

# **Danish Government Securities 1995**



Danmarks Nationalbank

## DANISH GOVERNMENT SECURITIES 1995

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Danmarks Nationalbank  
Havnegade 5  
DK-1093 Copenhagen K  
Telephone +45 33 14 14 11  
Telefax +45 33 14 14 04

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# Preface

*Danish Government Securities 1995* deals with the management of the domestic debt of the Kingdom of Denmark and the Danish securities market. It is intended to provide information to foreign investors and it is a new version of the booklet *Danish Government Securities 1993* published in early 1994.

Since 1991 Danmarks Nationalbank - the Danish central bank - has acted as agent to the Ministry of Finance in the area of government borrowing, including the formulation of strategies for both domestic and foreign borrowing. Previously, Danmarks Nationalbank's role as agent for the central government covered only the selling of domestic debt. The overall responsibility for the management of the government debt still rests with the Ministry of Finance, but within quarterly guidelines Danmarks Nationalbank is authorized to conduct the necessary debt transactions on behalf of the government.

Chapter 1 gives a general introduction to the domestic debt policy and items relating to the outstanding domestic government debt. In Chapter 2 the government debt instruments are presented, and in Chapter 3 the tap issue method is discussed in detail. Finally, Chapter 4 contains an overview of the Danish securities market, with special emphasis on the bond market and the institutional structure.



# Chapter 1.

## Domestic Debt Management

### 1.1. The Borrowing Requirement

The central government deficit is expected to be DKK 40 billion in 1995 (4.0 per cent of GDP), which is DKK 2 billion lower than in 1994.

For more than 10 years the Government and Danmarks Nationalbank have agreed to cover the government deficit by issuing domestic government debt instruments denominated in DKK. More precisely, the central government's gross domestic borrowing requirement equals the government deficit (on a cash basis) plus redemption of domestic loans in DKK, cf. Table 1.1.1. Redemptions of foreign loans are normally covered by new foreign loans. The main purpose of the central government's foreign borrowing is to maintain an adequate level of foreign exchange reserves, and the proceeds are added to the government's deposits with Danmarks Nationalbank.

*Table 1.1.1. Central government's net and gross borrowing requirement.*

DKK billion	1991	1992	1993	1994	1995
Deficit on current, investment and leading account (CIL) .....	38.3	35.3	48.4	42.1	40.0
Capital items .....	17.9	-4.4	-3.1	4.7	2.2
<i>Net borrowing requirement (cash basis) .....</i>	<i>56.2</i>	<i>30.8</i>	<i>45.3</i>	<i>46.8</i>	<i>42.2</i>
Redemption of domestic debt:					
Bonds .....	26.2	56.0	38.1	51.0	46.6
Treasury notes .....	38.3	39.9	36.3	22.0	53.7
<i>Gross domestic borrowing requirement .....</i>	<i>120.7</i>	<i>126.7</i>	<i>119.6</i>	<i>119.8</i>	<i>142.5</i>
Memo:					
Redemption of foreign debt <sup>1)</sup> .....	29.4	16.5	16.7	14.9	24.2

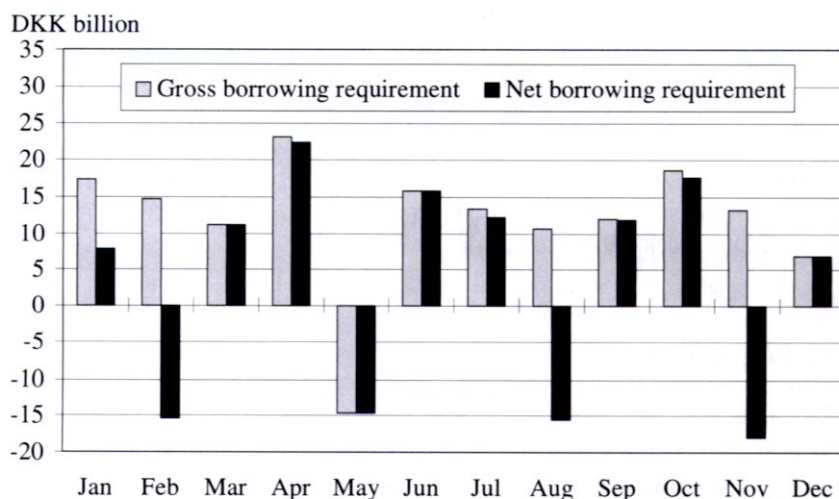
Note: Figures for 1995 are based on the Finance Act.

