Danish Government Securities 1998

DANMARKS NATIONALBANK

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This booklet is based on information available up to the end of February 1998.

Contents

Introduction and Summary

Danish Government Securities 1998 deals with the Danish securities market and the management of the debt of the Kingdom of Denmark.

Danmarks Nationalbank acts as fiscal agent to the Ministry of Finance in the area of central-government borrowing, including the formulation and implementation of strategies for both domestic and foreign borrowing. The overall responsibility for the management of the government debt rests with the Ministry of Finance, but within quarterly guidelines Danmarks Nationalbank is authorised to conduct the necessary debt transactions on behalf of the government.

Danish Government Securities 1998 is issued as an English version of the Danish publication *Statens Låntagning og Gæld 1997 (Government Borrowing and Debt 1997)*. This publication is more extensive in the coverage of the administration of the government debt and also contains a special topic section not included in *Danish Government Securities 1998*. A further description of the topics covered in *Government Borrowing and Debt 1997* is provided in Annex A.

The Danish Financial Market

The Danish bond market is among the largest in Europe. Besides government bonds, the Danish market has a large volume of mortgage-credit bonds. The large proportion of mortgage-credit bonds is explained by the long-standing Danish tradition of financing construction and private housing by issuing mortgage-credit bonds.

Denmark has a well-functioning money market with liquid trading in instruments such as repos, FRAs and foreign-exchange swaps. The well-functioning market among other things gives easy access to funding for investments.

The central institutions of the market are the Copenhagen Stock Exchange (bond, stock and derivatives trading), the FUTOP Clearing Centre (settlement and guaranteeing of derivatives) - since 1 January 1997 a subsidiary of the Copenhagen Stock Exchange - and the Danish Securities Centre (central securities depository and clearing centre).

There is open access to the Danish securities market for credit institutions and other investment firms from all EU member states[1]. These companies can participate in trading by becoming a remote member of the Copenhagen Stock Exchange and participate in clearing and settlement by becoming a member of the Danish Securities Centre (cross-border clearing and settlement is also available). Companies from other countries may participate in the Danish market through branches established in Denmark.

Government Bonds

The Danish government issues bonds (maturities of 5 to 30 years), Treasury notes (maturities of 1½ to 3 years) and Treasury bills (maturities of 3 to 9 months). The government bonds and Treasury notes are straight bullet loans with annual payment of interest.

It is an important objective to create liquid issues, and the number of issues open for sale has therefore been limited. The 10-year benchmark bond is of a size comparable to those of the most important European bond markets.

Government bonds and Treasury notes are sold on tap. In the tap system each securities series is continuously open for sale over an extended period of time - normally several years - and the new issue is added to the existing stock. This system has proved very flexible and has functioned well in both positive and adverse market conditions.

Government Debt Policy

All domestic securities are sold to the market by Danmarks Nationalbank acting as fiscal agent to the Ministry of Finance. The securities are sold via the Copenhagen Stock Exchange, where Danmarks Nationalbank is a member.

The fundamental principle of the Danish government domestic debt policy is that the gross domestic borrowing requirement is covered by the issue of domestic government securities. This modus operandi ensures that the liquidity effects of government spending are neutralised; the monetary policy can therefore pursue its own goals. The principle is formulated on a yearly basis and the accumulated issue of government

[1] Or countries with which the EU has an agreement on such matters.

securities therefore does not have to closely follow the accumulated borrowing requirement within a year.

Besides covering the annual borrowing requirement there are two other central objectives: to minimise the costs of the government debt and to minimise the risk exposure of the debt. The risk exposure is managed by aiming at a duration target, taking into account the redemption profile of the debt. Furthermore, the government debt policy has a number of sub-targets, e.g. keeping a continuous and stable presence in the bond market.

What is New in this Year's Edition?

A new electronic auctioning system for Treasury bills has been introduced, starting with the auction on 19 December 1997, cf. Section 2.6.

Starting in January 1998, a securities lending scheme has been established with the aim of supporting market-making in new government bond issues, cf. Section 1.9.

This year's edition of *Danish Government Securities* describes the changes in government debt policy in response to the commencement of the third stage of the EU Economic and Monetary Union, EMU, on 1 January 1999. As Denmark will remain outside EMU in the third stage no major changes in government debt policy are envisaged.

The Structure of this Booklet

Chapter 1 provides an overview of the domestic debt policy, including an account of the changes made in response to the start of the third phase of EMU, and an account of the issue activity in 1997. Chapter 2 details the types of domestic government securities and the issue in 1997 and describes the tap-issue technique. Chapter 3 gives a broader overview of the securities types and institutions of the Danish securities market. Chapter 4 provides an overview of the foreign debt policy and an account of the changes made in response to the start of the third stage of EMU, as well as a report on the borrowing activity in 1997.

Annex A

Press Release (Translation)

Government Borrowing and Debt 1997

The publication *Statens Låntagning og Gæld 1997 (Government Borrowing and Debt 1997)* is divided into a report section and a special-topic section. The report section describes the development in government borrowing and debt over the past year and an account is given of the government debt policy in 1998. The special-topic section presents the result of an analysis of selected elements of the government debt policy. The analysis should be viewed in the light of expectations of a reduction in the borrowing requirement and the commencement of the Economic and Monetary Union (EMU) in 1999.

Report section:

Domestic borrowing

Market conditions on the bond market and the conditions for sale of government securities were favourable in 1997. The long-term interest rate fell by more than 1 percentage point and the yield spread to Germany narrowed to approximately 0.3 percentage point, which is the lowest level for almost four years.

In 1997 sales of government securities amounted to DKK 73 billion, or just over DKK 20 billion less than in 1996. The duration of the domestic government debt was 4.2 years at the end of 1997. In 1998 the domestic borrowing requirement is expected to be almost DKK 75 billion. The objective in 1998 is to keep the duration around a level of four years.

The sale of government securities in 1998 will follow the same overall guidelines as in previous years, i.e. Treasury bills and fixed-interest-rate bonds will be issued. The objective is for the individual government securities series to be of a sufficient size to ensure liquidity, so that they are attractive to investors. In order to increase liquidity in newly-opened government securities an arrangement for lending of these securities was established in January 1998.

Foreign borrowing

In 1997 medium- and long-term loans for DKK 36 billion were raised abroad. All borrowing took place in D-mark, either directly or via swaps. It is estimated that the smallest risk is achieved by borrowing in core EMS currencies. In recent years there has been a gradual movement towards a larger proportion of the debt in EMS currencies. At the end of 1997 more than 90 per cent of the central government's foreign debt was thus denominated in EMS currencies. The debt in D-mark accounted for by far the largest share. Most of the borrowing in 1997 was in ordinary bullet issues. The net borrowing at market value was 0.

The Nationalbank's foreign-exchange reserve increased by DKK 43 billion in 1997. Despite this increase it was not possible to reduce the central government's foreign debt, out of consideration for the balance of the central government's account with the Nationalbank. The net repayment of the central government's foreign debt entails drawing on the central government's krone-denominated account with the Nationalbank. In accordance with the Maastricht Treaty the central government may not have an overdraft on this account. Net repayment of the foreign government debt thus requires a sufficient reserve on the central government's account with the Nationalbank.

In 1998 repayments on medium- and long-term debt amount to DKK 36 billion, of which DKK 15 billion is refinanced by new borrowing, while the remainder is financed with the proceeds from the central government's sale of shares in Tele Danmark to Ameritech. These proceeds reduce the foreign government debt in 1998.

The government debt

At the end of 1997 the government debt amounted to DKK 600 billion, or 53 per cent of GDP. Government debt as a percentage of GDP has been reduced by 3 percentage points in 1997. Interest payments on the government debt were DKK 43 billion.

The gross debt of the general-government sector - the EMU debt - amounted to DKK 693 billion, or 64 per cent of GDP, at the end of 1997. It has thus fallen by 6 percentage points from 1996. In 1998 the debt ratio is expected to decline further to 58 per cent. The gross general-government debt figures have been reported to the European Commission at the end of February 1998, together with the general-government balance figures. Even though Denmark is not participating in the third stage, it is obliged to fulfill the requirements of the Stability and Growth Pact, but may not be made subject to sanctions if the criteria are overstepped.

In 1998 new accounting principles for the management of the government debt were introduced. The purpose is to provide a more true and fair picture of the costs of the government debt. The new principles create a more direct correlation between the development in total interest expenditure and the government debt.

Special-topic section:

The special-topic section is the result of an analysis of the government debt policy. The purpose was to investigate central elements of government debt policy in the light of an expected lower borrowing requirement in coming years, and to determine whether the commencement of EMU on 1 January 1999 will entail a need to adjust the government debt policy.

Implications of EMU for Danish government debt policy

According to most observers the third stage of EMU will impose significant changes on the capital markets of the member states. The *domestic debt policy* is in harmony with the expected development in the most significant areas. Danish government securities are thus to a great extent owned by international investors and there is no reason to expect that foreign investors will lose interest in Danish government securities, since in terms of bond types and liquidity Danish government securities are already found to be attractive by this investor group.

After 1 January 1999 the central government will continue to base its domestic borrowing on fixed-interest-rate bullet issues which can be built up relatively quickly into series with a sufficient outstanding amount to ensure favourable liquidity. The strategy of issuing securities in various maturity segments will be maintained in order to be able to issue to several investor groups and also have the opportunity to take the market conditions in individual maturity segments into consideration. Any possible need for changes in the Danish bond market will be of a more technical nature. For example, adjustment of certain market conventions in connection with the possible harmonization of the market conventions on the other European markets may be necessary.

The *foreign debt policy* has so far been based on raising a number of smaller loans. The basis for the borrowing strategy is that the central government's foreign debt is relatively modest. In view of the relatively limited annual refinancing requirements it is expected that the borrowing strategy pursued so far will continue unchanged.

To a great extent the central government's foreign debt is denominated in currencies which are expected to be incorporated in the euro in connection with the transition to the third stage of EMU. The size of the euro-denominated loan market entails that most of the new borrowing is expected to be in euro in the future. The greater part of the foreign government debt will in practice be denominated in euro after 1 January 1999.

Denmark's status as an opt-out country entails that the issue of the redenomination of the domestic government debt in euro is not relevant. The redenomination of the central government's foreign debt is not evaluated to be appropriate, since it is judged that the advantages of such redenomination will not offset the costs and the related practical problems.

Costs and risk entailed by the domestic government debt

The objective of the government debt policy is to ensure that long-term borrowing costs are as low as possible. This objective is pursued with due consideration of the risk which the loan strategy entails. By risk is meant fluctuations in annual interest expenditure as a consequence of unforeseen interest-rate fluctuations.

The analysis of costs and risk has resulted in the formulation of various measures of risk. Currently, duration is used as an instrument in the domestic debt policy. Emphasis is also placed on achieving a smooth repayment profile. The purpose of the analysis was to supplement these measures in order to achieve a clearer balance between costs and risk.

The analysis defines a new risk measure, called Cost-at-Risk. Cost-at-Risk includes the uncertainty concerning the future development in interest rates, since this shows the maximum increase in costs to be expected with a given probability.

The remaining task is to operationalize Cost-at-Risk as a supplementary risk measure.

Liquidity premium on Danish government securities

The composition of the array of loans constitutes a significant factor in efforts to achieve long-term loan costs which are as low as possible. One of the elements of the government debt policy is that a small number of series with a considerable outstanding be built up as quickly as possible.

One assumption on which the government debt policy is based is that lower borrowing costs can be achieved by building up relatively large, liquid series in certain maturity segments, since investors are willing to pay a premium for liquid issues. The central government thereby achieves a liquidity premium and can cover the borrowing requirement at a lower cost.

With the prospect of a lower borrowing requirement there will be no scope to build up the outstanding amount to DKK 70-80 billion for 10-year loans, as was previously the case. However, it is evaluated that even with an outstanding amount of around DKK 50 billion it is possible to create liquid 10-year series and thereby achieve a liquidity premium.

It is difficult to measure the size of the liquidity premium empirically. However, the analysis evaluates that the liquidity premium with the current issuing policy significantly succeeds that with a policy in which more and smaller series are issued.

Experience of co-management of the foreign-exchange exposure of the central government and the Nationalbank

The present co-management (also called net management) of the foreign-exchange exposure and thereby the exchange-rate risk on the central government's foreign debt and the Nationalbank's foreign-exchange reserve commenced in 1992. The starting point was the connection between the foreign government debt and the foreign-exchange reserve arising from the fact that foreign government loans are raised in order to safeguard the foreign-exchange reserve and the Nationalbank's profit is transferred to the central government. The purpose of the co-management is to reduce the net exchange-rate exposure of the central government and the Nationalbank, taken as one.

Experience of this net management has been positive, since exchange-rate losses and gains for the central government and the Nationalbank offset each other more than was previously the case. Furthermore, the co-management has proved to be resilient to the change in the net position from substantial net liabilities to substantial net assets.

Further information

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Government Borrowing and Debt 1997 can be obtained by contacting the Nationalbank on tel.: +45 3363 7000.

Chapter 1.
Domestic Debt Management

1.1. Objectives of the Government Debt Policy

The central government's domestic borrowing requirement for the year as a whole shall be covered by issuing domestic government securities denominated in DKK. This has been agreed between the government and Danmarks Nationalbank for nearly 15 years and ensures that the liquidity effects of government spending are neutralised, cf. Box 1.1.1.

The purpose of the central government's foreign borrowing is to maintain an adequate foreign-exchange reserve. The proceeds are added to the government's deposits with Danmarks Nationalbank. Redemption of foreign loans is normally covered by new foreign loans, according to the agreement between the government and Danmarks Nationalbank. The foreign borrowing is described in more detail in Chapter 4.

Besides covering the annual borrowing requirement the central objective of the domestic government debt policy is to achieve the lowest possible borrowing costs in the long term, while taking into account the risks associated with the borrowing strategy. This is achieved by ensuring that government issues are attractive to investors. It is therefore considered important that the government issues become very liquid, and thus the supply of government securities is focused on a limited number of issues. The risks associated with the government debt relate to the effects of fluctuations in borrowing costs on the central government's budget balance. Risk management focuses on the interest rate and refinancing risk associated with the debt. This is discussed in more detail in Section 1.2.

In addition to these targets, debt management is aimed at a number of sub-targets. The tap-issue system (see Chapter 2) makes it important to issue regularly and transparently. This means continuous issue of a variety of government securities of different maturities.

Box 1.1.1. The central-government borrowing norm.

The size of the borrowing of any given year is determined by the *central-government borrowing norm* which is an agreement between the government and Danmarks Nationalbank. The agreement is composed of two parts: a norm for domestic borrowing and a norm for foreign borrowing.

The norm for domestic borrowing states that the issuance of domestic DKK-denominated securities within a year should match the gross borrowing requirement of that year (the gross borrowing requirement being defined as the gross deficit on a cash basis less redemptions on foreign debt).

The norm for foreign borrowing states that redemptions on the foreign debt should be matched by new foreign borrowing.

The norm for domestic borrowing

The norm for domestic borrowing constitutes a firm quota for issuance of domestic DKK-denominated debt and is an important element of the dividing line between fiscal and monetary policy. The norm for domestic borrowing ensures that - for the year taken as a whole - the central government's domestic payments do not affect the domestic liquidity (the banks' net position with Danmarks Nationalbank).

When timing the domestic issuance within a year the liquidity position of the banking sector is taken into consideration together with the market situation. The balance of the central government's account with Danmarks Nationalbank is also considered: this balance should be positive at all times. This is a consequence of Article 104 of the Maastricht Treaty which prohibits monetary financing.

