominal krona debt. A risk ranking which markedly changes if we do not include these effects. Then, the foreign currency and the inflation-linked debt are instead, at least if we borrow short-term, less risky than nominal krona debt.

Altogether, we interpret the results to show that the risk of having a relatively short maturity of the debt is very limited. A maturity in the debt portfolio of one year means, for instance, that CaR in a year's time will only be SEK 1.2 billion higher than in the case of a comprehensive maturity of the debt portfolio of seven years. We can reduce the maturity of the whole of central government debt without jeopardising central government finances. A proposal for a benchmark for the maturity of the aggregate debt must of course be based on what is operationally manageable; the results indicate, however, that we do not need for reasons of risk to "go further out on the curve" than this.

Table 5. RYaR and CaR, percentage points and SEK billion, stationary processes with stock effect, time horizon 1 year

Maturity	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
RYaR														
Nom SEK RYaR	1.43	0.75	0.50	0.37	0.29	0.23	0.19	0.16	0.14	0.12	0.11	0.10	0.09	0.08
Real RYaR	2.23	1.81	1.72	1.67	1.65	1.63	1.62	1.61	1.61	1.61	1.61	1.60	1.60	1.60
FX RYaR	7.05	7.06	7.09	7.12	7.15	7.16	7.19	7.20	7.21	7.22	7.23	7.24	7.24	7.25
Portfolio RYaR	1.68	1.36	1.28	1.25	1.24	1.23	1.24	1.24	1.25	1.25	1.26	1.26	1.26	1.26
CaR														
Nom SEK CaR	10.6	5.5	3.7	2.7	2.1	1.7	1.4	1.2	1.0	0.9	0.8	0.7	0.7	0.6
Real CaR	4.7	3.8	3.6	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
FX CaR	20.3	20.4	20.5	20.6	20.6	20.7	20.7	20.8	20.8	20.8	20.9	20.9	20.9	20.9
Portfolio CaR	20.9	16.9	15.9	15.6	15.4	15.3	15.4	15.4	15.5	15.6	15.6	15.6	15.6	15.7

Table 6. RYaR and CaR, percentage points and SEK billion, stationary processes with stock effect, time horizon 5 years

Maturity	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
RYaR														
Nom SEK RYaR	1.81	1.53	1.38	1.23	1.08	0.91	0.78	0.69	0.61	0.55	0.51	0.47	0.44	0.41
Real RYaR	2.47	2.22	2.10	2.01	1.94	1.85	1.81	1.77	1.75	1.74	1.73	1.72	1.71	1.70
FX RYaR	8.56	8.71	8.78	8.79	8.82	8.81	8.77	8.77	8.77	8.76	8.75	8.75	8.76	8.75
Portfolio RYaR	2.16	2.05	1.98	1.88	1.81	1.73	1.67	1.64	1.61	1.58	1.56	1.55	1.54	1.53
CaR														
Nom SEK CaR	13.4	11.4	10.2	9.1	8.0	6.8	5.8	5.1	4.6	4.1	3.8	3.5	3.2	3.0
Real CaR	5.2	4.7	4.5	4.3	4.1	3.9	3.8	3.8	3.7	3.7	3.7	3.6	3.6	3.6
FX CaR	24.7	25.2	25.4	25.4	25.5	25.4	25.3	25.3	25.3	25.3	25.3	25.3	25.3	25.3
Portfolio CaR	26.8	25.5	24.6	23.3	22.5	21.5	20.8	20.4	20.0	19.7	19.4	19.2	19.1	19.0

Table 7. RYaR and CaR, percentage points and SEK billion, stationary processes without stock effect, time horizon 1 year