<sup>1)</sup> Includes purchases of foreign loans.

In 1995, the gross domestic borrowing requirement is estimated at DKK 143 billion or DKK 23 billion more than in 1994. The increase in the gross domestic borrowing requirement from 1994 to 1995 is due to the large redemptions of government bonds and Treasury notes in 1995 (DKK 100 billion), as the net borrowing requirement in 1995 is estimated to fall by DKK 5 billion.

The monthly distribution of the net and gross domestic borrowing requirement in 1995 is shown in Chart 1.1.1. and in more detail in Table 4 of the Appendix. The borrowing requirement is normally covered for the year as a whole, but it is not the goal to cover the deficits on a monthly basis, cf. Chapter 3.

*Chart 1.1.1. Domestic net and gross borrowing requirement in 1995.*



The exact domestic borrowing requirement is known only after the end of the year, and small differences between actual borrowing and the borrowing requirement are therefore unavoidable. Differences between the borrowing requirement and the issue of debt instruments in a given year are normally balanced in the following year. The borrowing requirement and the discrepancies for 1990-1994 are shown in Table 1.1.2.

Table 1.1.2. Issue of domestic government securities.

DKK billion	1990	1991	1992	1993	1994
Central government domestic borrowing, market value .....	101.8	114.4	124.8	120.9	119.6
Gross domestic borrowing requirement .....	97.0	120.7	126.7	119.6	119.8
Difference .....	4.8	-6.4	-1.9	1.3	-0.2

## 1.2. The Debt Instruments Used in 1994

In 1994, 72 per cent of the gross borrowing requirement was obtained through issue of 5, 10 and 30-year government bonds, cf. Table 1.2.1. (see Chapter 2 for a description of the debt instruments). The balance was obtained through issue of 2-year Treasury notes as the outstanding amount of Treasury bills was almost unchanged. This distribution of the issues in 1994 reflected the aim to increase the duration of the debt.

Table 1.2.1. The distribution of gross domestic borrowing.

Per cent	1990	1991	1992	1993	1994
Government bonds, fixed interest rate .....	41	41	78	52	72
Treasury notes .....	35	36	32	49	29
Government bonds, floating interest rate .....	4	0	-15	-3	0
Treasury bills <sup>1)</sup> .....	20	23	5	2	-2
Total .....	100	100	100	100	100

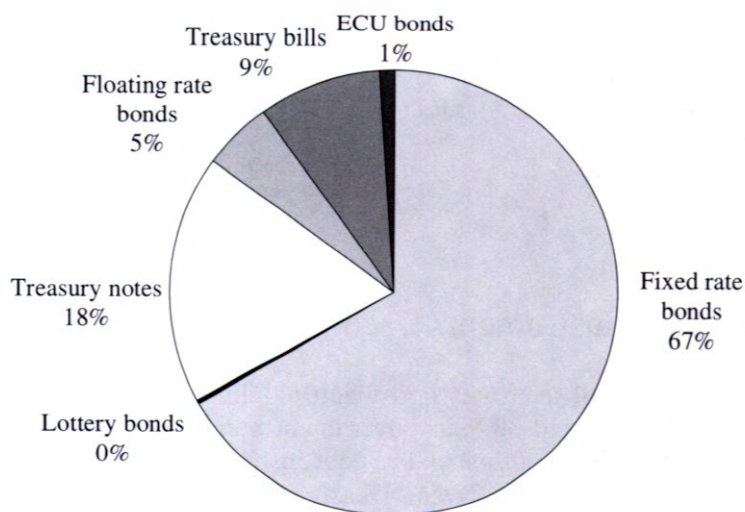
Note: Includes early repayment of floating rate bonds in 1992-1993 and fixed rate bonds and Treasury notes in 1994.

<sup>1)</sup> Net.