An integral part of the norm for domestic borrowing is that Danmarks Nationalbank in the market buys the foreign currency needed to cover the central government's current expenses in foreign currency, including interest payments on the foreign debt. This ensures that the liquidity effects of all central government payments are neutralised. Although the issue of domestic government securities exceeds the domestic deficit the liquidity effect is neutralised by the buying of foreign currency (in the market) to finance the central government's foreign interest payments.

The norm for foreign borrowing

The norm for foreign borrowing implies that redemptions on the foreign debt - including securities bought back from the market and early redemptions - are refinanced by foreign borrowing.

Taken together the domestic and foreign norms ensure that the central government's total foreign payments do not affect the foreign-exchange reserve.

In agreement with the Ministry of Finance and the Ministry of Economic Affairs it is possible to deviate from the norm for foreign borrowing. The purpose of the central government's foreign borrowing is to maintain an adequate foreign-exchange reserve. Situations may arise where substantial amounts of foreign currency are required for intervention purposes or, conversely, the foreign-exchange reserve has risen beyond what is deemed to be necessary. If the foreign-exchange reserve rises beyond the desired level, the norm for foreign borrowing can be reduced should the balance on the central government's account with Danmarks Nationalbank leave room for such a reduction.

1.2. Management of the Interest-Rate and Refinancing Risk

An important objective of the management of the domestic government debt is to manage the interest-rate and refinancing risk associated with the debt. The risk is traditionally measured by the duration of the debt and the smoothness of the redemption profile. A new measure, Cost-at-Risk (CaR) is currently beeing developed as a supplement to the traditional risk measures. These measures relate to different aspects of the risk associated with the debt, and are therefore used in combination with each other.

The duration gives a broad measure of the risk exposure towards the refinancing and interest-rate risk. The duration[1] was 4.2 years at the end of 1997, cf. Table 1.2.1.

Table 1.2.1. Duration and average remaining time to maturity of the domestic government debt. End of year.

Years	Duration	Average remaining time to maturity
1992	2.8	4.2
1993	3.3	4.2
1994	3.3	4.4
1995	3.9	5.0
1996	4.2	5.3
1997	4.2	5.3

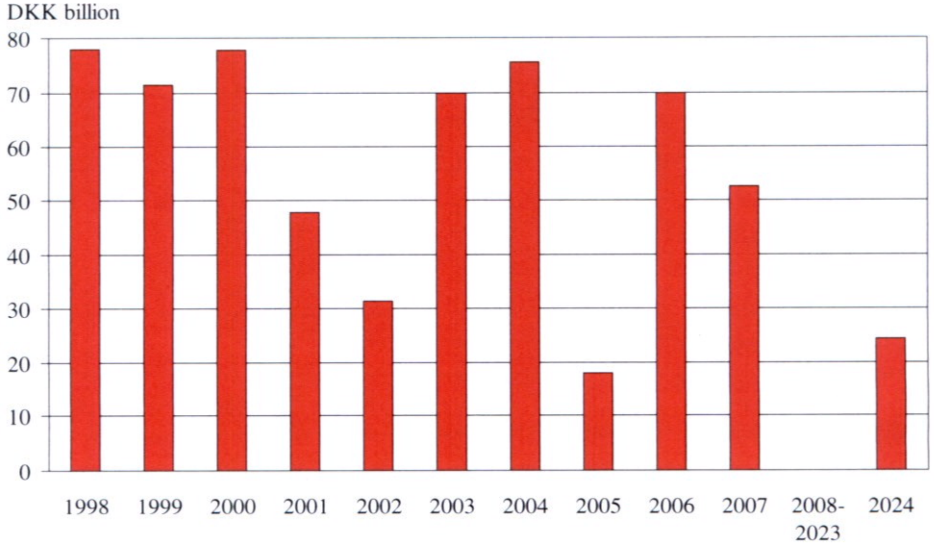
As the duration target only gives a broad measure of the risk exposure the redemption profile of the debt is also taken into consideration. It is preferred that the redemption profile of the overall debt be as smooth as possible (i.e. the redemptions should not be too concentrated on any individual year) in order, among other things, to control the refinancing risk of the debt. The redemption profile is shown in Chart 1.2.1.

The CaR measure expresses the maximum increase in borrowing costs that can be expected with a given probability, typically 95 per cent. CaR is dependent on the assumptions relating to the volatility of interest rates and the time horizon chosen. CaR is different from duration in the sense that it expresses a change in absolute expenditures with a given probability. Duration, on the other hand, is a relative measure which ex-

[1] Macauley-type duration is used.

presses the exposure to changes in interest rates for a given composition of the debt. CaR is used in relation to the setting of a long-term debt strategy, and is not used in the day-to-day risk management.

Chart 1.2.1. Redemption profile of the domestic government debt. End of 1997.



1.3. The Domestic Borrowing Requirement

The gross borrowing requirement of the central government was DKK 99.0 billion in 1997. Redemptions of the foreign debt amounted to DKK 25.2 billion. Consequently the gross domestic borrowing requirement was DKK 73.8 billion in 1997.

In 1998 the gross domestic borrowing requirement is expected to be DKK 74.6 billion, cf. Table 1.2.1.

The monthly borrowing requirement, including the purchase of domestic securities, and the monthly issue of government securities in 1997 are shown in Chart 1.3.1. The monthly borrowing requirement normally varies throughout the year. Monthly figures for the net and gross deficit in 1998 are given in Table 4 of the Appendix.

Table 1.3.1. The central government's net and gross deficit[1)].

DKK billion	1994	1995	1996	1997	1998
CIL account	-39.7	-31.3	-21.5	3.0	23.2
Capital items	-9.7	-7.3	2.0	2.2	-0.3
Net balance (cash basis)	-49.4	-38.5	-19.5	5.2	22.9
Redemption of domestic debt:					
Bonds	50.5	48.4	38.7	25.5	21.2
Treasury notes	22.5	56.1	38.0	53.4	55.0
Redemption of foreign debt	13.1	28.5	30.8	25.2	36.0
Gross deficit (cash basis)	-135.5	-171.5	-127.0	99.0	89.3
Gross domestic borrowing requirement[2)]	119.8	138.8	94.7	73.8	74.6

Note: Figures for 1997 are preliminary. Figures for 1998 are based on the Finance Act.

1) Monthly figures for the net and gross deficit are given in Table 4 of the Appendix.

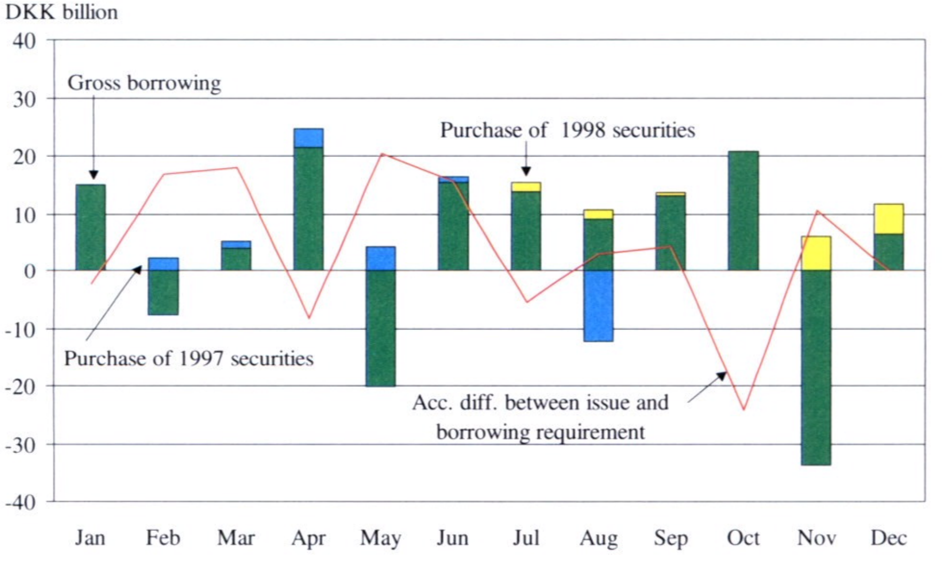
2) Gross deficit less redemption and repurchase of foreign debt. In 1998 DKK 21 billion of the net surplus will be applied to reduction of the foreign debt. The gross domestic borrowing requirement is thus derived as the gross deficit less the foreign borrowing requirement (redemptions - DKK 21 billion).

Within a year, the issue of government securities may in some periods deviate from the borrowing requirement because other aims of the issue policy takes precedence. Firstly, it is a primary objective to sell the government securities at the lowest possible cost (i.e. best price). This means that securities are issued at times when demand is strong. Secondly, it is considered important that government securities be issued on a continuous basis. This means that securities are also issued in months with no borrowing requirement.

Government securities may be bought back from the market and cancelled (redeemed extraordinarily) in order to reduce redemptions on later dates - within a year or between years. In 1997 securities maturing later in the year for a nominal value of DKK 12 billion and securities maturing in 1998 for a nominal value of DKK 14.3 billion were bought back and cancelled, cf. Section 1.5.

In 1998 DKK-denominated securities maturing during the year may be bought back and cancelled. This will not affect the borrowing requirement for the year as a whole.

Chart 1.3.1. Monthly issue of government securities and domestic borrowing requirement in 1997.



1.4. Yields on Danish Government Securities

In 1997 the yield on 10-year government bonds declined from a level of around 6.8 per cent at the beginning of the year to 5.6 per cent at the end of the year. The decline in yields continued in the beginning of 1998, cf. Chart 1.4.1.

The development in interest rates in 1997 followed the international interest-rate trends. The 10-year yield spread to Germany narrowed from a level of around 0.7 percentage point to a level just above 0.3 percentage point in the beginning of 1998.

The decline in yields was more pronounced for longer maturities, and the Danish yield curve flattened in 1997, cf. Chart 1.4.2.

Chart 1.4.1. Danish 10-year government bond yields and 10-year yield spread vis-à-vis Germany, 1994-1997.

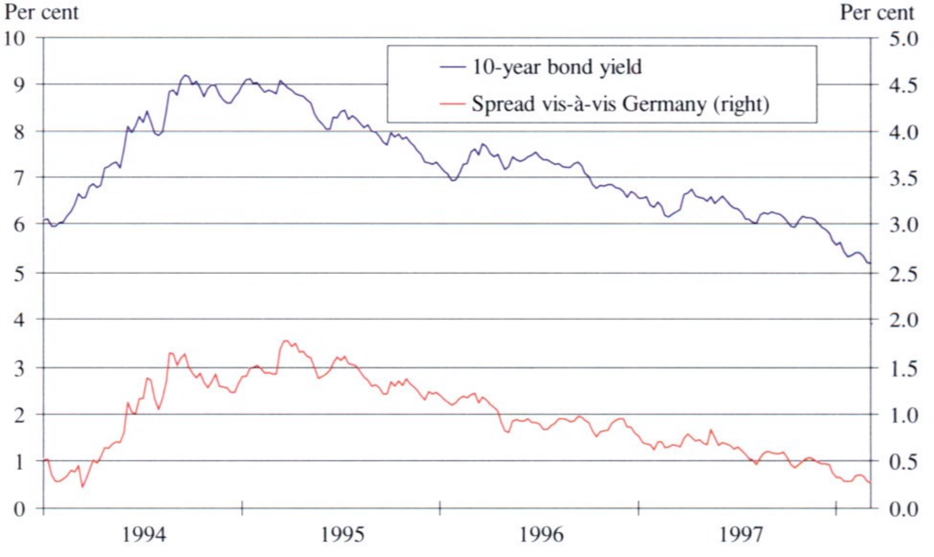
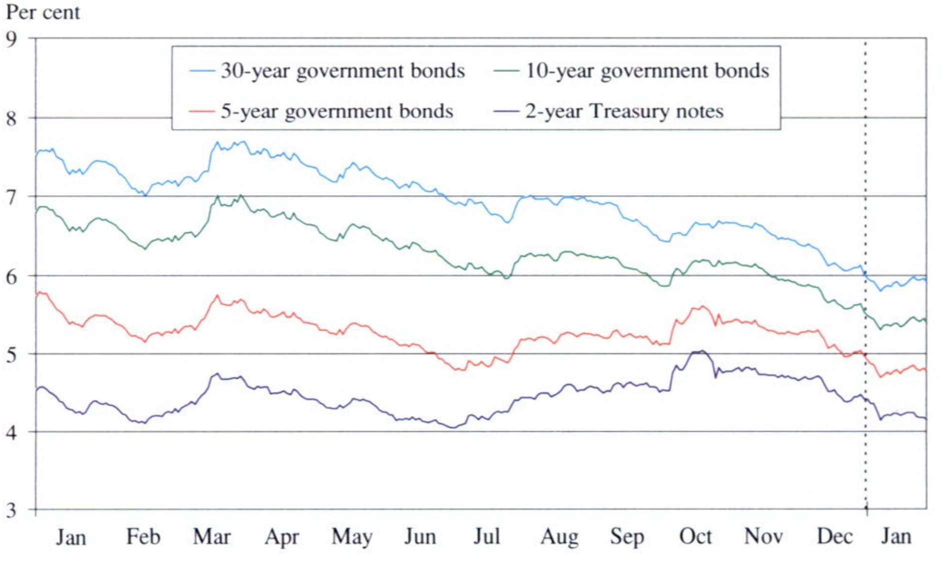


Chart 1.4.2. Yields on Danish government securities, 1997.



1.5. The Issue of Government Securities in 1997

The total issue of Danish government securities in 1997 is shown below in Table 1.5.1. The different types of government securities are described in further detail in Chapter 2.

Table 1.5.1. Issue of domestic government securities in 1997.

DKK million	Amount issued: Nominal value	Amount issued: Market value	Outstanding amount, end of 1997[1]
7% government bonds 2024	4,330	4,245	24,375
7% government bonds 2007	25,560	26,547	52,605
5% government bonds 2005	17,790	16,673	17,790
6% government bonds 2002	10,390	10,725	29,952
Bonds, fixed interest rate	58,070	58,236	
4.00% Treasury notes 2000 I	14,965	14,812	14,965
6.00% Treasury notes 1999 I	2,975	3,072	12,975
Treasury notes	17,940	17,885	
Treasury bills 1998 III	7,745	7,498	7,745
Treasury bills 1998 II	16,309	15,894	16,309
Treasury bills 1998 I	26,547	25,949	25,947
Treasury bills 1997 IV	22,142	21,707	
Treasury bills 1997 III	11,148	11,006	
Treasury bills 1997 II	4,348	4,310	
Redemptions[2]	89,472	89,469	
Treasury bills, net	-1,233	-3,104	
Government securities, total	74,777	73,017	

[1] Excluding the holdings of the Ministry of Finance under the location-swap facility.
[2] Including securities bought back and cancelled (extraordinarily redeemed prior to ordinary redemption).

As mentioned in Section 1.3., government securities may be bought back from the market and cancelled (redeemed extraordinarily) in order to reduce redemptions on later dates. In 1997 DKK-denominated securities were bought back in order to even out the financing requirement within the year as well as between 1997 and 1998, cf. Table 1.5.2.

Table 1.5.2. Securities bought back and cancelled in 1997.

DKK million	Amount bought back: Nominal value	Amount bought back: Market value	Outstanding amount, end of 1997[1)]
7.00% Treasury notes 1997 II	12,000	12,126	
Floating-rate notes 1998	550	550	5,502
9.00% Bullet loan 1998	13,195	13,801	46,215
Treasury bills 1998 I	600	597	25,947
Government securities, total	26,335	27,074	

1) Excluding the holdings of the Ministry of Finance under the location-swap facility.

1.6. The Government Debt

The Danish central-government debt was DKK 600 billion or 53.2 per cent of GDP at the end of 1997, cf. Table 1.6.1. This is unchanged from 1996.

Table 1.6.1. Central-government debt. Nominal value. End of year.