Maturity	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
RYaR														
Nom SEK RYaR	1.43	0.75	0.50	0.37	0.29	0.23	0.19	0.16	0.14	0.12	0.11	0.10	0.09	0.08
Real RYaR	1.30	0.66	0.45	0.33	0.26	0.21	0.18	0.15	0.13	0.12	0.11	0.10	0.09	0.09
FX RYaR	1.02	0.61	0.45	0.37	0.33	0.31	0.30	0.30	0.30	0.31	0.31	0.32	0.32	0.32
Portfolio RYaR	1.20	0.63	0.42	0.31	0.24	0.19	0.15	0.13	0.11	0.09	0.08	0.08	0.07	0.06
CaR														
Nom SEK CaR	10.6	5.5	3.7	2.7	2.1	1.7	1.4	1.2	1.0	0.9	0.8	0.7	0.7	0.6
Real CaR	2.8	1.4	0.9	0.7	0.6	0.5	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2
FX CaR	2.9	1.7	1.3	1.1	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Portfolio CaR	14.9	7.8	5.3	3.9	3.0	2.3	1.9	1.6	1.4	1.2	1.0	0.9	0.9	0.8

Table 8. RYaR and CaR, percentage points and SEK billion, stationary processes without stock effect, time horizon 5 years

Maturity	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
RYaR														
Nom SEK RYaR	1.81	1.53	1.38	1.23	1.08	0.91	0.78	0.69	0.61	0.55	0.51	0.47	0.44	0.41
Real RYaR	1.59	1.34	1.18	1.06	0.93	0.77	0.65	0.57	0.50	0.45	0.41	0.38	0.35	0.33
FX RYaR	1.26	1.12	1.03	0.94	0.86	0.75	0.69	0.64	0.61	0.59	0.57	0.56	0.55	0.54
Portfolio RYaR	1.52	1.30	1.17	1.06	0.93	0.78	0.68	0.60	0.54	0.49	0.45	0.42	0.39	0.37
CaR														
Nom SEK CaR	13.4	11.4	10.2	9.1	8.0	6.8	5.8	5.1	4.6	4.1	3.8	3.5	3.2	3.0
Real CaR	3.4	2.9	2.5	2.3	2.0	1.6	1.4	1.2	1.1	1.0	0.9	0.8	0.7	0.7
FX CaR	3.6	3.2	3.0	2.7	2.5	2.2	2.0	1.8	1.8	1.7	1.7	1.6	1.6	1.6
Porfolio CaR	18.9	16.1	14.6	13.2	11.5	9.7	8.4	7.4	6.7	6.1	5.6	5.2	4.8	4.6

Gunnar Forsling, Head of Analysis
Erik Zetterström, Senior Analyst

MARKET INFORMATION

Source: The Swedish National Debt Office, unless otherwise stated

NOMINAL BONDS, OUTSTANDING AMOUNTS, 31 OCTOBER 2006

Nominal Bonds			(Nominal amount)
Maturity Date	Coupon %	Loan no.	SEK m
2008-05-05	6.50	1040	59,787
2009-01-28	5.00	1043	74,623
2009-12-01	4.00	1048	49,990
2011-03-15	5.25	1045	71,037
2012-10-08	5.50	1046	44,696
2014-05-05	6.75	1041	51,747
2015-08-12	4.50	1049	36,489
2016-07-12	3.00	1050	38,987
2017-08-12	3.75	1051	29,027
2020-12-01	5.00	1047	44,702
Total benchmarks			501,085
Non-benchmarks			40,233

NOMINAL BONDS, AUCTION DATES

Announcement date	Auction date	Settlement date
2006-11-15	2006-11-22	2006-11-27
2006-11-29	2006-12-06	2006-12-11
2007-01-03	2007-01-10	2007-01-15
2007-01-17	2007-01-24	2007-01-29
2007-01-31	2007-02-07	2007-02-12
2007-02-14	2007-02-21	2007-02-26
2007-02-28	2007-03-07	2007-03-12
2007-03-14	2007-03-21	2007-03-26
2007-03-28	2007-04-04	2007-04-11
2007-04-11	2007-04-18	2007-04-23
2007-04-25	2007-05-02	2007-05-07
2007-05-08	2007-05-15	2007-05-21
2007-05-23	2007-05-30	2007-06-04
2007-06-05	2007-06-13	2007-06-18
2007-06-20	2007-06-27	2007-07-02