Chart 1.2.1. shows the outstanding government debt by instruments at the end of 1994. Two thirds of the nominal value of the outstanding debt is fixed rate government bonds, which is a consequence of the large government bond issues in recent years.



Chart 1.2.1. Central government domestic debt. End of 1994.



### 1.3. Yields on Danish Government Securities

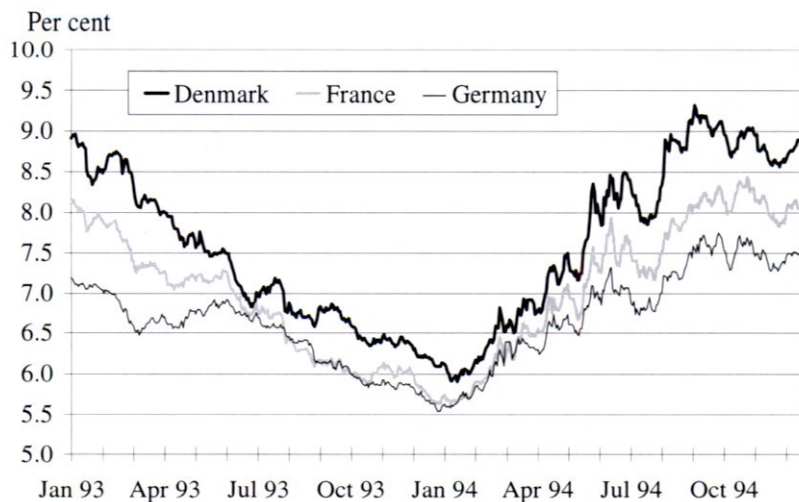
The yield on Danish 10-year government bonds increased from 6 per cent to 9 per cent during 1994, and this was also the level at the beginning of 1993, cf. Chart 1.3.1. The interest rate increase in 1994 was triggered by rising interest rates in the USA and Germany. The general increase in the international interest rate level was accompanied by an increase in the Danish interest-rate differential to Germany. The 10-year interest-rate differential to Germany widened from 50 basis points at the beginning of 1994 to around 150 basis points at the end of the year. The yield differential between Danish and German government bonds was approximately at the same level at the end of 1994 as in the beginning of 1993.

Investors, portfolio managers and bond dealers usually compare yields on Danish government securities with yields on German and French bonds, and trading based on expected gains from changes in the yield differential between Denmark and France, or between Denmark and Germany, is common.

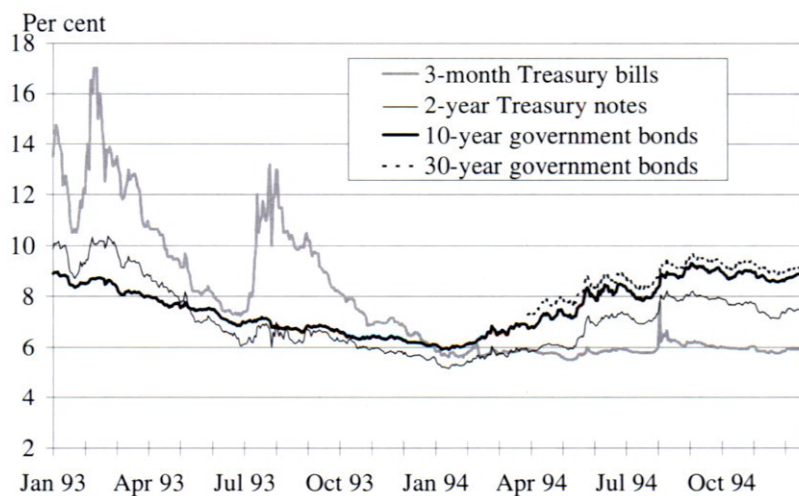
Yields on 2-year Treasury notes followed almost the same pattern as the yield on 10-year government bonds in 1994, although the increase was smaller, whereas the 3-month yield was almost unchanged at 6 per cent during 1994, cf. Chart 1.3.2. The Danish yield curve therefore as-

sumed a "normal" shape during 1994, after having had a "reversed" shape during 1993.