DKK billion	1994	1995	1996	1997	1998
Central-government debt:					
Domestic	617.8	657.7	677.7	673.7	667.7
Foreign	129.8	105.6	101.5	103.6	89.4
Total	747.6	763.3	779.2	777.3	757.1
Liquid assets:					
The Social Pension Fund	-146.8	-151.4	-148.8	-146.8	-145.4
Deposits with Danmarks Nationalbank	-55.3	-33.7	-31.1	-30.7	-30.7
Central-government debt less liquid assets	545.5	578.3	599.4	599.8	581.0
Per cent of GDP	56.8	57.2	56.3	53.2	48.8

Note: + denotes liabilities, - denotes assets. Figures for 1997 are preliminary. Figures for 1998 are based on the Finance Act for 1998.

The Maastricht Treaty of the European Union focuses on the public-sector debt. The public-sector debt according to the Maastricht definition is estimated at DKK 693 billion at the end of 1997, amounting to 65 per cent of GDP, cf. Table 1.6.2. This is a decrease from 71 per cent of GDP in 1996. In 1998 the ratio of public-sector debt to GDP is expected to decline to 59 per cent.

Table 1.6.2. Public-sector debt according to the Maastricht definition.

DKK billion	1994	1995	1996	1997	1998
The consolidated gross debt of the public sector	710	700	710	693	666
Per cent of GDP	77	72	71	65	59

Source: Ministry of Economic Affairs, March 1998.

In connection with the Edinburgh decision the Danish government has informed the other EU member states that Denmark will not participate in the third stage of EMU. Denmark participates fully in the second stage, including the preparations for the third stage. In the third stage all articles and provisions in the Treaty referring to a derogation country, i.e. member states which have not qualified for participation in the common currency, shall be applicable to Denmark.

Denmark is to prepare convergence programmes under the Stability and Growth Pact in the third stage of EMU, cf. Box 1.6.1. However, unlike the euro countries, Denmark will not be subject to sanctions if the criteria in the Pact are not fulfilled.

Although public-sector debt remains above 60 per cent of GDP, Denmark has not appeared on the ECOFIN Council's list of EU member states considered to have excessive budget deficits since June 1996. The background for removing Denmark from this list is that the public-sector deficit is below 3 per cent of GDP, and that the ratio of public-sector debt to GDP has been declining since 1993. The public-sector debt is specified in Box 1.6.1.

Box 1.6.1. Public-sector debt - Maastricht definition.

In the Maastricht Treaty of the European Union, Article 104C, it was agreed that on entering the second phase of EMU on 1 January 1994 the member states shall avoid excessive budget deficits. The exact definitions of excessive deficits are set out in a protocol to the Maastricht Treaty and in Council Regulation No 3605/93, stating a public-sector deficit of 3 per cent of GDP and a public-sector debt of 60 per cent of GDP as criteria.

The gross debt figures deviate from the central-government debt in a number of respects. In addition to the debt of the central government, the public-sector debt includes the financial position of the municipalities as well as the claims of the public sector on itself. The Social Pension Fund's holdings of government securities are thus deducted on calculating the gross public-sector debt.

In the third phase of EMU, the EU countries will be subject to the objectives and demands of the Stability and Growth Pact. This Pact primarily aims at ensuring budget discipline by requiring all EU countries to balance their public-sector finances in the medium term. According to the Pact, euro countries will be subject to sanctions if they do not act to redress an excessive public-sector deficit. Thus a public-sector deficit in excess of 3 per cent of GDP will only be tolerated in the event of a recession where real GDP has declined by more than 2 per cent. The sanctions will entail a non-interest-bearing deposit ranging between 0.2 and 0.5 per cent of GDP. In the event of a euro country's repeated failures to redress an excessive public-sector deficit, the deposit will be retained as a fine.

Countries outside the euro area, including Denmark, shall adhere to the objectives and demands of the Stability and Growth Pact, but will not be subject to sanctions in the event of failure to meet the requirements.

1.7. Holders of Government Securities

Statistics Denmark compiles information on the ownership distribution by sector and trade of bonds listed on the Copenhagen Stock Exchange. This information is based on data from the Danish Securities Centre (Værdipapircentralen, VP), which registers details of individual bondholders' portfolios and fluctuations therein. Danmarks Nationalbank collects various statistical information which supplements the VP statistics in certain areas, particularly in relation to the ownership distribution for Danish government securities. The results are shown in Table 1.7.1.

A significant proportion of Danish government securities are held by non-residents. Danish government securities are included in many of the international portfolios managed in accordance with government bond indices published by some of the major international banks.[1)] Non-

[1)] The indices typically include Danish government bonds corresponding to 1-2 per cent of the total (world) index value.

residents primarily hold liquid government securities of longer maturities whose market value is more sensitive to interest-rate fluctuations.

Holdings of Danish domestic government securities by non-residents increased by DKK 29 billion in 1997 to DKK 292 billion at year-end. The proportion of the domestic debt held by non-residents increased to 41 per cent at year-end, compared to 37 per cent at the beginning of the year.

Table 1.7.1. Holders of krone-denominated government securities. Market value. End of period.

DKK billion	1993	1994	1995	1996	1997
Non-financial corporate sector	24	48	45	44	43
Financial institutions incl. Danmarks Nationalbank	161	179	172	134	124
Insurance companies and pension funds	20	44	40	51	55
Public sector	58	76	106	132	145
Private, non-dividend-paying institutions	9	10	11	11	10
Household sector	43	52	72	57	44
Non-residents	269	165	218	263	292
Other	11	14	11	19	6
Total[1]	595	588	676	711	719

[1] Excluding the holdings of the Ministry of Finance under the location-swap facility.

1.8. The Consequences of EMU for Domestic Government Debt Policy

According to the plans for EMU, the third stage will start on 1 January 1999. In connection with the Edinburgh agreement the Danish government has informed the other EU member states that Denmark will not participate in the third stage of EMU.

Most observers expect significant changes on the capital markets of the EMU member states. As the central government's domestic debt policy is in harmony with the expected development in the most significant areas, no major changes are envisaged in relation to the start of the third stage. The domestic borrowing requirement will still be covered by issuing DKK-denominated securities. Denmarks status as an opt-out country entails that the issue of redenomination of domestic government debt is not relevant. Further information about the administration of the central-government debt policy in relation to the third stage of EMU can be obtained in Annex A.

1.9. Outlook for 1998

In 1998 redemptions of the domestic debt are DKK 76.2 billion, and the domestic net placement requirement is expected to be DKK 1.6 billion. Hence the gross domestic borrowing requirement is expected to be DKK 74.6 billion.

The series of domestic government securities open for sale at the beginning of 1998 are summarised in Table 1.9.1.

As in previous years the loan portfolio is concentrated on a limited number of issues. This ensures that the individual series become liquid as the outstanding volume is relatively large. Ensuring liquid series is an important objective of the administration of the central government's domestic debt. The tap issue of government bonds and Treasury notes, described in further detail in Chapter 2, means that the outstanding volume gradually reaches its maximum level.

To further enhance the liquidity of newly opened government bonds and Treasury notes a lending facility for these securities was established in January 1998. Under this facility, institutions authorised to trade on the Copenhagen Stock Exchange are able to borrow newly opened government bonds or Treasury notes against provision of other government bonds or Treasury notes as collateral. At the beginning of 1998 the lending facility comprised the 6% government bonds 2009 and the 4% Treasury notes 2001 I.

Table 1.9.1. Current issues open for sale. January 1998.

	Due date	Redemption
Government bonds:		
7% government bonds 2024	10 November	2024
6% government bonds 2009	15 November	2009
5% government bonds 2005	15 August	2005
6% government bonds 2002	15 November	2002
Treasury notes:		
4.00% Treasury notes 2001 I	15 February	2001
Treasury bills:		
Treasury bills 1998 IV	2 November	1998
Treasury bills 1998 III	3 August	1998
Treasury bills 1998 II	1 May	1998

1.10. Sources of Information

The borrowing requirement for 1998 was presented in the Finance Act for 1998 (the government's budget). The Finance Act was approved by Parliament in December 1997. Revised estimates of the government deficit are published by the Ministry of Finance - normally in May, August, October and December.

The Finance Bill for 1999 will be presented in August 1998, and the Budget would normally be approved by Parliament in December 1998. Information on the Finance Bill and the Budget will be available from the Ministry of Finance on telephone no +45 3392 3333, telefax no +45 3332 8030 or by e-mail: fm@fm.dk.

On the basis of the quarterly government deficit figures from the Ministry of Finance Danmarks Nationalbank estimates and publishes the government's net and gross borrowing requirements distributed on individual months as well as on individual days (for 2 months at a time). This information is available via fax on request.

Figures for the daily issue of government securities are available on Reuters. On the morning of each trading day Danmarks Nationalbank publishes the nominal value of the issue on the previous trading day, as well as the accumulated issue from the beginning of the year. This information can be found on Reuters, pages DKMA-DKMB.

The actual gross domestic borrowing requirement of a month is published on the first trading day of the next month. This information can be found on Reuters, pages DKMG-DKMH.

The market value of the issue in a month is published on the first trading day of the next month via the Copenhagen Stock Exchange. This information is also available from Danmarks Nationalbank via fax on request and via Reuters, pages DKMG-DKMH.

Information on the result of Treasury-bill auctions is published at 12 noon on the penultimate trading day of each month on Reuters, pages DKME-DKMF.

A list of current issues open for sale is published biannually via the Copenhagen Stock Exchange and is also available from Danmarks Nationalbank via fax on request.

Questions concerning the issue of Danish government securities, the borrowing requirement or other aspects of Danish debt policy should be directed to Danmarks Nationalbank, Financial Markets Department, Government Debt Section, telephone no +45 3363 6363, or telefax no +45 3363 7115.

Danmarks Nationalbank will launch its home page on the Internet in the spring of 1998. This home page will be updated frequently and will provide information on government debt policy. The address is: http://www.nationalbanken.dk.

Table 1.10.1. Sources of information.

Subject	Frequency	Source
Borrowing requirement, year total	Quarterly	Ministry of Finance
Borrowing requirement, monthly distribution	Quarterly	Danmarks Nationalbank
Borrowing requirement, daily distribution	Monthly	Danmarks Nationalbank
Actual borrowing requirement (ex post)	Monthly	Reuters DKMG-DKMH
Issue (nominal)	Daily	Reuters DKMA-DKMB
Issue (market value)	Monthly	Reuters DKMG-DKMH
Result of Treasury-bill auctions	Monthly	Reuters DKME-DKMF
Current issues open for sale	Biannually	Danmarks Nationalbank
Questions on the aforementioned or other aspects of Danish debt policy		Danmarks Nationalbank

Chapter 2.
The Issue of Domestic Government Securities

2.1. Types of Danish Government Securities

All domestic government securities are marketable and listed on the Copenhagen Stock Exchange. The loan portfolio currently comprises the following types of securities:

- Fixed-rate government bonds with maturities of 5, 8, 10 and 30 years.
- Fixed-rate Treasury notes with maturities of up to 3 years.
- Treasury bills with maturities ranging between 3 and 9 months.

The wide range of maturities in the government's loan portfolio provides access to a broad investor base. In addition, the maturity range allows the central government to exploit different market conditions along the yield curve when issuing new securities.

For a number of years it has been an objective of Danish domestic debt policy to create issues with characteristics that investors in Denmark and abroad consider attractive. A central element of this strategy is to focus bond issues on straight bullet loans with one annual interest payment. Another element is to create liquid issues which can be traded efficiently, domestically as well as internationally.

Liquidity is primarily ensured by creating relatively large securities series via a concentration of borrowing on a limited number of issues. The strategy of building series with large volumes to achieve liquidity explains why index-linked bonds and the stripping of existing series has not been introduced.

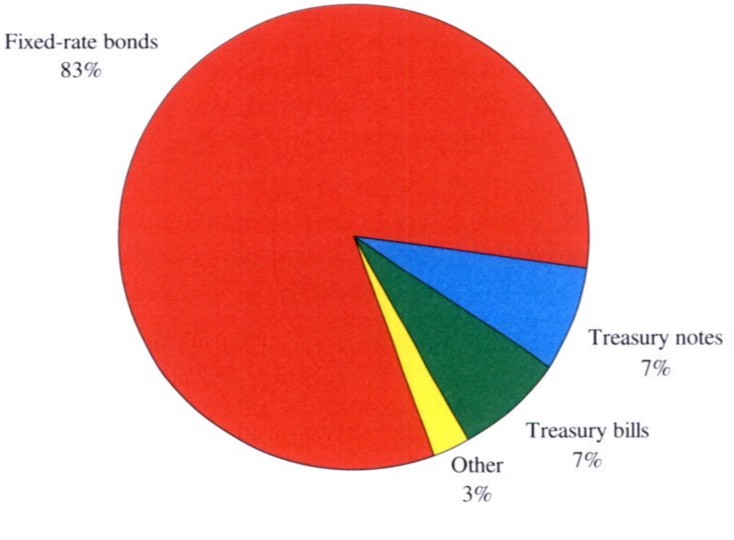
All bonds and Treasury notes are sold on tap. The tap method gradually builds up the volume of a securities series. However, the size of a new series normally reaches the threshold of a liquid market relatively quickly. Furthermore, investors and intermediaries know that the liquidity of the securities series is an important objective of the issuing policy. Therefore, new issues are usually traded at a yield very similar to that of older and more liquid issues in the same maturity segment. The tap-issue system is explained in more detail in Section 2.4.

Treasury bills are sold at monthly auctions. The auctioning system is described in Section 2.6.

In addition to the securities currently issued there are a number of older debt instruments which are still in circulation. This relates to fixed-rate serial loans, variable interest-rate loans, perpetuals, lottery bonds and a domestic ECU bond, 8.5% XEU bullet loan 2002[1]. In January 1998, the Mortgage Bank stated that the outstanding lottery bonds will not be extended when due.

Chart 2.1.1. shows the domestic central-government debt by securities types at the end of 1997.

Chart 2.1.1. Domestic central-government debt by securities types. End of 1997.



Prospectuses Relating to Government Securities

As fiscal agent for the Ministry of Finance, Danmarks Nationalbank is not required to issue prospectuses relating to the government securities.

[1] The domestic ECU-bond has been considered an instrument of the central government's foreign debt. Redemptions on this issue have therefore been refinanced according to the foreign borrowing norm. The classification as a domestic bond relates only to the registration of the issue on the Copenhagen Stock Exchange. With the introduction of a new accounting system for the central-government debt on 1 January 1998, the issue has been registered as part of the central government's foreign debt.

However, as a source of information, prospectuses clarifying the market practices and legal conditions related to government bonds, Treasury notes and Treasury bills are available. In the latest edition of these prospectuses, rules concerning applicable law and choice of legal venue are specified. The central government's access to invoke force majeure is also described.

2.2. Government Bonds and Treasury Notes

The current series of government bonds and Treasury notes are straight bullet bonds in denominations of DKK 1,000 with annual payment of interest.[1] The bonds and notes may not be called by the issuer prior to ordinary redemption. Danmarks Nationalbank may, however, on behalf of the Ministry of Finance buy back securities from the market and cancel (or hold) those securities, cf. Section 1.3.

Usually bonds are issued on tap for a period of 1-3 years, while Treasury notes are sold for one year. New issues are added to the existing stock and the newly issued bonds in each series are fungible with (exactly equal to) the bonds in that series already traded in the market. Due to the practice of issuing over an extended period of time, the issue price may deviate significantly from par during the issue period.

There are no formal rules concerning the length of the period in which a particular bond or Treasury note is issued. It may be decided to discontinue issue in a particular series, resume issue in a series or open a new series for issue. The market is informed of such changes well in advance.

It should be noted that the central government only issues bonds and Treasury notes with a coupon rate greater than or equal to the minimum coupon rate in force at the time of issue, cf. Box 2.2.1. An increase in the minimum coupon rate can thus lead to the issue of individual bond series being discontinued.