T-BILLS, OUTSTANDING AMOUNTS, 31 OCTOBER 2006

	(Nominal amount)
Maturity Date	SEK m
2006-11-15	23,675
2006-12-20	64,562
2007-01-17	20,053
2007-03-21	41,825
2007-06-20	34,357
2007-09-19	31,005
2007-12-19	30,999
Total T-bills	246,476

T-BILLS, AUCTION DATES

Announcement date	Auction date	Settlement date
2006-11-22	2006-11-29	2006-12-01
2006-12-06	2006-12-13	2006-12-15
2006-12-27	2007-01-03	2007-01-05
2007-01-10	2007-01-17	2007-01-19
2007-01-24	2007-01-31	2007-02-02
2007-02-07	2007-02-14	2007-02-16
2007-02-21	2007-02-28	2007-03-02
2007-03-07	2007-03-14	2007-03-16
2007-03-21	2007-03-28	2007-03-30
2007-04-04	2007-04-11	2007-04-13
2007-04-18	2007-04-25	2007-04-27
2007-05-02	2007-05-09	2007-05-11
2007-05-16	2007-05-23	2007-05-25
2007-05-30	2007-06-05	2007-06-08
2007-06-13	2007-06-20	2007-06-25
2007-06-27	2007-07-04	2007-07-06
2007-07-18	2007-07-25	2007-07-27

INFLATION-LINKED BONDS,
OUTSTANDING AMOUNTS, 31 OCTOBER 2006

Maturity Date	Coupon %	Loan no.	SEK m
2008-12-01	4.00	3101	31,085
2012-04-01	1.00	3106	21,680
2014-04-01	0.00	3001	9,394
2015-12-01	3.50	3105	66,091
2020-12-01	4.00	3102	41,151
2028-12-01	3.50	3104	43,841
2028-12-01	3.50	3103	3
Total inflation-linked bonds (incl. inflation compensation)			213,245

INFLATION-LINKED BONDS, AUCTION DATES

Announcement date	Auction date	Settlement date
2006-11-23	2006-11-30	2006-12-05
2006-12-07	2006-12-14*	2006-12-19
2007-01-11	2007-01-18	2007-01-23
2007-01-25	2007-02-01*	2007-02-06
2007-02-08	2007-02-15	2007-02-20
2007-02-22	2007-03-01*	2007-03-06
2007-03-08	2007-03-15	2007-03-20
2007-03-22	2007-03-29*	2007-04-03
2007-04-19	2007-04-26	2007-05-02
2007-05-03	2007-05-10	2007-05-15
2007-05-16	2007-05-24*	2007-05-29
2007-05-31	2007-06-07	2007-06-12