*Chart 1.3.1. Yields on 10-year government bonds in 1993 and 1994.*



*Chart 1.3.2. Yields on Danish government securities in 1993 and 1994.*



## 1.4. The Government Debt

At the end of 1994 the net central government debt amounted to DKK 544 billion or 58 per cent of the gross domestic product (GDP), cf. Table 1.4.1. This was an increase of DKK 45 billion compared to 1993. The definition of the debt specified in Table 1.4.1. is the measure most often used in Denmark. The Maastricht Treaty of the European Union contains a different definition, cf. Box 1.4.1.

Table 1.4.1. Central government debt<sup>1)</sup>.

DKK billion	1991	1992	1993	1994	1995
<i>Central government debt:</i>					
Domestic .....	462.4	511.5	562.2	617.8	668.8
Foreign .....	91.0	103.5	164.3	129.8	129.8
Total .....	553.4	615.0	726.5	747.6	798.6
<i>Liquid assets:</i>					
The Social Pension Fund .....	-125.7	-132.2	-138.4	-146.8	-150.0
Deposits with Danmarks Nationalbank .....	-11.6	-30.9	-88.8	-56.9	-57.5
Central government debt less liquid assets .....	416.0	451.9	499.3	543.8	591.1
Per cent of GDP .....	50.2	53.1	57.2	57.7	59.2

Note: + = liabilities, - = assets.

1995 are estimates based on the Finance Act.

<sup>1)</sup> Nominal value. End of year.

The foreign debt decreased by DKK 35 billion in 1994, predominantly due to repayments of foreign loans of DKK 31 billion and exchange rate gains of DKK 4 billion. The repayments of the foreign debt were, in accordance with the borrowing rule mentioned above, financed by drawing on the deposits with Danmarks Nationalbank, and therefore did not affect the net government debt.

The government deposits with the central bank and the assets of the Social Pension Fund are liquid financial assets of the central government and are therefore deducted from the central government debt. The assets of the Social Pension Fund originate from tax payments in the 1970s. The Fund holds a portfolio of Danish securities with a total nominal value of DKK 147 billion at the end of 1994. Mortgage bonds constitute the largest part of the holdings of the Social Pension Fund, amounting to



DKK 97 billion, followed by holdings of government securities of approximately DKK 50 billion, cf. Table 1 of the Appendix.

*Box 1.4.1. Public sector debt - Maastricht definition.*

It was agreed in the Maastricht Treaty of the European Union, Article 104C, that when entering the second phase of the European and Monetary Union on January 1, 1994 the member states should endeavour not to have excessive budget deficits. The precise definitions of excessive deficits are set in a protocol to the Maastricht Treaty and Council regulation 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 Council of the European Union and the European Commission have agreed that for Denmark government deposits with Danmarks Nationalbank and the assets held by the Danish Social Pension Fund against sectors outside the general government shall be specified in the presentation of the stock of public debt (the Social Pension Fund's holdings of government securities are deducted directly when calculating the consolidated public sector debt).

In the report to the European Commission in September 1994 the consolidated public sector debt at the end of 1994 was estimated at DKK 733 billion, amounting to 78 per cent of GDP. The consolidated public sector debt after the reductions specified in Table 1 was estimated at DKK 505 billion, or 54 per cent of GDP. New figures for 1994 have not yet been calculated.

*Table 1. Public sector debt.*

DKK billion	1991	1992	1993
<i>The consolidated gross debt of the public sector</i> .....	535	588	701
Per cent of GDP .....	65	69	80
<i>Reductions</i>			
Government debt from the financing of public undertakings .....	-58	-60	-64
Government deposits with Danmarks Nationalbank ...	-12	-31	-89
Social Pension Fund holding of non-government securities .....	-87	-89	-93
Total reductions .....	-157	-180	-246
<i>Total consolidated public sector debt after reductions</i> .	378	408	455
Per cent of GDP .....	46	48	52

Source: Ministry of Economic Affairs, September 1994.

## 1.5. Holders of Government Securities

Danish government bonds are included in many international portfolios managed in accordance with the government bond indices published by some of the major international banks. The indices typically include Danish government bonds corresponding to 1-2 per cent of the total (world) index value.

Danmarks Nationalbank estimates that holdings of Danish government securities by foreign residents amounted to DKK 265 billion at the end of 1993, measured at market value, or 45 per cent of the government debt, cf. Table 1.5.1.