1) The yield-calculation convention used is specified in Annex B.

Box 2.2.1. The minimum-coupon-rate rule.

The central government only issues bonds and Treasury notes with a coupon rate greater than or equal to the so-called "minimum coupon rate", which is calculated according to the Danish Capital Gains Tax Act. This rule is known as the "minimum-coupon-rate rule".

It is defined in the conditions of the government securities series that all interest-bearing government securities must satisfy the minimum-coupon-rate rule on issue. Changes in the minimum coupon rate may, therefore, force issuing in a series to be discontinued before the desired volume is reached.

For private individuals in Denmark, capital gains on securities are not subject to taxation provided that on issue the securities satisfy the minimum-coupon-rate rule. These rules are of no taxation significance to non-resident investors.

The minimum coupon rate is fixed biannually (1 January and 1 July). The calculation is based on a "reference yield" that is calculated and published daily by the Copenhagen Stock Exchange. The minimum coupon rate is the integer of 7/8 of the average of the reference yield over a period of 20 trading days before 15 June and 15 December respectively.

The minimum coupon rate may be adjusted extraordinarily if the reference yield during a 10-day period is more than 1 per cent lower or 2 per cent higher than the reference yield used to calculate the current minimum coupon rate. A new minimum coupon rate is then fixed until the next ordinary adjustment.

The minimum coupon rate was 4 per cent throughout 1997. This level was maintained at the ordinary fixing valid from 1 January 1998.

Government Bonds

Government bonds are issued with a maturity of more than 3 years. For a number of years the loan portfolio has comprised government bonds with a maturity of 5, 10 and 30 years, which is the norm among larger sovereign issuers.

The size of the issues has increased considerably since the beginning of the decade, and the most important issues are very liquid by all standards. So far, the 5-year government bond series have typically reached volumes of DKK 40-50 billion and the 10-year government bond series volumes of DKK 50-70 billion.

Today, the government has liquid securities series[1)] maturing in every year from 1998 to 2007, cf. Chart 1.2.1. The domestic debt strategy has therefore, in a sense, left a build-up phase. As an effect of this - and expected reductions in the domestic borrowing requirement - the sizes of new issues may be at a slightly lower level in the years to come.

The most important government bonds are shown in Table 2.2.1.

1) Or securities series currently open for sale and on their way to becoming liquid.

Table 2.2.1. The most important government bonds at the beginning of 1998.

DKK billion	Due date	First issued	Issue discontinued	Amount issued in 1997	Size of series[1]
7% 2024	10 Nov.	6 Apr. 94	Still open	4	24
6% 2009	15 Nov.	14 Jan. 98	Still open	-	-
7% 2007	15 Nov.	10 Apr. 96	30 Dec. 97	26	53
8% 2006	15 Mar.	5 Dec. 94	10 Apr. 96		70
5% 2005	15 Aug.	14 Jan. 97	Still open	18	18
7% 2004	15 Dec.	25 May 93	5 Dec. 94		74
8% 2003	15 May	2 Jan. 92	30 Dec. 93		69
6% 2002	15 Nov.	18 Jun. 96	Still open	10	30
8% 2001	15 Nov.	9 Jan. 95	18 Jun. 96		44
9% 2000	15 Nov.	2 Jan. 90	30 Dec. 92		59
6% 1999	10 Dec.	14 Apr. 94	2 Jul. 96[2]		49
9% 1998	15 Nov.	2 Jan. 89	31 Mar. 94[3]		46

Note: Excluding the holdings of the Ministry of Finance under the location-swap facility.

1) At the end of 1997.

2) There has been issue in 6% government bonds 1999 in 2 separate periods.

3) There has been issue in 9% government bonds 1998 in 2 separate periods.

The 6% government bonds 2002 (maturing on 15 November 2002) is currently the government's 5-year bond. Approximately DKK 10 billion has been issued in this series in 1997 and issue continues in 1998. In December 1997 market participants chose the 8% government bonds 2003 as the 5-year benchmark bond in the Danish market. Although this bond is no longer open for new issues, it was chosen as the replacement of the previous 5-year benchmark, 8% government bonds 2001. This reflects that market participants primarily focus on the size of an issue when determining a benchmark for a particular maturity segment.

On 14 January 1997 an 8-year bond, 5% government bonds 2005 (maturing on 15 August 2005), was opened. This was the first time an 8-year bond was issued. The new issue was opened in order to ensure an issue with a coupon in line with the interest-rate level at that time and to increase the overall flexibility of debt management. The due date in 2005 was chosen to ensure a smooth redemption profile for the government debt. The 8-year bond may become the 5-year benchmark in a few years' time when the remaining time to maturity is at a level of around 5-6 years.

The 10-year government bond has been the undisputed benchmark in the Danish bond market since 1991. The current 10-year benchmark,[1] 7% government bonds 2007 (maturing on 15 November 2007), has a size of DKK 53 billion. Issue in this series was discontinued at the end of 1997.

With the aim of introducing a new 10-year benchmark, 6% government bonds 2009 (maturing on 15 November 2009) was opened on 14 January 1998. Due to the relatively long period to maturity (approximately 11 3/4 years at opening) it is possible to create a large issue comparable to the size of issues in the most important European government-bond markets.

The 30-year government bond, 7% government bonds 2024 (maturing on 10 November 2024), was launched in 1994 to help increase the duration of the domestic debt. Although it is the intention to make this issue liquid in line with the general issue strategy, the issue period may be longer for this particular series due to the very long maturity. At the end of 1997, 7% government bonds 2024 had reached a volume of around DKK 24 billion. Issue in this series continues in 1998.

Treasury Notes

Treasury notes are shorter investments than bonds as their maturity on issue is normally around 1½-3 years. The Treasury notes outstanding at the beginning of 1998 are shown in Table 2.2.2.

On 7 January 1997 a new series of Treasury notes, 4.00% Treasury notes 2000 I (maturing on 15 February 2000), was opened. The issue was discontinued at the end of 1997.

A new series of Treasury notes, 4.00% Treasury notes 2001 I (maturing on 15 February 2001), was opened on 7 January 1998.

[1] The current benchmark is chosen by the Danish Securities Dealers Association. The benchmark is - among other things - used as the basis for futures and options, cf. Section 3.5.

Table 2.2.2. Treasury notes at the beginning of 1998. Nominal amounts.

DKK billion	Due date	First issued	Issue discontinued	Amount issued in 1997	Size of series[1]
4.00% 2001 I	15 Feb.	7 Jan. 98	Still open	-	-
4.00% 2000 I	15 Feb.	7 Jan. 97	30 Dec. 97	15	15
6.00% 1999 I	15 Feb.	2 Jul. 96	30 Dec. 97	3	13
7.00% 1998 I	15 Feb.	3 Jul. 95	2 Jul. 96		21

[1] At the end of 1997. Excluding holdings of the Ministry of Finance under the location-swap facility, cf. Section 4.6.

2.3. Treasury Bills

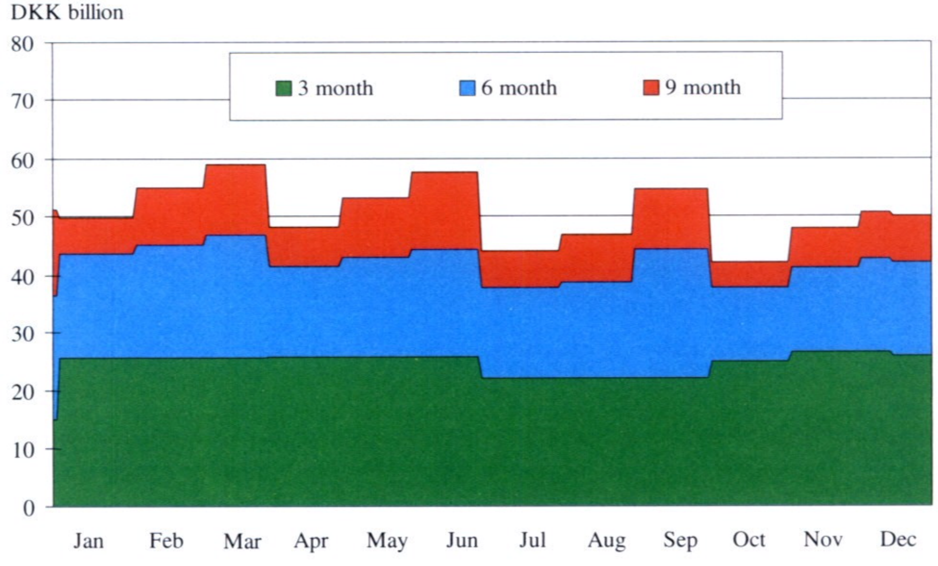
Treasury bills are zero-coupon securities issued in denominations of DKK 1 million in a regular programme.[1] The Treasury bills are sold at monthly auctions by Danmarks Nationalbank. There is no limitation to their transferability.

New Treasury-bill series with maturities of 9 months are opened at the beginning of February, May, August and November. New tranches of the series are issued at subsequent auctions, while the remaining time to maturity of the series decreases from 9 to 3 months. There is no issue of bills with a remaining time to maturity of less than 3 months. As a new series is opened every 3 months, the auction calendar implies that there are always 3 issues in the market. A Treasury-bill series normally reaches a size of DKK 25 billion at the end of the issue period.

The volume of Treasury bills was built up gradually in the beginning of the 1990s. In the past few years the outstanding volume has been relatively stable, and no major variations in the outstanding volume are expected in 1998. The outstanding volume in Treasury bills in 1997 is shown in Chart 2.3.1.

[1] The yield-calculation convention used is specified in Annex B.

Chart 2.3.1. Outstanding volume of Treasury bills, 1997.



2.4. The Tap-Issue Technique

All government bonds and Treasury notes are issued on tap. In this system the securities series are open for sale at all times within trading hours. Each series of government securities is thus issued over an extended period. All the tap-issued securities are fungible with the securities issued earlier in the same series.

The Daily Sale

Issue of government bonds and Treasury notes will normally take place by Danmarks Nationalbank offering an amount for sale in the Match System[1]. Typically DKK 100-200 million will be offered at a time. When the offer is placed in the system, securities dealers will buy larger or smaller portions of the offered amount. Often, the securities offered are sold to several different buyers. Thereafter a new amount may be offered. Usually very substantial amounts are sold, and the average daily issue in 1997 was around DKK 300 million.[2]

[1] The Match System is described in more detail in Chapter 3.

[2] It should be noted that issue took place on only about half of the trading days in 1997.

Government securities are normally not issued on days when prices are falling. Experience shows that on days with falling prices there will rarely be any real buyer interest in the bond market, and any significant issue is therefore not possible. Danmarks Nationalbank will therefore typically refrain from issuing government securities on days with low turnover and falling prices.

In order to avoid creating or amplifying negative trends in the bond market, Danmarks Nationalbank will usually not underbid itself in the market over a single day. For the offers placed in the Match System on a single day, each subsequent offer will thus be at the same or a marginally raised price. However, offers at a lower price cannot be excluded completely if there is a general downward shift in the market (e.g. as a consequence of falling bond markets abroad), which in reality creates a new market situation.

Danmarks Nationalbank will normally not underbid itself within a period of several days either. If securities have been issued at a particular price level on a given day, no issue will take place at lower prices on the days immediately thereafter, unless there is a general shift in the market level. The probability of a general shift in market conditions and thus of the issue being resumed at a new lower price level obviously increases with the length of the period considered.

The Use of the Copenhagen Stock Exchange

Danmarks Nationalbank acts as fiscal agent to the Ministry of Finance and all domestic government securities are sold to the market by Danmarks Nationalbank on behalf of the Ministry of Finance. The domestic government securities are sold via the Copenhagen Stock Exchange where Danmarks Nationalbank is a member. All members of the Copenhagen Stock Exchange can buy government bonds and Treasury notes from Danmarks Nationalbank in the trading systems of the Copenhagen Stock Exchange. The systems of the Copenhagen Stock Exchange are described in more detail in Chapter 3.

Danmarks Nationalbank issues most of the government bonds and notes via the Match System since it is very well suited for sale of large bond volumes, ensures all securities dealers equal access to buy the required amount of government securities, and ensures immediate spreading of market information concerning the issue of government securities.

The Accept System can on very rare occasions be used to issue small amounts of government securities.

Danmarks Nationalbank normally does not trade via telephone and will refer callers to the Match System. The Interest System, which is a trade-supporting system, and the Electro-Broker System, which is used by market makers, are not used by Danmarks Nationalbank.

On issue, bonds and notes have the same settlement period and payment terms as for other trading on the Danish securities market. The first coupon after issue is normal, and the ex-coupon period of 30 days applies on issue as well as for all other trading on the market. Issue prices are net prices, and no commission is paid.

2.5. Procedure on Opening New Issues

In order to ensure transparency and to give securities dealers a firm basis for trading in a newly issued series, a fixed framework for the opening procedure was established in 1994. This framework enables market participants to buy relatively large volumes at one single price on the opening day. The fixed framework for the opening of new series of government securities has generally been well-accepted by market participants.

One to two weeks before the opening day market participants are notified that a new government-securities series will be opened. Details are given of the characteristics of the loan, i.e. coupon, maturity, and interest-payment date, and of the date and time of opening. The time of opening is normally 11.00 a.m. It is also stated at what time further information will be made available. This would normally be at 9.00 a.m. on the morning of the opening day.

On the morning of the opening day, Danmarks Nationalbank announces the amount that will initially be offered in the Match System, as well as for how long that offer will remain in the system before (the rest of) the offer may be deleted - this period is normally half an hour. The maximum amount that will be sold on the opening day is also announced. These variables are fixed in the light of perception of investor interest, the market situation, and the borrowing requirement at the time of opening.

By announcing the size of the initial offer, market participants are informed of the market depth, i.e. the amount they can bid for at the initial price. The initial amounts offered have typically been DKK 1-2 billion. At the same time, the announcement of the maximum amount to be sold helps the market participants to estimate the supply on the opening day. It should, however, be emphasised that the announced maximum is indeed a maximum and not a target for the sale on the opening day. In 1997 and January 1998 the maximum amounts have ranged between DKK 3 and 6 billion.

The opening price is fixed immediately before the time of opening. It is based on a theoretical price calculation[1] as well as on the market situation and the perception of investor interest.

As a result of the opening method sales on the opening day have similarities with an auction-style sale.

2.6. Treasury-Bill Auctions

The auctions are held by Danmarks Nationalbank on the penultimate banking day of each month, with settlement on the first banking day of the following month (2 trading days is the normal settlement period for Danish Treasury bills, against 3 trading days for other securities). Bids may be submitted by entities authorised to trade on the Copenhagen Stock Exchange.

The auctions in January, April, July and October are settled on the redemption dates for maturing issues, i.e. the first banking day of February, May, August and November. As a consequence the amounts bid for, and the amounts sold, at these auctions are normally much larger than at the other auctions.

A new electronic auctioning system was introduced at the auction in December 1997, replacing the old system based on bids via telefax. Under the new system bids and the awarding of bids will be handled electronically. The switch to an electronic auctioning system implies that the time interval between bidding and the publication of the awards has been shortened from 2½ hours to 1 hour.

[1] Calculated from zero-coupon yield structures.

Annex B

Yield Calculation for Danish Government Securities

Treasury Notes and Government Bonds

Definitions and Conventions

- No odd first or last coupon
- Price/yield method is based on ISMA conventions
- 1 month = 30 days (European), 1 year = 360 days
- Calculation of accrued interest: see example below

Calculation of Accrued Interest

Danish government bonds and Treasury notes traded outside due dates are settled according to normal practice in the Danish bond market. These rules also apply on issue.