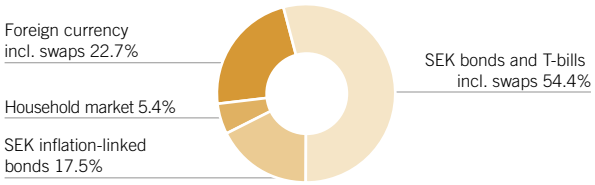
** Exchange auction.*

RATING

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

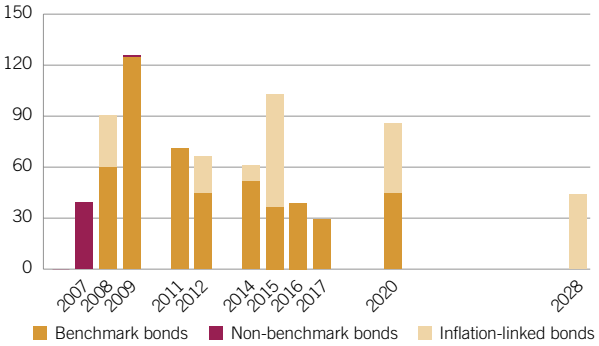
DEBT STRUCTURE

Total debt SEK 1,222 billion *31 October 2006*



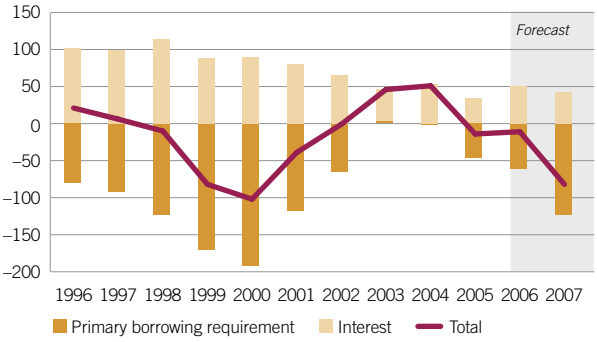
MATURITY PROFILE, SEK NOMINAL AND INFLATION-LINKED BONDS

SEK billion *31 October 2006*



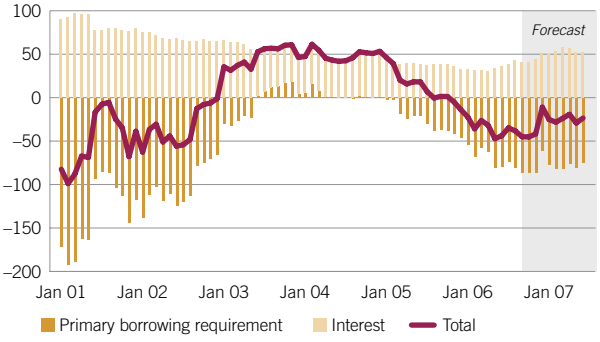
CENTRAL GOVERNMENT BORROWING REQUIREMENT, 1996-2007

SEK billion

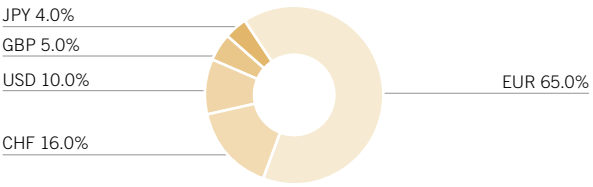


SWEDISH GOVERNMENT BORROWING REQUIREMENT, 12 MONTHS

SEK billion

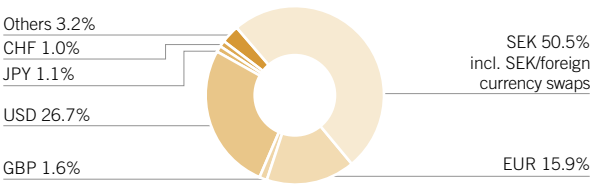


BENCHMARK FOR THE FOREIGN CURRENCY DEBT COMPOSITION



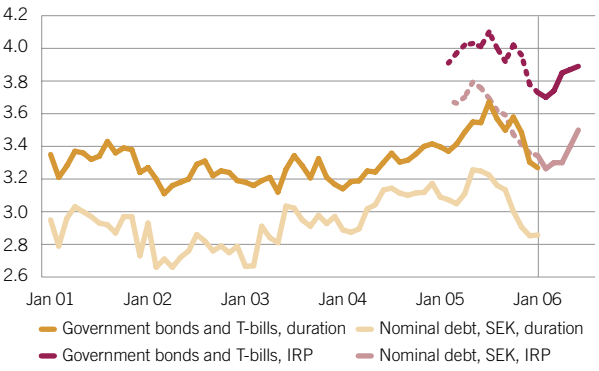
FUNDING IN FOREIGN CURRENCIES

31 October 2006



INTEREST-RATE REFIXING PERIOD (IRP) AND DURATION OF NOMINAL DEBT

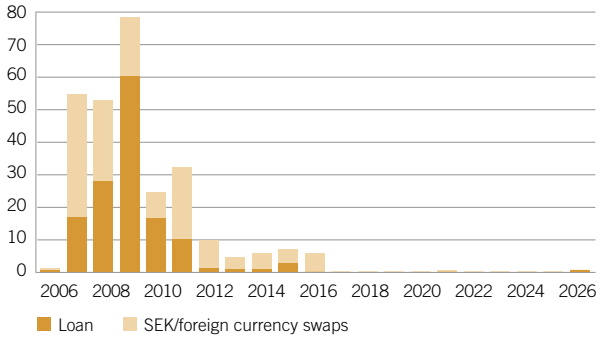
Years *31 October 2006*



On 1 January 2006 the measure of maturity was changed from duration to interest-rate refixing period (IRP).