At the end of 1994, the market value of holdings of Danish government securities by foreign residents was reduced to DKK 170 billion, or around 30 per cent of the debt. The net sale of government securities by foreign residents is estimated at DKK 78 billion at market value. This is approximately the same amount as the net purchases by foreign residents in 1993.

Since the net issue of Danish government securities amounted to DKK 47 billion at market value in 1994, cf. Table 1.1.1., the net purchases by the domestic sectors in 1994 were approximately DKK 125 billion, measured at market value.

*Table 1.5.1. Holders of government securities. Market value. End of quarter.*

DKK billion	Q4 1993	Q1 1994	Q2 1994	Q3 1994	Q4 1994
Non-financial corporate sector ..	24.4	24.9	34.3	42.9	47.8
Financial institutions incl.					
Danmarks Nationalbank .....	170.9	202.2	212.2	209.0	188.4
Insurance companies and					
pension funds .....	19.9	22.8	38.3	46.7	43.8
Public sector .....	51.4	56.1	56.4	67.5	79.9
Private, non-dividend paying					
institutions .....	9.2	7.2	8.3	9.0	10.1
Household sector .....	41.0	35.3	37.4	42.0	50.4
Foreign residents .....	264.5	239.0	197.4	171.1	170.1
Other .....	11.1	21.1	8.9	10.3	13.6
Total .....	592.4	608.6	593.3	598.5	604.0

## 1.6. Duration of the debt

The duration<sup>1)</sup> is used to obtain an overall view of the current composition and the risk exposure of the debt. At the beginning of the year a planned duration for the end of that year is fixed, and alternative strategies to achieve this duration are calculated. During the year the target may be adjusted.

In addition to the duration target, a number of subtargets must be fulfilled. As a natural consequence of the tap-issuance system, cf. Chapter 3, it is considered of prime importance to issue regularly and transparently. This means continuous issue of a variety of government securities. By limiting the supply of government securities to relatively few benchmark issues it is expected that liquidity is enhanced and that the borrowing costs are reduced as far as possible. Furthermore, it is preferred that the redemption profile for the debt as a whole is relatively smooth in order to reduce the refinancing risk. These subtargets may point in opposite directions, and on such occasions the liquidity has been the most important consideration.

Since 1983 the average remaining time to maturity of the domestic debt has been fluctuating at around 4 years and the duration between 2 and 3 years, increasing to more than 3 years at the end of 1993, cf. Table 1.6.1.

*Table 1.6.1. Average time to maturity and duration of the domestic government debt.*

Years	Average remaining maturity	Duration	
		Fixed rate debt	Total debt
1985 .....	4.2	3.0	2.8
1986 .....	4.0	2.9	2.6
1987 .....	3.6	2.4	2.1
1988 .....	3.6	2.5	2.0
1989 .....	4.0	2.8	2.2
1990 <sup>1)</sup> .....	4.4	3.1	2.4
1991 .....	3.6	2.8	2.3
1992 .....	4.2	3.2	2.8
1993 .....	4.2	3.5	3.3
1994 .....	4.4	3.4	3.2

<sup>1)</sup> The calculation method was changed in 1990.

<sup>1)</sup> The duration calculated is of the Macauley type.



At the beginning of 1994 it was decided to aim at an increase in the duration of the domestic debt from 3.3 years to 3.5 years. The background was the relatively large domestic debt and the expected budget deficits. In connection with the introduction of 30-year government bonds in early 1994, cf. Chapter 2, the target was increased further. A duration of 3.5-4.5 years is at present considered to be an appropriate long-term level.

As a consequence of the almost continuous increase in interest rates in 1994 and the volatile bond markets, which in long periods dampened the demand for long-term government securities, the duration target was *de facto* suspended during parts of 1994, and more emphasis was placed on fulfilling the required amount of borrowing. Thus, the duration target was not achieved in 1994. Another important factor was the calculatory effect of the interest rate increase in 1994, which in itself induced a decrease in the duration of the domestic government debt by 0.25 years.

At present, it is the intention to increase the duration of the domestic debt to a level of around 3.75 years at the end of 1995. The implementation of this increase in duration will depend on the interest rate development and the distribution of the demand for Danish government securities in 1995.