This means - in most of a coupon period - that bonds are issued on a cum-coupon basis, i.e. the buyer of the bond receives full payment of interest on the forthcoming due date. The seller (at issue: the government) is compensated for this by receiving accrued interest from the purchaser of the bond from the last coupon date to settlement of the trade. This also goes for a situation where the bond series was not open on the previous coupon date.

However, this rule does not apply when the bond enters the ex-coupon period 30 days before an interest-payment date. For bonds sold in this period the seller receives the full coupon payment on the next interest-payment date and the buyer is compensated (i.e. accrued interest is negative). In the period from 30 days before an interest-payment date to the actual interest-payment date, accrued interest is calculated backwards from the interest-payment date to the settlement date.

Example:

Issue: 7% government bonds 2007
Interest-payment date: 15 November
Maturity date: 15 November 2007
First issue date: 10 April 1996
Coupon: 7 per cent

Bond sold on 21 April 1998

```
  15 Nov.                        21 Apr.   24 Apr.                        15 Nov.
   1997                           1998      1998                           1998
     |<-------- 156 days -------->|<3 days>|<----------- 201 days ----------->|
-----|----------------------------|--------|----------------------------------|
     |                            |        |                                  |
   last                        trading   settle-                            next
  coupon                         date   ment date                          coupon
   date                                                                     date
```

The accrued interest for a bond sold on 21 April and settled on 24 April is:
$(159/360) \times 7\% = 3.09\%$.

Bond sold on 20 October 1998

The accrued interest for a bond sold on 20 October and settled on 23 October is: -(22/360) × 7% = -0.43%.

Yield Calculation
The yield, or yield to maturity, is found as the internal rate of return on the cash flow of the bond including the price paid, along with accrued interest. The specific calculation then depends on how the cash flow is laid out for different types of bonds.

The general formula is

$$(A.1)\quad P + A = \sum C_t \times (1+i)^{-(t-t_o)}$$

where i = Yield
P = Clean price paid on value date
A = Accrued interest
C_t = Payment due at time t
$t-t_0$ = Time from value date to time t.

Since 1991 government bonds and Treasury notes have been bullet issues characterised by a cash flow of identical coupons and one final redemption payment.

Zero-Coupon Treasury Bills

Treasury bills are zero-coupon securities issued in denominations of DKK 1 million. The official conversion from price to yield and vice versa takes place according to money-market practice, according to which the yield per day is calculated by dividing the capital gain up to the maturity date by the actual number of calendar days remaining. The annual yield is arrived at by multiplying the yield per day by 360:

$$(A.2)\qquad \text{Yield} = \frac{\text{1 mill. - price}}{\text{price}} \times \frac{360}{\text{actual number of days}}$$

Conversion from yield to price:

$$(A.3)\qquad \text{Price} = \frac{\text{1 mill.}}{1+\dfrac{\text{yield} \times \text{actual number of days}}{360}}$$

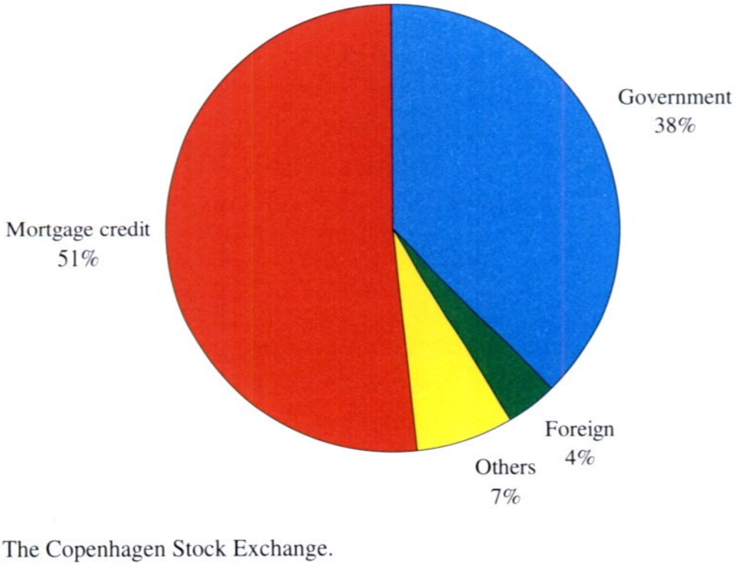
Chapter 3.
The Danish Securities Market

3.1. Bonds on the Danish Market

The Danish bond market is among the largest in Europe, with very large volumes of mortgage-credit bonds and government bonds. The market value of bonds and Treasury bills listed on the Copenhagen Stock Exchange was DKK 1,997 billion at the end of 1997. The market value of listed shares was DKK 775 billion.

The main reason for the composition of the Danish capital market - the large proportion of bonds in particular - is that in Denmark there is a long-standing tradition for financing residential and commercial construction as well as private housing by issuing mortgage-credit bonds. Mortgage-credit bonds account for the largest share of the Danish bond market, cf. Chart 3.1.1.

Chart 3.1.1. The Danish bond market at the end of 1997. Market value.



Source: The Copenhagen Stock Exchange.

Domestic corporate bond activity is negligible. Most of the short-term funding of the corporate sector is mediated by the banks, while long-term financing of tangible assets is often provided via mortgage-credit institutes.

In 1997, a historically low minimum coupon rate (cf. Box 2.2.1.) allowed for DKK-denominated issues with a 4 per cent coupon. These issues have for domestic taxation reasons been very attractive to private Danish investors. This has led to issuing activity from the mortgage-credit institutes, foreign issuers and government-backed companies or agencies, as well as the central government itself. At the end of 1997 the total outstanding in bonds with a 4 per cent coupon was DKK 95 billion at market value, equal to 5 per cent of the total market.

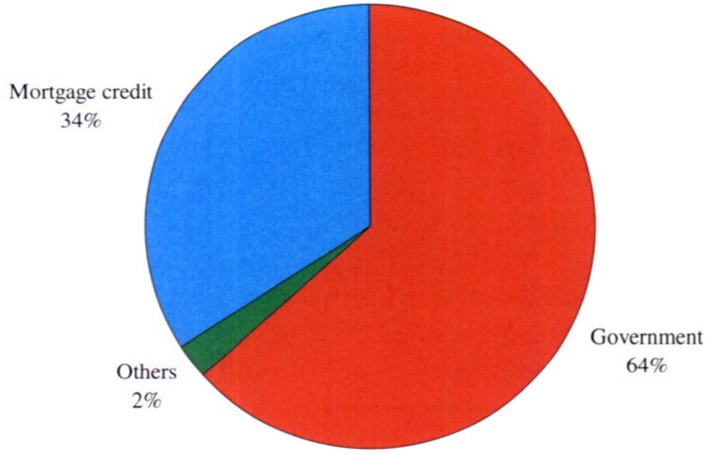
The listed foreign bonds (non-DKK-denominated) are mainly securities issued by mortgage-credit institutes in Sweden, denominated in SEK. There was substantial activity in these bonds some years ago, but in recent years the activity has been negligible.

In 1997 the average turnover per trading day on the Danish bond market was DKK 27 billion at nominal value (excluding repo trading), equal to the average daily turnover in 1996. In 1997 the average daily turnover in the repo market was DKK 90 billion.

Government bonds are the most traded segment of the market, cf. Chart 3.1.2. The market's 10-year benchmark in the first half of 1997, 8% government bonds 2006, was the most traded issue in 1997 with an average daily turnover of DKK 3 billion. The average daily turnover for the second most traded issue, 7% government bonds 2007, the 10-year benchmark in the second half of 1997, was slightly lower. The three most traded government bonds (8% government bonds 2006, 7% government bonds 2007 and 8% government bonds 2001) accounted for 29 per cent of the total turnover in 1997. The ten most traded government bonds accounted for 54 per cent of the total turnover.

The listed turnover figures are based on trades reported to the Copenhagen Stock Exchange. Danish government securities are, however, to some extent also traded outside Denmark, primarily in London. Trading outside Denmark between non-residents is not reported to the Copenhagen Stock Exchange; this turnover is therefore not included in the figures stated above.

Chart 3.1.2. Bond-market turnover in 1997. Nominal value.



Source: The Copenhagen Stock Exchange.

It should be mentioned that there are neither exchange restrictions nor taxes on Danish bonds purchased by foreign investors (including withholding tax and turnover tax).

Government Securities

The Danish central government has been a major bond issuer since the mid-1970s, when public finances began to show a deficit. The government securities have been short-term in the form of Treasury bills and Treasury notes, and medium-term and long-term in the form of government bonds with maturities of up to 30 years.

In recent years, government bonds and Treasury notes have been issued as bullet loans in a limited number of series. The series are generally very liquid. The market for government bonds, as well as their characteristics, is described in more detail in Chapters 1 and 2.

Mortgage-Credit Bonds

The mortgage-credit system is dominated by specialised mortgage-credit institutes which offer mortgages on residential as well as agricultural, commercial and industrial properties. The institutes finance long mortgages, typically for 20 to 30 years, by issuing mortgage-credit bonds with corresponding maturities. The total market for mortgage-credit bonds comprises around 2,200 different series of substantially varying sizes.

The mortgage-credit market currently comprises 8 institutes: Nykredit, Realkredit Danmark, BRFkredit, Totalkredit, Danske Kredit and Unikredit. FIH Realkredit A/S, which offers loans to finance industrial property, and Landsbankernes Reallånefond, which mainly offers loans for public housing, are also included in the mortgage-credit sector.

The first three are the oldest institutes, the next three were established more recently and are owned by banks. In recent years a number of these institutes have obtained a rating from one of the major credit-rating agencies on their most traded issues. The issues have been rated Aa2 or Aa3 by Moody's Investors Service. These ratings are 1-2 steps below Moody's rating of the Kingdom of Denmark's foreign-exchange-denominated issues (Aa1) and 2-3 steps below the rating of the Kingdom of Denmark's DKK-denominated issues (Aaa).

In addition to the mortgage-credit institutes there are a number of other bond-issuing institutions. Among these are: Danmarks Skibskreditfond (The Ship Credit Fund of Denmark), which grants loans against ship mortgages; Kreditforeningen af Kommuner i Danmark (The Credit Association of Local Authorities in Denmark), which mainly offers loans to municipalities, and Dansk Landbrugs Realkreditfond (The Mortgage-Credit Fund of Danish Agriculture), which issues bonds against secondary mortgages on agricultural property.

Several types of mortgage-credit bonds are issued, the most common being fixed-rate annuity bonds, but also fixed-rate serial bonds and index-linked bonds play a role. The bonds are issued in series normally kept open for 1 to 3 years, subject to the minimum-coupon-rate rule, cf. Chapter 2. Redemption payments are effected by lottery drawing of bonds for a nominal value corresponding to the payments due from the debtors. The mortgage-credit loans are typically callable at par value and the mortgage-credit bonds are called if the debtors redeem their loans. This may take place on coupon dates and at fairly short notice.

In recent years mortgage-credit loans with periodic adjustment of interest rates have found increasing use. These loans are based on the mortgage-credit institute's issue of an array of uncallable bullet loans with different maturities. The total outstanding in these bonds was DKK 30 billion at the end of 1997.

3.2. Overview of the Organisation of the Securities Market

The Danish securities market is organised as an integrated system comprising the Copenhagen Stock Exchange, the FUTOP Clearing Centre and the Danish Securities Centre. The institutions have integrated electronic systems provided by the Danish Securities Centre.

The Copenhagen Stock Exchange (Københavns Fondsbørs A/S) is the only stock exchange in Denmark and therefore the place where listed securities are traded and to which trades are reported. The Copenhagen Stock Exchange covers trading in securities as well as in futures and options.

The FUTOP Clearing Centre (FUTOP) is the agency which registers, settles and guarantees trading in futures and options. As from January 1997 FUTOP has been reorganised as a wholly-owned subsidiary of the Copenhagen Stock Exchange.

The Danish Securities Centre (Værdipapircentralen, VP) is a combined central securities depository and clearing centre. It also functions as facilities manager and systems integrator for the three institutions.

The Copenhagen Stock Exchange and Stockholm Stock Exchange in June 1997 signed a declaration of intent aiming at the creation of a common Nordic securities market, Nordic Exchanges. As a first step in this process a jointly-owned company under the name *NOREX* was established in the beginning of 1998. In connection with these initiatives the Copenhagen Stock Exchange will purchase the Swedish system for trading in shares known as SAX 2000. In order to support the creation of a common securities market, deliberations concerning future cooperation between the Danish Securities Centre and the Swedish Securities Centre (VPC) have also been initiated.

3.3. The Copenhagen Stock Exchange

Today, any credit institution or investment firm from an EU member state[1)] carrying a European Passport (licence from the financial supervisory authority of the company's home country) can become a member of

[1)] Or a country with which the EU has an agreement on such matters.

and trade securities on the Copenhagen Stock Exchange. No physical presence is required. Companies from other countries may participate through branches established in Denmark, provided that they obtain a licence from the Financial Supervisory Authority.

The Copenhagen Stock Exchange is organised as a limited liability company with 60 per cent of the shares being held by the traders, 20 per cent by the bond issuers[1] and 20 per cent by the share issuers.

At the beginning of 1998 a total of 29 institutions (including branches of foreign companies) were entitled to trade as securities dealers on the Copenhagen Stock Exchange, of which three were not active. The 26 institutions which are active on the stock exchange are distributed as follows: 21 banks, 4 stockbroking companies and Danmarks Nationalbank.

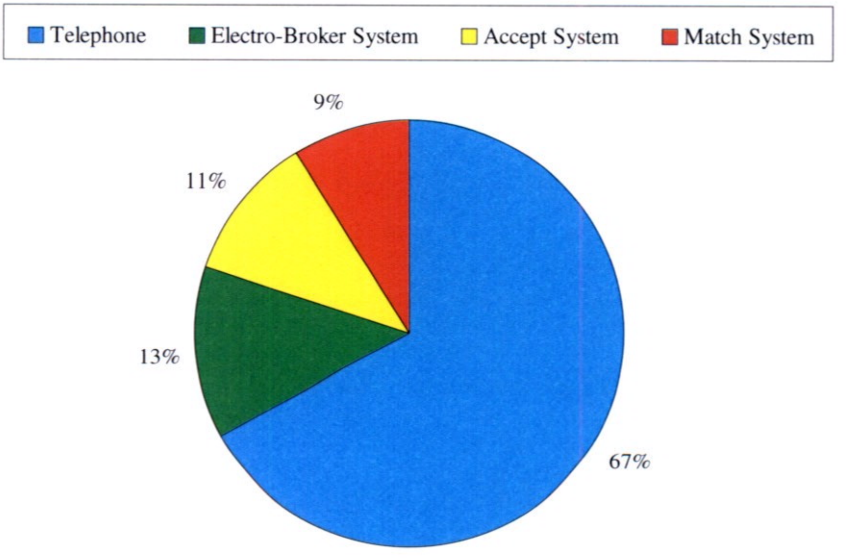
Trading of securities is not required to take place on the Copenhagen Stock Exchange, and prices and fees are set by competition. Large investors usually trade with securities dealers on a net basis, reflecting professional price spreads. Round lots of liquid government issues and mortgage-credit issues would normally have a bid-offer spread of DKK 0.10 per 100 (10 ticks) or less vis-à-vis clients.

In 1987 the trading floor was abolished and an electronic system was introduced. This system enables continuous trading from 9.00 a.m. to 5.00 p.m. and is used by the members from their offices.

Trades can be executed electronically in one of three trading systems: the *Match System*, the *Accept System*, or the *Electro-Broker System*. To support trading outside these electronic systems, a trade-supporting system called the *Interest System* has been established. Information is published in the *Information System*. This information is fed automatically from the trading systems, but trades by members of the stock exchange outside the systems must be reported to the *Reporting System*. The distribution of bond trading by systems used is shown in Chart 3.3.1., and the systems are described in Box 3.3.1. The Match System is predominantly used by Danmarks Nationalbank.