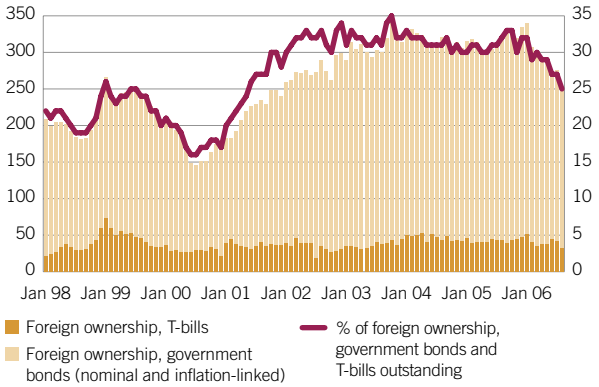
MATURITY PROFILE, FOREIGN CURRENCY LOANS EXCLUDING CALLABLE BONDS

SEK billion *31 October 2006*



FOREIGN OWNERSHIP OF GOVERNMENT BONDS AND T-BILLS

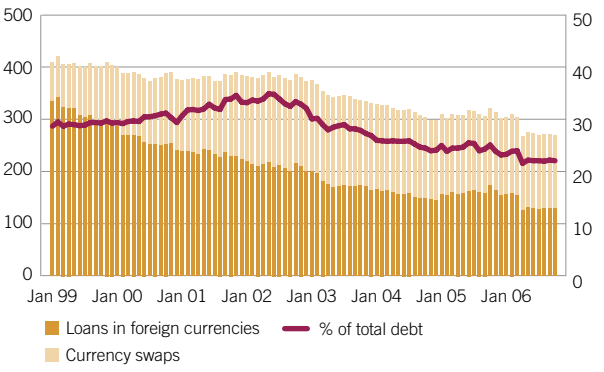
SEK billion *%*



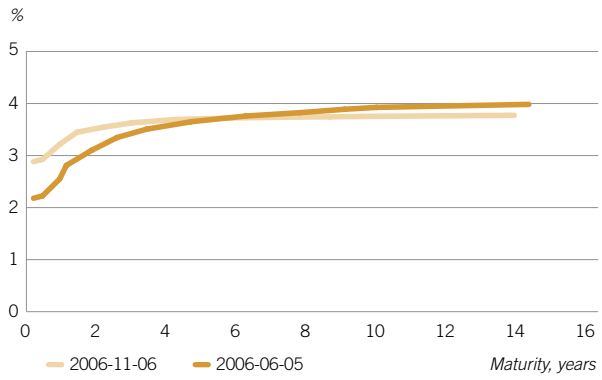
Source: The Riksbank

CENTRAL GOVERNMENT DEBT EXPOSURE IN FOREIGN CURRENCIES