## 1.7. Sources of Information

The domestic borrowing requirement for 1995 was presented in December 1994, when the Finance Act for 1995 was adopted. The Ministry of Finance typically publishes revised estimates of the government deficit in May, August, October and December.

The Finance Bill for 1996 will be presented in August, and the Budget approved in December 1995. Information on the Budget will be available in English from the Ministry of Finance.

On the basis of these official estimates, Danmarks Nationalbank estimates and publishes a monthly distribution of the net and gross borrowing requirements. This distribution is available via fax upon request.

Information on the daily issue of government securities and the realized borrowing requirement on a monthly basis is available on four different levels.

On each trading day, Danmarks Nationalbank publishes an update of the nominal value of the issue of Danish domestic government securities on the preceding trading day as well as accumulated from the beginning of the month (and the beginning of the year). This information is available via Reuters, pages DKMA-B.

On the first banking day of each month, the market value of the actual issue in the preceding month (and an update of the market value of the accumulated issue for the current year) is published via the Copenhagen Stock Exchange. This information is available via fax upon request and via Reuters, pages DKMG-H.

On the second banking day of each month, the actual borrowing requirement for the preceding month is published. This information is available via Reuters, pages DKMG-H.

Information on the results of Treasury bill auctions is available via Reuters at 1.00 p.m. on the penultimate banking day of each month, pages DKME-F.

Questions concerning the borrowing requirement and the issue of Danish government securities should be directed to Danmarks Nationalbank, telephone +45 33 14 14 11, or fax +45 33 14 14 04.



## Chapter 2.

# Government Debt Instruments

### 2.1. Issues in 1994

All domestic government debt instruments are marketable and listed on the Copenhagen Stock Exchange. All securities open for issue, except Treasury bills, are sold on tap. The tap system is described in more detail in Chapter 3. The total issue of Danish government securities in 1994 is shown in Table 2.1.1.

*Table 2.1.1. Issue of domestic government securities in 1994.*

DKK million	Amount issued		Outstanding amount <sup>1)</sup>
	Nominal value	Market value	
7% government bonds 2024 .....	5,537	4,695	5,537
8% government bonds 2006 .....	2,595	2,478	2,595
7% government bonds 2004 .....	42,300	40,632	74,450
6% government bonds 1999 .....	41,241	38,025	41,241
9% government bonds 1998 .....	100	114	59,400
Bonds, fixed interest rate .....	91,773	85,944	
6.25% Treasury notes 1997 I ....	18,317	17,687	18,317
5.25% Treasury notes 1996 II ....	18,170	17,872	18,170
6.00% Treasury notes 1996 I ....	3,528	3,527	21,528
Treasury notes .....	40,015	39,086	
Treasury bills 1995 III .....	9,390	8,948	9,390
Treasury bills 1995 II .....	22,352	21,554	22,352
Treasury bills 1995 I .....	24,496	23,702	24,496
Treasury bills 1994 IV .....	29,810	28,816	
Treasury bills 1994 III .....	11,695	11,416	
Treasury bills 1994 II .....	2,820	2,776	
Redemptions .....	102,664	102,664	
Treasury bills, net .....	-2,101	-5,452	
Government securities, total .....	129,687	119,580	

<sup>1)</sup> End of 1994.

Note: Does not include holdings of the Ministry of Finance under the location swap facility.



The government currently issues bullet bonds in the 30, 10, and 5-year segments, Treasury notes in the 2-year segment and Treasury bills with maturities ranging between 3 and 9 months at issue. Medium-term and long-term fixed interest rate bonds are the most important securities.

Other instruments have been used over time. Serial loans were issued until 1988, and floating rate notes were issued from the beginning of the 1980s until 1990, when the present Treasury bill programme was started. Domestic 10-year ECU bonds were issued in April 1992.

Government bonds and Treasury notes with ordinary redemption in 1995 were purchased and cancelled (extraordinarily redeemed) in 1994 in order to reduce the redemptions of the domestic government debt in 1995. The purchases were refinanced in 1994 by the issue of 10-year bonds. Government securities for DKK 14.9 billion were purchased, cf. Table 2.1.2.