[1] Danmarks Nationalbank (as a trader as well as representing the Ministry of Finance as a bond issuer) has chosen not to become a shareholder of the Copenhagen Stock Exchange.

Chart 3.3.1. Bond trading on the Copenhagen Stock Exchange. Nominal value.



Normal settlement of trading in bonds and notes takes place 3 business days after the transaction. Other settlement periods than standard may be used, should the parties to a trade so wish. For each trading day the Copenhagen Stock Exchange publishes an official quotation list with information on quoted prices, turnover and other relevant information concerning the market on the preceding day.

Further information about the Copenhagen Stock Exchange can be obtained on the Internet: www.xcse.dk.

Box 3.3.1. The trading systems of the Copenhagen Stock Exchange.

The Match System is an automatic trading system with continuous matching. A match is made every time a bid or an offer is registered which is better than or equals one or more offers or bids already registered in the system. At any point in time, only the best bid/offer and the identification of the relevant securities dealer can be seen on the screen in the Match System. It is possible to trade smaller sections of the existing bids/offers. The transactions are executed automatically. The bids and offers must be in round lots of DKK 5 million. All trades, as well as the best bid and offer in each paper, are reported to the Information System automatically.

The Accept System functions as an electronic "noticeboard" on which securities dealers can see all the bids and offers placed (prices as well as amounts) and the identity of the securities dealer making the bid/offer. A transaction is concluded when a dealer accepts one of the bids or offers posted in the system (the total amount of the bid/offer must be accepted). The bids and offers must be in round lots of at least DKK 10,000. All trades, as well as all current bids and offers, are automatically reported to the Information System.

The Electro-Broker System functions in the same way as the Accept System, but it is not possible to see the identity of the securities dealer making the bid/offer. The Electro-Broker System can only be used by securities dealers participating in a market-making agreement, cf. Section 3.4., and the participants can only trade in the securities in which they are market makers. Bids and offers must be of at least DKK 25 million. Only ultra-liquid securities can be traded in the Electro-Broker System. All trades are reported to the Information System automatically.

The Interest System is a trade-supporting system and has been established in order to allow the members of the Copenhagen Stock Exchange to exchange information electronically. It is normally used to indicate the prices at which the members are willing to trade via telephone. It is also used for quoting market-making prices in the 10-year benchmark, cf. Section 3.4.

The Information System distributes information on bids, offers and deals made via the electronic systems, as well as deals reported to the system. The information is distributed on-line to the participants and to non-members linked to this system.

The Reporting System is a system to register deals made outside the trading systems (telephone trading). All securities dealers are obliged to report transactions in listed securities within 90 seconds during trading hours. Trades made outside normal trading hours must be reported before the trading systems open on the following trading day. Trades in excess of DKK 200 million fall under the block trading rules and must thus only be reported within 20 minutes.

3.4. Market-Making

Government Securities

There are two market-making arrangements for Danish government securities: the Voluntary Market-Making Agreement under the auspices of the Copenhagen Stock Exchange, and the Quote-on-Request Agreement under the auspices of the Danish Securities Dealers Association.

Market-making under the Voluntary Market-Making Agreement includes only the 10-year benchmark bond, currently 7% government bonds 2007. At the start of 1998 15 securities dealers participated in the agreement, with amounts varying between DKK 25 and 50 million. Securities dealers participating in this agreement are obliged to quote two-way prices with a maximum spread of DKK 0.10 per 100 (10 ticks) in the Interest System of the Copenhagen Stock Exchange. All members of the Copenhagen Stock Exchange can join the Voluntary Market-Making Agreement.

The Quote-on-Request Agreement covers all liquid government securities (as well as some mortgage-credit bonds, cf. the Section below), except the 10-year benchmark bond already covered by the Voluntary Market-Making Agreement. Participants can freely choose the bonds in which they wish to participate.

Securities dealers participating in the Quote-on-Request Agreement shall - on request - quote two-way prices with a maximum spread of 10 ticks[1)] to other participants for amounts of between DKK 10 and 100 million. At the beginning of 1998 the 15 securities dealers participating in the Voluntary Market-Making Agreement also participated in the Quote-on-Request Agreement for government bonds. The Quote-on-Request Agreement can be joined by members of the Danish Securities Dealers Association who are also members of the Copenhagen Stock Exchange.

Mortgage-Credit Bonds

The Quote-on-Request Agreement described above also covers a selection of mortgage-credit bonds. This agreement has the same rules and

1) Most participants have agreed on tighter spreads for shorter maturities: 5 ticks for bonds with a remaining time to maturity of 1 year or less, 6 ticks for bonds with a remaining time to maturity between 1 and 2 years, 8 ticks for bonds with a remaining time to maturity between 2 and 3 years and 10 ticks for bonds with a remaining time to maturity of 10 years.

characteristics as the Quote-on-Request Agreement for government bonds.

Bonds with identical characteristics but issued by different mortgage-credit institutes are traded as a single instrument under the market-making agreement, and the seller may choose a mortgage-credit bond from any of the six mortgage-credit institutes.

At the beginning of 1998 15 securities dealers participated in the Quote-on-Request Agreement for mortgage-credit bonds in lots varying between DKK 10 and 25 million.

3.5. FUTOP and Derivatives

The primary function of the FUTOP Clearing Centre is to guarantee the performance of clearing members by registering options and futures contracts until expiry. The Copenhagen Stock Exchange is the official trading place for futures and options on securities listed on the Copenhagen Stock Exchange, including futures and options on government bonds. As from January 1997 FUTOP is a wholly-owned subsidiary of the Copenhagen Stock Exchange.

FUTOP currently has futures on the 5- and 10-year benchmark government bonds, 6% 2026 mortgage-credit bonds, 7% 2029 mortgage-credit bonds, 3-month CIBOR and KFX (a share index of the Copenhagen Stock Exchange) and a selection of liquid shares. FUTOP currently has options on the 10-year benchmark government bond, KFX and a selection of liquid shares.

Futures are marked to market daily; occasionally more than once a day. Margin may be posted in cash during the trading day or by pledging securities on a day-to-day basis. All margin accounts are held with Danmarks Nationalbank. Futures and options on government bonds feature physical delivery of the underlying asset on expiration. Danish options and futures contracts are non-terminable, but may be closed-out (liquidated) via the member with whom the original contract was concluded.

Two market-making agreements exist. Under the auspices of the FUTOP Clearing Centre a Specialised Market-Maker Agreement for all the listed contracts has been arranged in the Accept System of the Copenhagen Stock Exchange. The other market-making agreement is a Quote-on-Request Agreement under the auspices of the Danish Securities Dealers Association. This agreement only covers futures based on the 10-year benchmark government bond and the benchmark mortgage-credit bond.

In 1997 73 per cent of the total turnover in the Danish futures market (market value) was in instruments based on the 5- and 10-year benchmark government bonds. Compared to other futures markets in Europe, the turnover on the Danish futures and options market is small compared to the market for the underlying bonds. The turnover in futures on the 10-year government benchmark bond amounted to 11 per cent of the turnover in the underlying instrument in 1997. The efficient trading arrangements on the cash market are one of the reasons for the relatively low turnover on the futures market. Another element is a well-functioning OTC market in forward contracts and options.

3.6. The Danish Securities Centre

The Danish Securities Centre (Værdipapircentralen, VP) is a combined central securities depository and clearing centre. VP is responsible for clearing and settlement of securities trades, for registration of issues on the Copenhagen Stock Exchange and for registration of ownership and other rights to the securities listed on the Copenhagen Stock Exchange. VP has slightly less than 200 participants (banks, savings banks, stock-broking companies, mortgage-credit institutes, institutional investors and Danmarks Nationalbank) of which around 100 participate directly in the clearing process.

Payments are cleared through Danmarks Nationalbank and settled via authorised institutions' accounts with Danmarks Nationalbank. As from 1996, any credit institution or investment firm from an EU member state carrying a European Passport (licence from the financial supervisory authority of the company's home country) may apply for a settlement account with Danmarks Nationalbank. Companies from other countries may participate through branches established in Denmark.

Since 1983, all listed domestic Danish bonds have been registered in dematerialised form in the VP system. In 1988 Danish shares, investment certificates, etc. were dematerialised. From 1989, registration of securities denominated in foreign currency and listed on the Copenhagen Stock Exchange has been possible (with settlement in foreign currency).

The securities are registered in units of equal size (DKK 1,000 for most government securities) on VP accounts. Only VP's participants may keep VP accounts, and each participant keeps a number of VP accounts, each of which is normally earmarked for a specific investor, in addition to a VP account for its own holdings. Each VP account contains information specifying the holdings, ownership and other rights, and details a bank account to which VP transfers payments of interest, dividend, etc. on the holdings with VP. The owner of the securities may be registered in his own name or in the name of a nominee. The latter registration implies that the name of the actual owner of the securities is known only to the nominee.

The information registered by VP is safeguarded by strict secrecy and safety measures as the VP computer system is the sole registration of ownership and other legal rights to bonds and shares.

Normal settlement of trading takes place 3 business days after the trading day, but other periods (longer as well as shorter) may be chosen. In October 1996 VP has implemented a new system entailing repeated overnight clearing and settlement cycles as well as a daylight settlement cycle, all of which involve the netting of participants' securities and cash positions. The settlement guarantees delivery versus payment and is final and irreversible at the point of settlement.

Cross-Border Settlement

Danish government securities are eligible for clearing and settlement via Euroclear and CEDEL and it is also possible to deposit bond holdings in these systems as well as in VP.

To simplify international trading and cross-border settlement of Danish securities VP has established a direct link with Euroclear. One of the aims of the new VP system, implemented in October 1996, has been to increase the effectiveness of the link and enable same-day transfers of securities between VP and Euroclear, thereby providing for back-to-back trades. The link between Euroclear and VP has made the location-swap facility offered by Danmarks Nationalbank redundant, and the facility has therefore been terminated as of 1 April 1998[1].

[1] Until 1 April 1998, Danmarks Nationalbank offered a temporary location-swap facility for government securities. The facility enabled movement of securities between VP and Euroclear to take place without a loss of disposal days. The link between VP and Euroclear offers the same function.

3.7. The Money Market

In order to give an integrated picture of the Danish market, it should be mentioned that Denmark has an efficient and liquid money market. Participants in the Danish money market are, besides Danmarks Nationalbank, Danish banks, Danish branches of foreign banks and two money-market brokers.

The money market has evolved strongly in the past few years and there is now efficient and liquid trading in a range of instruments. The main instruments are repos, FRAs and FX swaps.

As an element of the monetary-policy instruments it is possible for Danish banks, including Danish branches of foreign banks, to enter into repurchase agreements (sale and repurchase agreements) with Danmarks Nationalbank.[1] All liquid government securities may be pledged in the repos. Danmarks Nationalbank's repo facility has contributed to the development of an organised market in repos, and this market is today significant. In addition to repos there is also a market for deposits and active organised market trading in FRAs and FX swaps.

[1] See Danmarks Nationalbank's Report and Accounts, as well as the quarterly Monetary Review, for a further description of the Danish monetary-policy instruments.

Chapter 4.
Foreign Borrowing by the Kingdom of Denmark

4.1. General Framework

The main objective of the Kingdom of Denmark's net borrowing in foreign currencies is to ensure an adequate Danish foreign-exchange reserve. This implies that redemptions of the foreign debt should be matched by foreign borrowing, as specified in the central-government borrowing norm, cf. Box 1.1.1.

Net foreign borrowing was 0 at market value in 1997. The Kingdom of Denmark's medium- and long-term borrowing in foreign currencies was DKK 36 billion at market value. Redemptions of the medium- and long-term debt were DKK 25 billion at market value. Net redemption of short-term debt in foreign currencies was DKK 11 billion.

In 1998 the revenue from the central government's sale of shares in Tele Danmark to the American corporation Ameritech, equivalent to DKK 21 billion, will be used towards a reduction of the foreign debt. With redemptions of DKK 36 billion in 1998, the foreign borrowing requirement is thus expected to be DKK 15 billion. It is the intention to spread new foreign borrowing over the course of 1998.

Section 4.2. describes the borrowing and debt-management instruments used by the Kingdom of Denmark. Section 4.3. describes the borrowing activity in 1997 and the outlook for 1998. The risk management relating to the Kingdom of Denmark's foreign debt is described in section 4.4. Section 4.5. describes the coordinated management of the currency risk on the central government's foreign debt and Danmarks Nationalbank's foreign-exchange reserve. Finally, Section 4.6. describes the changes envisaged in the administration of the foreign debt after the commencement of EMU.

4.2. Borrowing and Debt Management

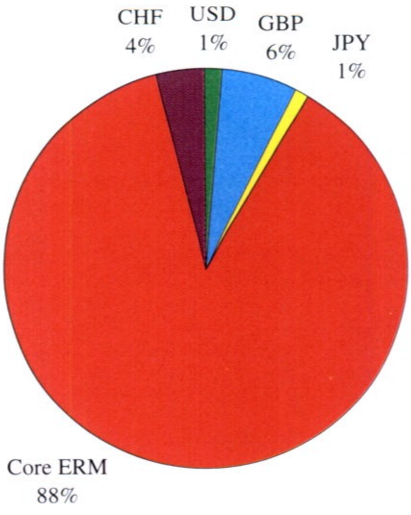
The Kingdom of Denmark issues debt in a wide range of currencies, maturities and structures, and it does so in a variety of markets and legal environments.

When the Kingdom of Denmark issues foreign debt the proceeds from the transaction are sold to Danmarks Nationalbank and the corresponding amount in DKK is credited to the government's account with the Nationalbank. Similarly, funds needed by the Kingdom of Denmark for redemptions are bought from the Nationalbank against a corresponding debiting of the government's account with the Nationalbank (in DKK).

According to the Maastricht Treaty, the central government is prohibited from borrowing from the central bank. This implies that the government's account with Danmarks Nationalbank may not show an overdraft. Net redemptions on the central government's foreign debt may only be undertaken if there are sufficient funds on the central government's account with the Nationalbank. In 1997 it has thus not been possible to reduce the foreign debt in spite of a large currency reserve, cf. Chart 4.5.1.

Within the framework used to manage the currency distribution of the net foreign-asset position, cf. Section 4.5., there has been increasing focus on the currency distribution of the gross foreign debt. Since the core ERM currencies are considered to carry the lowest exchange-rate risk vis-à-vis DKK, a significant share of the gross foreign debt is denominated in these currencies, cf. Chart 4.2.1. In order to maintain the desired currency distribution of the foreign debt the Kingdom of Denmark will normally swap all payments into DEM when issuing in a non-ERM currency.

Chart 4.2.1. Currency distribution of the gross foreign debt after swaps. End of 1997.



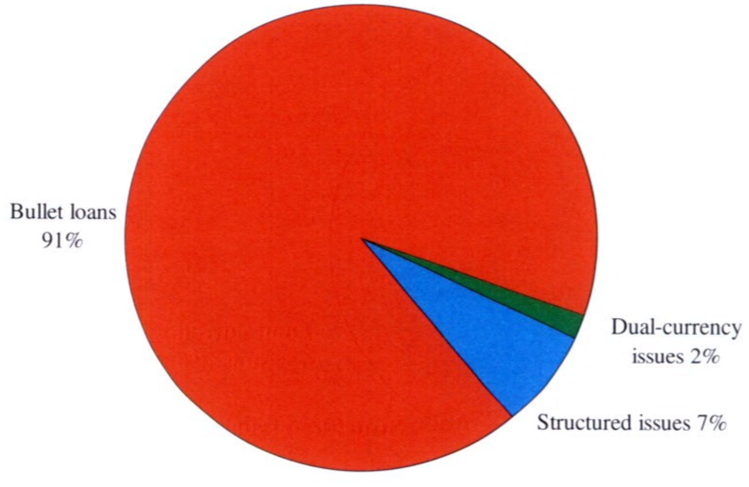
Medium-Term and Long-Term Borrowing

For a number of years the Kingdom of Denmark has pursued a double-tracked borrowing strategy. A target for advantageous borrowing is fixed in terms of a sub-LIBOR level and conveyed to the banks. The target reflects the preferences of the Kingdom of Denmark with regard to the different maturities, as well as the actual opportunities in the different maturity segments. To the extent that advantageous borrowing opportunities do not provide the necessary funds the Kingdom of Denmark will, from time to time, be in the market for normal bond issues. The Kingdom of Denmark is not in principle opposed to negotiated deals but would normally in this situation make use of competitive bidding between invited investment banks.