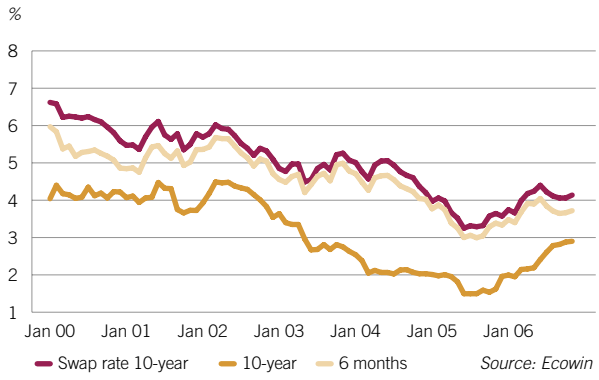
SEK billion *%*



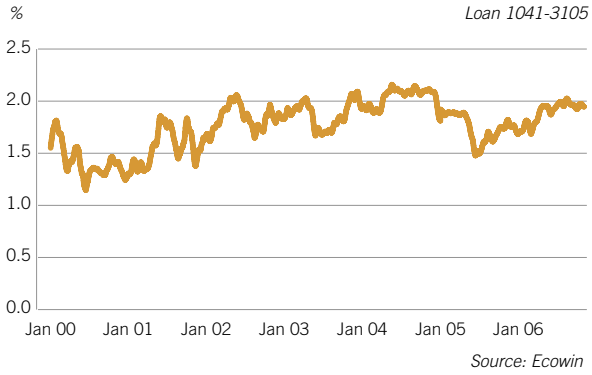
YIELD CURVE, SWEDISH GOVERNMENT SECURITIES



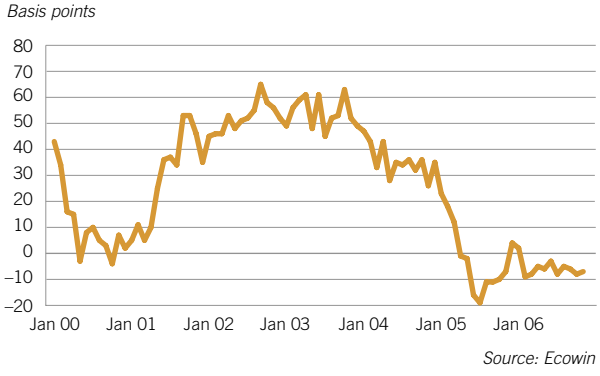
HISTORICAL INTEREST RATES



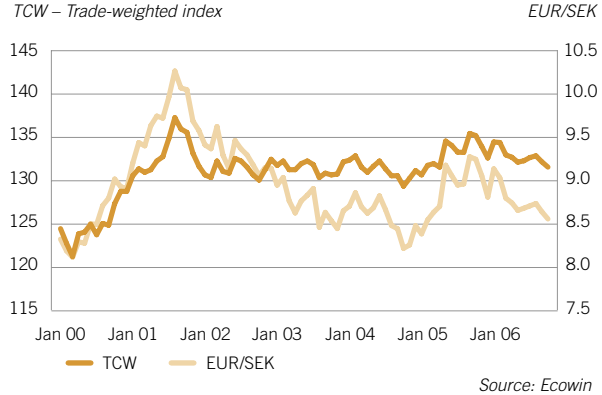
BREAK-EVEN INFLATION



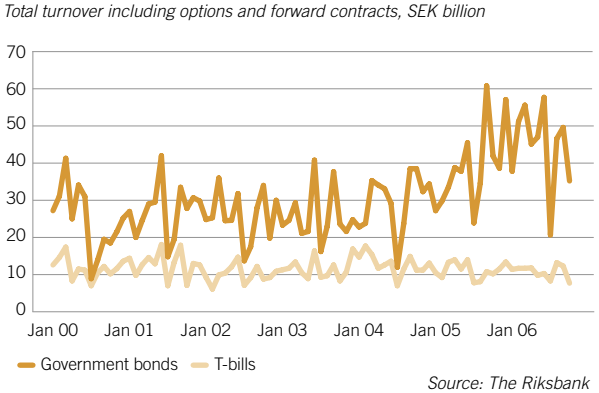
INTEREST RATE SPREAD VS GERMANY – 10-YEAR