*Table 2.1.2. Securities purchased and cancelled in 1994.*

DKK million	Amount purchased		Outstanding amount <sup>1)</sup>
	Nominal value	Market value	
9% government bonds 1995 .....	8,610	8,987	32,140
Bonds, fixed interest rate .....	8,610	8,987	
9.75% Treasury notes 1995 I ....	1,443	1,460	27,407
9.25% Treasury notes 1995 II ....	4,817	5,064	26,283
Treasury notes .....	6,260	6,525	
Government securities, total .....	14,870	15,512	

<sup>1)</sup> End of 1994.

Note: Does not include holdings of the Ministry of Finance under the location swap facility.

## 2.2. Government Bonds

Fixed-rate government bonds accounted for 67 per cent of the total domestic government debt at the end of 1994, cf. Chart 1.2.1. The current issues are straight bullet bonds in denominations of DKK 1,000 with annual interest payment. The securities may not be called before ordinary redemption. The Ministry of Finance is entitled, however, to purchase government securities in the market and cancel the purchased securities.

Normally, series are open over a period of 1-3 years. New issues of securities are continuously added to the existing line of stock and the



newly issued securities in each series are fungible with - that is exactly equal to - the securities of the same series already traded in the secondary market.

There are no rules concerning the length of the issue period, and the Ministry of Finance may at any time discontinue issue in a particular series and start selling another one. Series that have been closed for a period may be reopened.

For a number of years it has been the objective to create issues which can be traded efficiently, domestically as well as internationally. The size of the issues has increased considerably during the last 5 years, and the most important issues are very liquid. The most important fixed-rate government bonds are shown in Table 2.2.1.

*Table 2.2.1. Most important fixed-rate government bonds.*

DKK billion	Due date	First issued	Issue discontinued	Amount issued in 1994	Size of series <sup>1)</sup>
7% 2024	Nov.10	Apr. 6, 94	-	5.5	6.8
8% 2006	Mar.15	Dec. 5, 94	-	2.6	7.0
7% 2004	Dec.15	May 25, 93	Dec.5, 94	42.3	74.5
8% 2003	May 15	Jan. 2, 92	Dec.30, 93	-	69.0
8% 2001	Nov.15	Jan. 9, 95	-	-	7.0
9% 2000	Nov.15	Jan. 2, 90	Dec.30, 92	-	59.2
6% 1999	Dec.10	Apr.14, 94	Dec.30, 94	41.2	41.2
9% 1998	Nov.15	Jan. 2, 89	Mar.31, 94	0.1	59.4

<sup>1)</sup> End of January 1995.

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

The coupon rate must be greater than or equal to the minimum coupon rate in force at the time of issue, cf. Box 2.2.1. Due to the practice of adding to the series over quite a long period, the issue price may deviate significantly from par during the issue period.

## 5 and 10-year Government Bonds

Since 1991 the 10-year government bonds have been the undisputed benchmarks of the Copenhagen Stock Exchange, and the present benchmark issue, 7% government bonds 2004 (maturing on December

15, 2004), has reached a size comparable to that of the benchmarks of the most important European government bond markets.

The expected replacement for 7% 2004 as the 10-year benchmark bond was opened on December 5, 1994, with a coupon of 8% and with redemption on March 15, 2006. At the same time, issue in 7% 2004 was discontinued. It is expected that 8% 2006 will become the 10-year benchmark in early 1996, depending on the investor interest and the issue activity.

On April 14, 1994 a new 5-year bond, 6% government bonds 1999 (maturing on December 10, 1999) was opened. Approximately DKK 41 billion was issued in this series in 1994, but as a consequence of the increase in the minimum coupon rate, the issue ceased at the end of 1994. A new 5-year government bond series was consequently opened on January 5, 1995, with a coupon rate of 8 per cent and redemption on November 15, 2001.

Until a sufficient amount has been issued, which is not expected to be the case until early 1996, the 9% 2000 (redemption on November 15, 2000), with an outstanding amount of DKK 59 billion and a high turnover, is expected to be the 5-year benchmark on the Danish securities market.