In 1994 the Kingdom of Denmark established an EMTN (Euro Medium-Term Note) programme which has facilitated the documentation of transactions, making it possible to accept small, attractive transactions without incurring prohibitive documentation costs. The limit for the total outstanding under the EMTN programme was expanded in 1997 to USD 15 billion. A dealer group has been appointed for the programme, but other dealers may be appointed as dealer-for-a-day for a specific issue.

In recent years there has been a tendency to use normal bond issues to a greater extent than previously. In addition, the structured issues have been more simple. The distribution by instrument of medium- and long-term foreign borrowing for 1997 is shown in Chart 4.2.2.

Chart 4.2.2. Medium- and long-term borrowing in 1997 by instrument.



Short-Term Borrowing

The Kingdom of Denmark uses short-term Commercial-Paper programmes as a temporary financing instrument for 3 different purposes:

1) to raise funds for the foreign-exchange reserve in relation to the Nationalbank's interventions in the foreign-exchange market;
2) to act as a buffer for the medium- and long-term borrowing in order for the Kingdom of Denmark to be able to pick up advantageous offers when they appear; and
3) to maintain an adequate balance on the government's account with Danmarks Nationalbank.

Two CP programmes have been set up for the purpose of short-term borrowing: one in the US market (SN: Sovereign Notes) and one in the

Euromarket (ECP: Euro Commercial Paper). At present each programme has a limit of USD 6 billion or the equivalent amount. ECPs are primarily issued in DEM or USD.

Swap Activity

Currency and interest-rate swaps are frequently used by the Kingdom of Denmark in debt management. Currency swaps are normally carried out as an integrated part of borrowing transactions, but could also be used as secondary swaps in connection with changes in the desired currency composition of the portfolio. The same applies to the Kingdom of Denmark's use of interest-rate swaps. The Kingdom of Denmark has entered into ISDA master agreements with all its counterparties and expects new counterparties to do so as well.

The Kingdom of Denmark uses a counterparty limit system in order to control its credit risk on swaps.[1)] Credit risk on swaps is composed of actual risk, which reflects the current market value of a swap, and potential risk, which reflects the future market value of a swap. In order to reflect the differences in potential risk depending on the structure of the swap, the counterparty limit system is based on a credit-risk classification of the swap portfolio. This classification can be seen as a conservative version of the standards set by the Bank for International Settlements, BIS. Interest-rate swaps carry the lowest risks whereas strongly structured currency swaps are deemed to carry the highest risk, cf. Table 4.2.1.

Buy-Backs

Buy-backs are actively used by the Kingdom of Denmark and are usually profit-driven. The issues bought back are usually not re-issued and they are therefore cancelled after the purchase.

1) Counterparties are assigned limits according to their credit rating. The Kingdom of Denmark in principle accepts all counterparties rated in at least the double A category by Standard & Poor's, Fitch-IBCA and Moody's.

Table 4.2.1. The Kingdom of Denmark's swap portfolio by risk classification.

Risk classification	Number of swaps	Principal	Credit exposure
		DKK billion	
Interest-rate swaps	87	67.4	2.1
EMS-currency swaps	18	19.4	1.5
Other currency swaps	56	44.7	8.5
Weakly structured interest-rate swaps	4	2.4	0.5
Weakly structured currency swaps	5	1.1	0.2
Strongly structured currency swaps	4	0.3	0.9
Total	174	135.4	13.8

4.3. Borrowing in 1997 and Outlook for 1998

In 1997 redemptions of medium- and long-term loans amounted to DKK 24.4 billion at nominal value. Net redemptions on CPs amounted to DKK 10.8 billion at nominal value, cf. Table 4.3.1., while DKK 36.0 billion was raised by medium- and long-term borrowing. Net borrowing of DKK 0.8 billion at nominal value, together with fluctuations in exchange rates, led to an increase in the foreign debt by DKK 2.1 billion.

Table 4.3.1. Central-government foreign borrowing and debt. Nominal value.

DKK billion	Commercial Paper, net	Medium- and long-term borrowing: Funding	Medium- and long-term borrowing: Redemptions[1]	Net borrowing	Exchange-rate adjustment	Debt[2]
1994	-24.9	7.5	13.7	-31.0	-3.5	129.8
1995	-0.5	13.7	32.3	-19.1	-5.1	105.6
1996	11.7	16.7	32.1	-3.7	-0.4	101.5
1997,1	-2.9	8.1	5.0	0.2	0.5	102.2
1997,2	-7.6	9.6	1.6	0.4	0.7	103.3
1997,3	-0.3	12.9	12.6	0.0	0.1	103.4
1997,4	0.0	5.4	5.2	0.2	0.0	103.6
1997	-10.8	36.0	24.4	0.8	1.3	103.6

[1] Including buy-backs and early repayments.
[2] Adjusted for buy-backs.

In 1998 total redemptions of the foreign debt amount to DKK 36 billion. It has been decided that the revenue from the central government's sale of shares in Tele Danmark to Ameritech, equal to DKK 21 billion, should be used to reduce the central government's debt in foreign currencies. Consequently the foreign borrowing requirement for 1998 will be DKK 15 billion.

4.4. Risk Management of the Foreign Debt

The objective for the administration of the central government's foreign debt is to minimise the long-term borrowing costs weighed against the risks implied by the borrowing strategy.

The most important types of risk relating to the central government's foreign debt are interest-rate risk, credit risk and currency risk.

The *currency risk* on the debt is managed in coordination with the currency risk on the foreign-exchange reserve held by Danmarks Nationalbank. This framework is described in further detail in Section 4.5.

The *credit risk* on the foreign debt relates to the Kingdom of Denmark's potential losses on swap counterparties. The management of credit risk is handled in the swap-counterparty limit system described in Section 4.2.

The *interest-rate risk* can be divided into the market risk and the refinancing risk. The *market risk* relates to changes in interest rates and is measured by the duration of the foreign debt. At the end of 1997 the duration of the foreign debt was 2.3 years, cf. Chart 4.4.1.

Although the currency risk of the debt is managed in coordination with the currency risk of the foreign-exchange reserve, there is no direct coordination between the liabilities of the Kingdom of Denmark and the assets of Danmarks Nationalbank with regard to interest-rate risk. However, as marginal foreign liabilities and marginal foreign assets are required to have a short duration, it is ensured that neither the interest-rate risk of the government and the Nationalbank, nor the interest-rate risk of the two institutions taken together, is significantly affected by government borrowing to finance currency intervention or to prevent an overdraft on the government's account with the Nationalbank.

The *refinancing risk* relates to a rise in the Kingdom of Denmark's borrowing costs relative to the general level of interest rates. The refinancing risk is managed by aiming at a smooth redemption profile, cf.

Chart 4.4.2. This ensures that the refinancing requirement in a particular year does not constitute an excessive share of the foreign debt.

Chart 4.4.1. Duration of the foreign debt 1991-1997. End of year.

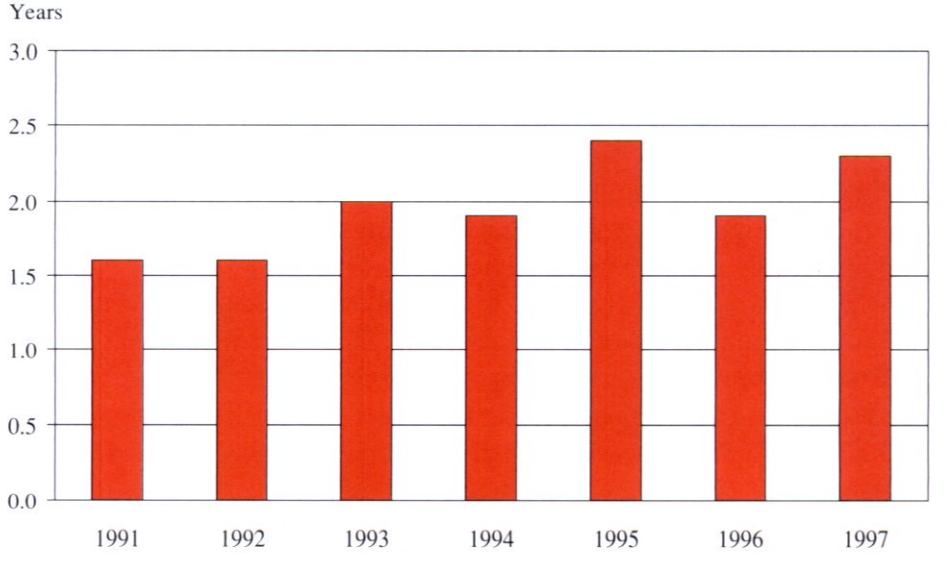
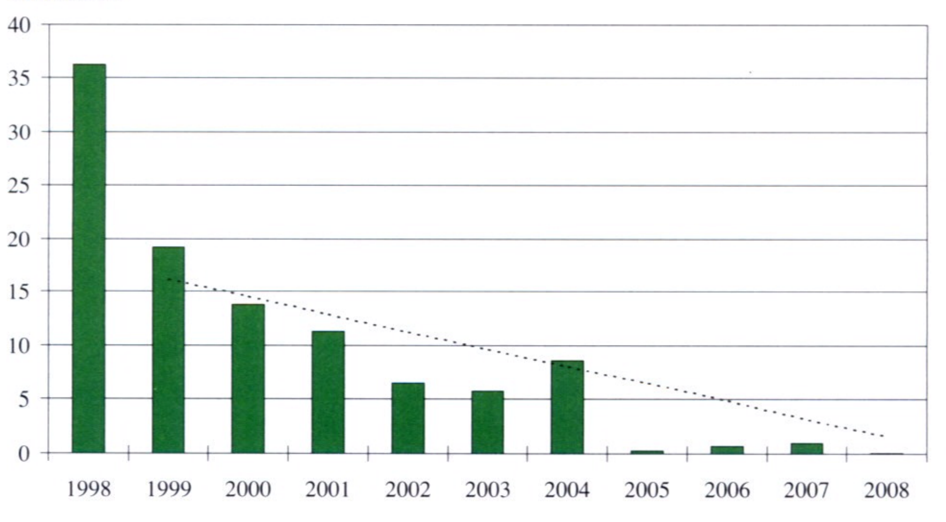


Chart 4.4.2. Redemption profile of the foreign debt. End of 1997.



4.5. Management of Currency Risk

The foreign debt of the Kingdom of Denmark and the foreign-exchange reserve are managed within a coordinated framework which provides for an integrated approach to asset-liability management. The management of currency risk is focused on the net foreign position, which is the gross foreign debt and the foreign-exchange reserve taken as one. The framework was set up in 1992 and is based on the following arguments:

- The purpose of the Kingdom of Denmark's borrowing in foreign currencies is to maintain an adequate foreign-exchange reserve at Danmarks Nationalbank.
- A major part of the profit of Danmarks Nationalbank, which to a significant extent is derived from the foreign-exchange reserve, is transferred to the central government.

Chart 4.5.1. shows that the net foreign position of the Kingdom of Denmark has changed from a net foreign debt to net foreign assets in the course of 1997. In January 1998 the net foreign assets were increased by some DKK 21 billion, since the Kingdom of Denmark sold its ownership interest in Tele Danmark to Ameritech.

The net foreign assets are managed via the use of a benchmark. The benchmark for the net currency distribution is agreed upon by the Ministry of Finance, the Ministry of Economic Affairs and Danmarks Nationalbank on a quarterly basis[1]. The benchmark is a portfolio consisting of assets and liabilities in USD, ERM[2], JPY, GBP and CHF. The distribution of currencies in the benchmark reflects the trade-off between the currency risk and the expected return. The expected return is the sum of the interest payments and losses/gains on exchange-rate fluctuations.

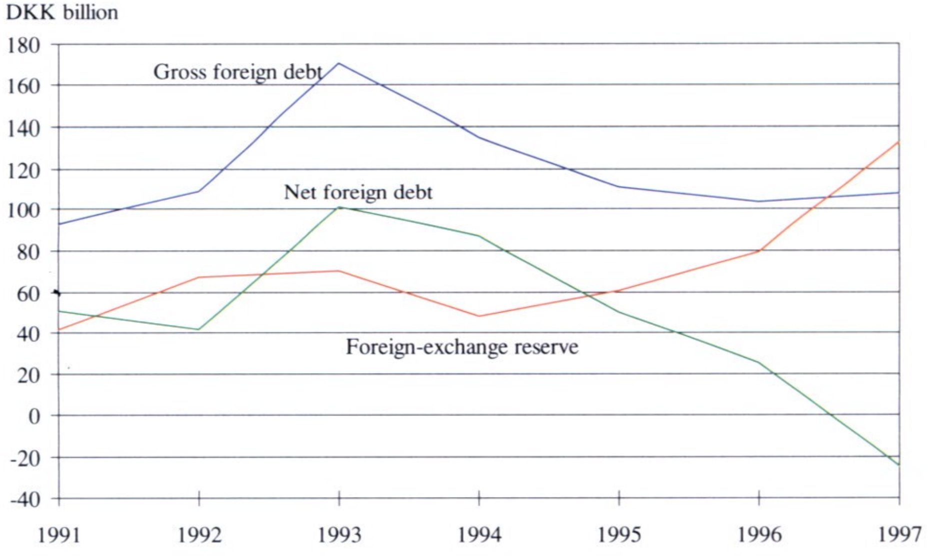
The benchmark consists of a so-called risk-minimising portfolio and certain strategic deviations from this risk-minimising portfolio. The Danish exchange-rate policy aims to stabilise the krone vis-à-vis the core ERM currencies. Consequently the risk-minimising portfolio is composed of assets and liabilities denominated in ERM currencies. The losses and gains stemming from exchange-rate fluctuations can be seen as the sum of a general contribution from the exchange-rate fluctuations

[1] A mean-variance portfolio model is used in the considerations leading to the setting of the benchmark.

[2] In this context ERM means DEM, FRF, NLG, BEF and XEU.

versus the risk-minimising portfolio and a specific contribution from the exchange-rate fluctuations of the risk-minimising portfolio versus DKK.

Chart 4.5.1. Distribution of the net foreign debt 1991-1997. End of year.



The benchmark is made up as an absolute distribution in billion DKK, the residual being the core ERM currencies. Changes in the net assets take place in the core ERM currencies. The general currency risk does therefore not change when the net assets change as the core ERM currencies are considered a risk-minimising portfolio. In practice, the DEM will be seen as the risk-minimising currency due to its status as the anchor currency of the ERM.

The benchmarks for 1997 and the beginning of 1998 are shown in Table 4.5.2.

Table 4.5.2. Benchmark for the net foreign debt. DKK billion.

	USD	JPY	GBP	CHF	ERM
1997, 1st qrt. to 4th. qrt.	-2.0	2.5	1.0	2.0	Rest
1998, 1st qrt	-2.0	2.5	1.0	2.0	Rest

Danmarks Nationalbank may take positions against the benchmark within a limit of DKK 2.5 billion in each currency. The performance of these positions is measured regularly against the benchmark. In 1997 the performance was postive by 179 million DKK, which mainly can be attributed to the asset position in USD.