HISTORICAL EXCHANGE RATES

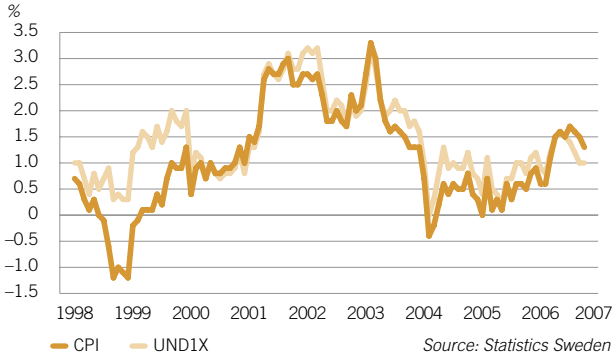


TRADING VOLUME, SWEDISH GOVERNMENT SECURITIES



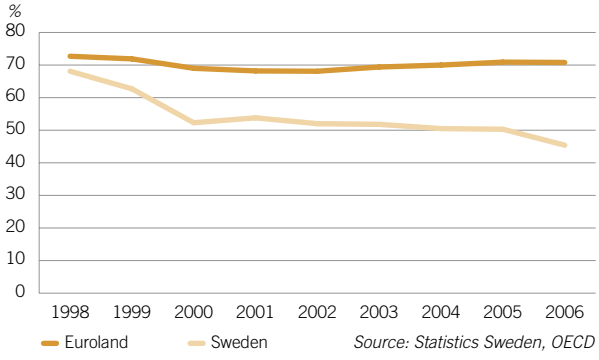
SWEDISH ECONOMY

INFLATION INDEX: UND1X AND CPI IN SWEDEN 1998–2006



Source: Statistics Sweden

GENERAL GOVERNMENT DEBT IN RELATION TO GDP



Source: Statistics Sweden, OECD

NATIONAL ACCOUNTS, PERCENTAGE CHANGE

Supply and demand	2004	2005	2006	2007
Gross domestic product [1]	3.7	2.7	4.1	3.3
Imports	6.4	7.3	8.4	7.7
Household consumption expenditure	1.8	2.4	3.1	3.4
Government consumption expenditure	0.1	0.7	1.8	1.6
Gross fixed capital formation	5.1	8.5	8.3	5.0
Stock building	–0.3	–0.2	–0.1	0.1
Exports	10.8	6.4	8.8	6.9

Selected Statistics	June 06	Sep 06	2004	2005	2006	2007
CPI. year-on-year		1.5	0.3	0.9	2.0	2.0
Unemployment rate		4.9	6.0	5.9	5.4	4.6
Current account	5.8		6.6	5.9	6.3	6.5

[1] *SEK 2,673 billion (current prices 2005).*

Sources: Statistics Sweden, The Riksbank.
Forecasts: 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
Swedbank	+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

GLOSSARY

Benchmark bond ▸ Bonds in which the Debt Office has undertaken to maintain liquidity. Normally have an outstanding volume of at least SEK 20 billion.

Bond ▸ An instrument of debt where the yield is paid in the form of interest.

Bond market ▸ The market for securities with times to maturity longer than a year. Nominal and inflation-linked government bonds are traded in the bond market.

Break even-inflation ▸ Break even-inflation is the difference between nominal and real yield at the time of issue. It specifies how large inflation has to be on average in the time to maturity for the cost of an inflation-linked and a nominal loan to be equally large. If inflation exceeds the break-even inflation, the inflation-linked loan will be more expensive for the state and vice-versa.

Capital market ▸ Consists of the credit and stock markets

Coupon bond ▸ A bond with an annual interest payment.

Credit market ▸ Consists of the money and bond markets.

Credit risk ▸ The risk that the counterparty will not perform its obligations in a transaction. Credit risk includes settlement risk, capital risk, counterparty risk, country risk and systemic risk.

Derivative instrument ▸ Financial instrument, the price of which depends on another instrument. The most common derivative instruments are options, forward contracts and swaps.

Duration ▸ Measure of the remaining maturity of a bond taking into consideration both the time to maturity and the coupon rate. A shorter maturity and a higher coupon rate will give a lower duration. Duration can also be viewed as a risk measure, which measures how much the market value of an interest security is affected by changes in the market interest rate.

Financial risks ▸ Consist of market risks and credit risks, Cf *credit risk.*

Fixed-income market ▸ Instruments are traded here that provide a predetermined yield (interest). The fixed-income market consists of the bond and money markets.

Fixed interest rate ▸ Interest rate fixed at a particular level by agreement during the period of agreement.

Float ▸ Is the period in connection with payment through a bank when neither the person who sends the money nor the recipient receives interest, which instead goes to the bank processing the payment.

Floating interest rate ▸ An interest rate that varies during the period to maturity.

Forward (forward contract) ▸ Agreement on purchase and sale at a specified price at a specified time in the future.

Government bond ▸ An umbrella term for the bonds issued by the Debt Office on the bond market. Includes both inflation-linked and nominal bonds.

Inflation ▸ General price increases that decrease the purchasing power of money. Usually measured with the aid of a consumer price index.

Inflation-linked bond ▸ A bond where the holder receives a fixed interest rate and compensation for inflation during the maturity. This means that the yield and the amount invested are protected against inflation, so that any inflation does not reduce the value of the bond during the period of saving.

Interest rate refixing period ▸ The average period until the cash flows provided by the central government debt are to be paid. Cash flows arise when interest and loans fall due for payment

Issue ▸ Sale of new government securities. Usually takes place by auctions.

Limits ▸ Quantitative limitation of amounts or risks.

Liquidity bills ▸ T-bills with customised times to maturity.

Lottery bond ▸ Savings form where interest is paid as lottery prizes. The Debt Office normally issues premium bonds two to three times a year.

Market risk ▸ The risk of unfavourable movements of market prices. Interest rate risk and currency risk are different forms of market risk.

Nominal bond ▸ An investment at a nominal fixed interest rate provides a predetermined amount in kronor on maturity.

Operating risk ▸ The risk of losses that depends on deficiencies in internal processes, human error, defective systems or external events. The concept includes legal risks but not strategic risks.

Money market ▸ The market for interest-bearing securities with times to maturity of up to a year. T-bills are traded in the money market.

Rating ▸ Is a certificate of, for instance, the ability of company or a country to perform its financial obligations, i.e. a certificate of creditworthiness.

Real interest rate ▸ An interest rate, the value of which is protected against inflation, Cf *inflation-linked bond.*

Reference loan ▸ A reference loan is a benchmark bond traded as a 2, 5 or 10-year bond. Also called super benchmark. The Debt Office concentrates borrowing in these maturities, Cf *benchmark bond.*

Repo (repurchase agreement) ▸ Agreement on sale of a security where the seller at the same time undertakes to buy back the security after a set period for an agreed price. The repo can also be reversed, i.e. a purchase agreement in combination with future sale.

National Debt Savings ▸ National Debt Savings is an account-based bond saving. National Debt Savings is available with floating interest rate, fixed interest rate or inflation-linked fixed interest rate.

Royalty loan ▸ Loan where repayment depends on the amount of sales, manufacture, etc.

Swap ▸ Agreement between two parties on a swap or exchange of interest payments during a particular period, for instance, an exchange of fixed interest for variable interest.

T-bill ▸ A short-term security without coupon payments that is issued with maturities up to a year.

T-bill market ▸ Trade with the T-bills and bonds that we issue or have issued.

Value at Risk, VaR ▸ A measure of risk that forecasts anticipated loss level with a given probability during a set period.

The next issue of Central Government Borrowing: Forecast and Analysis will be published on Wednesday 28 February, 2007, at 9.30 am.

The report is published three times a year.

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