4.6. Consequences of EMU for the Administration of the Foreign Debt

In connection with the Edinburgh agreement the Danish government has informed the other EU member states that Denmark will not participate in the third stage of the EU Economic and Monetary Union, EMU. The start of the EMU on 1 January 1999 is therefore not expected to imply any significant changes in the administration of the foreign debt.

After the start of the EMU, Denmark will pursue a stable exchange-rate policy within the projected ERM2. Consequently the benchmark used to manage the net foreign-asset position will be based on the euro as the risk-minimising currency instead of the core ERM currencies.

The Kingdom of Denmark's gross foreign debt is primarily denominated in core ERM currencies. Except for the 1:1 conversion of XEU-denominated debt into euro, there are no plans at present to undertake early redenomination to euro of this part of the debt. This is due to the borrowing strategy described in Section 4.2., which implies that the costs of redenomination are not outweighed by the advantages.

Debt denominated in ERM currencies will effectively be considered as euro debt after January 1999. Furthermore, the major part of new borrowing will be undertaken in euro or swapped into euro. Due to the relatively limited borrowing requirement in the coming years, the Kingdom of Denmark does not intend to alter its present borrowing strategy.

Appendix

Table 1.

Central-Government Debt 1987-1997.

DKK million	1987	1988	1989
A. Debt			
I. Domestic debt denominated in DKK[1]			
1. Fixed-rate bonds	243,212	215,492	221,592
Floating-rate bonds	56,935	82,785	88,410
2. Lottery bonds	1,200	1,200	1,200
3. Compulsory savings	1,464	1,425	1,375
4. Treasury notes	43,675	54,085	64,550
5. Treasury bills	-	-	-
6. Government securities held by the Danish State	-21	-18	-11
Domestic debt denominated in DKK, total	346,465	354,969	377,116
II. Domestic debt denominated in XEU[2]			
1. Fixed-rate bonds	-	-	-
2. Government securities held by the Danish State	-	-	-
Domestic debt, total	346,465	354,969	377,116
III. Foreign debt			
1. In USD	44,637	32,983	27,624
2. In CHF	16,572	20,452	17,919
3. In DEM	26,799	29,374	30,034
4. In XEU	10,191	14,480	16,970
5. In JPY	13,781	12,718	10,156
6. In other currencies	15,657	14,326	13,328
7. Government bonds held by the Danish State[3]	-1,516	-1,569	-1,574
Foreign debt, total	126,121	122,764	114,457
Domestic and foreign debt, total	472,586	477,733	491,573
Domestic and foreign debt, per cent of GDP	67.5	65.3	64.1
B. Government deposits with the central bank	-57,960	-39,855	-35,254
C. The Social Pension Fund			
1. Government securities	-27,667	-27,009	-30,212
2. Other securities	-73,091	-79,215	-81,164
The Social Pension Fund, total	-100,758	-106,224	-111,376
Net government debt (A-B-C)	313,868	331,654	344,943
Net government debt, per cent of GDP	44.8	45.3	45.0

Note: + denotes liabilities, - denotes assets.

[1] Does not include the holdings of the Ministry of Finance under the location-swap facility.

[2] In connection with the introduction of new accounting principles for the government debt, the 8.5% ECU bullet loan 2002 has been reclassified as foreign debt instead of domestic debt as of 1 January 1998.

1990	1991	1992	1993	1994	1995	1996	1997
229,221	252,481	316,690	357,346	409,565	466,608	516,812	556,874
85,010	85,010	57,147	41,241	30,345	20,722	16,760	9,848
1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
864	392	-	-	-	-	-	-
68,850	74,050	71,150	94,200	111,705	102,697	84,499	49,140
21,350	49,250	55,485	58,339	56,238	58,385	51,234	50,001
-5	-1	0	-	-	-	-	-
406,490	462,382	501,672	552,326	609,053	649,612	670,505	667,063
-	-	9,827	9,824	9,697	9,244	9,597	6,634
-	-	-	-	-970	-1,138	-2,372	-
406,490	462,382	511,499	562,150	617,781	657,719	677,730	673,697
15,556	17,103	37,802	50,889	24,912	6,425	4,562	1,514
21,033	15,785	13,952	20,914	18,393	13,836	6,178	3,974
36,700	28,464	23,758	47,223	42,772	49,476	81,070	86,921
18,103	18,025	14,942	9,364	5,576	6,778	-2,934	-4,212
3,597	1,866	3,159	5,612	10,419	9,329	2,396	1,047
24,112	11,096	11,019	31,610	29,494	25,319	17,209	14,369
-1,126	-1,374	-1,151	-1,338	-1,784	-5,516	-6,986	-
117,975	90,965	103,482	164,274	129,782	105,647	101,495	103,613
524,465	553,347	614,981	726,424	747,563	763,366	779,225	777,310
65.6	66.8	72.2	83.0	77.8	75.5	73.1	69.0
-45,206	-11,649	-30,927	-88,781	-55,266	-33,677	-31,052	-30,727
-36,193	-38,872	-43,611	-45,270	-50,143	-68,889	-83,435	-92,453
-82,254	-86,836	-88,583	-93,105	-96,689	-82,517	-65,336	-54,368
-118,447	-125,708	-132,194	-138,375	-146,832	-151,406	-148,772	-146,821
360,812	415,990	451,860	499,268	545,465	578,283	599,401	599,762
45.2	50.2	53.1	57.1	56.8	57.2	56.3	53.2

3) Acquired value. From end of 1993 adjusted to exchange-rate value.

Table 2.

Domestic Government Securities Issued in 1997. [1)]

No 264, 7% government bonds 2024 (7 pct. stående lån 2024)

Issued in 1997, DKK million	4,330
Interest payable	10 November
Stock exchange code	DK000991813-8
Issue commenced	6 April 1994
Redemption date	10 November 2024

No 279, 7% government bonds 2007 (7 pct. stående lån 2007)

Issued in 1997, DKK million	25,560
Interest payable	15 November
Stock exchange code	DK000991902-9
Issue commenced	10 April 1996
Redemption date	15 November 2007

No 280, 6% government bonds 2002 (6 pct. stående lån 2002)

Issued in 1997, DKK million	10,390
Interest payable	15 November
Stock exchange code	DK000991910-2
Issue commenced	18 June 1996
Redemption date	15 November 2002

No 281, Treasury bills 1997 II (Skatkammerbevis 1997 II)

Issued in 1997, DKK million	4,348
Interest payable	-
Stock exchange code	DK000980617-6
Issue commenced	1 July 1996
Redemption date	1 April 1997

No 282, 6.00% Treasury notes 1999 I (6,00 pct. statsgældsbevis 1999 I)

Issued in 1997, DKK million	2,975
Interest payable	15 February
Stock exchange code	DK000991929-2
Issue commenced	2 July 1996
Redemption date	15 February 1999

No 283, Treasury bills 1997 III (Skatkammerbevis 1997 III)

Issued in 1997, DKK million	11,148
Interest payable	-
Stock exchange code	DK000980625-9
Issue commenced	1 October 1996
Redemption date	1 July 1997

Table 2 - continued

No 284, Treasury bills 1997 IV (Skatkammerbevis 1997 IV)

Issued in 1997, DKK million	22,142
Interest payable	-
Stock exchange code	DK000980633-3
Issue commenced	2 January 1997
Redemption date	1 October 1997

No 285, 4.00% Treasury notes 2000 I (4,00 pct. statsgældsbevis 2000 I)

Issued in 1997, DKK million	14,965
Interest payable	15 February
Stock exchange code	DK000991937-5
Issue commenced	7 January 1997
Redemption date	15 February 2000

No 286, 5% government bonds 2005 (5 pct. stående lån 2005)

Issued in 1997, DKK million	17,790
Interest payable	15 August
Stock exchange code	DK000991945-8
Issue commenced	14 January 1997
Redemption date	15 August 2005

No 287, Treasury bills 1998 I (Skatkammerbevis 1998 I)

Issued in 1997, DKK million	26,547
Interest payable	-
Stock exchange code	DK000980641-6
Issue commenced	1 April 1997
Redemption date	2 February 1998

No 288, Treasury bills 1998 II (Skatkammerbevis 1998 II)

Issued in 1997, DKK million	16,309
Interest payable	-
Stock exchange code	DK000980668-9
Issue commenced	1 July 1997
Redemption date	1 May 1998

No 289, Treasury bills 1998 III (Skatkammerbevis 1998 III)

Issued in 1997, DKK million	7,745
Interest payable	-
Stock exchange code	DK000980676-2
Issue commenced	1 October 1997
Redemption date	3 August 1998

[1] Does not include the holdings of the Ministry of Finance under the location-swap facility.

Table 3.

Domestic Central-Government Debt. End of 1997[1].

Stock exchange code	Cou-pon %	Name	Issue Period[2]	Redemption date	Nominal amount (DKK million)
Government bonds, fixed interest rate					
Bullet loans					
DK000991554-8	9	Stående lån 1998	2 Jan.89-29 Jun.90 and 2 Jan.92-31 Mar.94	15 Nov. 1998	46,215.0
DK000991619-9	9	Stående lån 2000	2 Jan.90-30 Dec.92	15 Nov. 2000	59,150.0
DK000991716-3	8	Stående lån 2003	2 Jan.92-30 Dec.93	15 May 2003	69,000.0
DK000991783-3	7	Stående lån 2004	25 May 93-5 Dec.94	15 Dec. 2004	74,450.0
DK000991813-8	7	Stående lån 2024	6 Apr.94-	10 Nov. 2024	24,375.0
DK000991821-1	6	Stående lån 1999	14 Apr.94-30 Dec.94 and 2 Jan.96-2 Jul.96	10 Dec. 1999	49,300.0
DK000991864-1	8	Stående lån 2006	5 Dec.94-10 Apr.96	15 Mar. 2006	70,000.0
DK000991872-4	8	Stående lån 2001	9 Jan.95-18 Jun.96	15 Nov. 2001	44,135.0
DK000991902-9	7	Stående lån 2007	10 Apr.96-30 Dec.97	15 Nov. 2007	52,605.0
DK000991910-2	6	Stående lån 2002	18 Jun.96-	15 Nov. 2002	29,952.0
DK000991945-8	5	Stående lån 2005	14 Jan.97-	15 Aug. 2005	17,790.0
Serial loans					
DK000990329-6	5	S 2007	20 Oct.53-12 Sep.58	15 Sep. 2007[3]	55.1
DK000990272-8	4	S 2017	29 Nov.55-12 Sep.58	15 Jun. 2017[3]	105.3
DK000990493-0	12	S 2001	6 Oct.80-9 May 83	15 Feb. 2001	10,710.0
DK000990736-2	10	S 1999	10 May 83-12 Jul.85	15 Jul. 1999	2,346.5
DK000990744-6	10	S 2004	10 May 83-30 Aug.85	15 Oct. 2004	6,636.0
DK000991015-0	10	S 2001	15 Jul.85-30 Aug.85	15 Jul. 2001	2.0
Perpetuals					
DK000990159-7	3.5	Dansk Statslån 1886 Uamortisabelt[3]	11 Dec.1886	-	46.2
...	5	Dansk Islandsk Fond 1918 Uamortisabelt	20 May 1919	-	1.0
Government bonds, floating interest rate					
Bullet loans					
DK000980102-9	Var.	Stående lån 1998	4 Jan.88-2 Jan.89	15 Jan. 1998	5,502.0
DK000980129-2	Var.	Stående lån 1999	2 Jan.89-30 Dec.90	20 Nov. 1999	4,346.0

Table 3 - continued

Stock exchange code	Cou-pon %	Name	Issue Period[2)]	Redemption date	Nominal amount (DKK million)
Treasury notes					
DK000991899-7	7.00	Statsgældsbevis 1998 I	3 Jul.95-2 Jul.96	15 Feb. 1998	21,200.0
DK000991929-2	6.00	Statsgældsbevis 1999 I	2 Jul.96-30 Dec.97	15 Feb. 1999	12,975.0
DK000991937-5	4.00	Statsgældsbevis 2000 I	7 Jan.97-30 Dec.97	15 Feb. 2000	14,965.0
Treasury bills					
DK000980641-6	0	Skatkammerbevis 1998 I	1 Apr.97-3 Nov.97	2 Feb. 1998	25,947.0
DK000980668-9	0	Skatkammerbevis 1998 II	1 Jul.97-	1 May 1998	16,309.0
DK000980676-2	0	Skatkammerbevis 1998 III	1 Oct.97-	3 Aug. 1998	7,745.0
Lottery bonds					
DK000990019-3	3.5	Præmieobligationslån af 1948/98	20 Jun.48	20 Jun. 1998	100.0
DK000990027-6	4	Præmieobligationslån af 1954/99	7 Oct.54	1 Oct. 1999	100.0
DK000990035-9	3.5	Præmieobligationslån af 1959/98	1 Dec.58	1 Dec. 1998	100.0
DK000990043-3	7	Præmieobligationslån af 1965/2010	22 Sep.65	22 Sep. 2010	100.0
DK000990051-6	7	Præmieobligationslån af 1969/2009	1 Oct.69	31 Dec. 2009	100.0
	8	Præmieobligationslån af 1977/2002:			
DK000990078-9		I	14 Apr.77	15 Feb. 2002	100.0
DK000990086-2		II	3 Jun.77	15 May 2002	100.0
DK000990094-6		III	24 Jun.77	15 Jun. 2002	100.0
DK000990108-4		IV	28 Jul.77	15 Jul. 2002	100.0
DK000990116-7		V	30 Aug.77	15 Aug. 2002	100.0
DK000990124-1	10	Præmieobligationslån af 1980/2005	28 Oct.80	1 Jul. 2005	200.0
Domestic central-government debt denominated in DDK					667,063.1

Table 3 - continued

Stock exchange code	Cou-pon %	Name	Issue Period[2]	Redemption date	Nominal amount (DKK million)
Domestic debt denominated in XEU					
DK000991740-3	8.5	Stående lån XEU 1.3 billion 2002	24 Apr.92	24 Apr. 2002	6,634.0
Domestic central-government debt					673,697.1

[1] Does not include the holdings of the Ministry of Finance under the location-swap facility.

[2] The issue period refers to the period the series has been open for issue. Series still open for issue at the beginning of 1997 are marked with "-" after the first day of issue. Certain securities are only sold on one single date. For these securities only this date is stated.

[3] May be redeemed by the Danish State at three month's notice.

Table 4.

Monthly Distribution of Central-Government Payments in 1998.
Estimate based on the Finance Act for 1998.

DKK million	Jan.98	Feb.98	Mar.98	Apr.98
Ingoing payments	18,963	59,884	29,114	20,853
Outgoing payments	32,486	32,297	32,726	33,091
Net financing requirement (cash basis)	**13,523**	**-27,588**	**3,611**	**12,238**
Redemption of domestic debt:				
Government securities	5,852	23,878	0	0
Net purchase by the Social Pension Fund	-272	235	1,238	-458
Gross financing requirement excluding redemption of foreign debt (cash basis)	**-21,000**	**0**	**0**	**0**

May 98	Jun.98	Jul.98	Aug.98	Sep.98	Oct.98	Nov.98	Dec.98	1998
56,146	14,132	18,643	56,366	14,231	14,898	79,082	28,739	411,051
32,657	29,639	31,997	29,123	27,321	36,709	50,308	41,096	409,451
-23,489	**15,508**	**13,354**	**-27,243**	**13,090**	**21,811**	**-28,773**	**12,357**	**-1,600**
0	105	1,174	0	6	948	50,265	100	82,327
580	0	-754	-9	0	-286	-6,487	4,438	-1,775
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-21,000**