*Box 2.2.1. The minimum coupon rate.*

The coupon rate of the Danish government bonds and notes exceeds or equals a minimum coupon rate calculated according to the Danish Capital Gains Tax Act. As from January 1, 1995, the minimum coupon rate is 7 per cent.

Capital gains on securities which on issue have a nominal interest rate equal to or higher than the minimum coupon rate are not subject to taxation for private individuals in Denmark. These tax rules are of no importance to non-resident investors. All interest-bearing government securities fulfil this condition when issued and are "bluestamped". Changes in the minimum coupon rate may force an issue to be stopped before the desired volume is reached.

The minimum coupon rate is fixed biannually (January 1 and July 1) but may be changed extraordinarily. It is based on a reference yield calculated by the Copenhagen Stock Exchange over 20 trading days before June 15 and December 15 respectively. The minimum coupon rate is the integer of 7/8 of this average yield. If the reference yield during a 10-day period is more than 1 per cent lower or more than 2 per cent higher than the reference yield used in the calculation of the current minimum coupon rate, a new minimum coupon rate is fixed for the remaining period. The reference yield is calculated and published daily by the Copenhagen Stock Exchange.



## 30-year Government Bonds

When the 30-year government bond was launched on April 6, 1994 (maturing on November 10, 2024), the government had not issued government bonds with maturities longer than 10 years since 1985. The decision to issue in this maturity segment was a natural consequence of the decision to increase the duration of the domestic debt, and the liquid markets for 30-year government bonds established in Germany, France and the Netherlands indicated international investor interest in this maturity segment. Furthermore, the historically low interest level was attractive seen from the viewpoint of the issuer.

Although it is the intention to create a liquid 30-year benchmark bond in line with the general issue strategy, it was realized from the start, that the issue period might be longer for this particular series, as it was a new product and the exact demand in this maturity segment was difficult to estimate.

The issue in 7% government bonds 2024 in 1994 was DKK 6 billion, which was clearly less than originally planned. One reason was the general increase in yields in 1994 combined with periods of high volatility and low demand for very long government bonds.

## 2.3. Treasury Notes

Treasury notes have the same general characteristics (denominations of DKK 1,000, fixed interest rate and annual interest payment) as government bonds, but the maturity on issue is normally only 1½-2½ years.

The Treasury notes form a separate programme characterized by the following:

- A new series is opened each January and July.
- The issue period is normally 1 year.
- The coupon is fixed at approximately 1 percentage point below the average secondary market yield on government securities with a residual maturity of 1 to 4 years, but at least equivalent to the minimum coupon rate.

The Treasury notes are the 2-year benchmark of the Danish bond market, but under current conditions there is no need to reach the volume which is usual for the bonds. A volume in the range of DKK 20-30 billion is considered appropriate. The most important issues of Treasury notes are shown in Table 2.3.1.

Normally two series of Treasury notes are open simultaneously. Due to the increase in the minimum coupon rate to 6 per cent on July 1,

1994, it was, however, necessary to close the 5.25% Treasury notes 1996 II half a year before originally planned. Due to a further rise in the minimum coupon rate to 7 per cent on January 2, 1995, it was also necessary to close the 6.25% Treasury notes 1997 I half a year before planned. The 7.00% Treasury notes 1997 II will therefore be the only open issue in the first half of 1995.

A new series of Treasury notes will, in accordance with the programme, be opened on July 3, 1995.

*Table 2.3.1. Most important Treasury notes.*

DKK billion	Due date	First issued	Issue discontinued	Amount issued in 1994	Size of series <sup>1)</sup>
7.00% 1997 II	Aug.15	Jan.4, 95	-	-	7.0
6.25% 1997 I	Feb.10	Jul.1, 94	Dec.30, 94	18.3	18.3
5.25% 1996 II	Aug.10	Jan.3, 94	Jun.30, 94	18.2	18.2
6.00% 1996 I	Feb.10	Jul.1, 93	Jun.30, 94	3.5	21.5
9.25% 1995 II	Aug.10	Jan.4, 93	Dec.30, 93	-	26.3

<sup>1)</sup> End of January 1995.

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

## 2.4. Treasury Bills

Issue of Treasury bills was resumed in April 1990 (after being discontinued in 1957). The bills are zero-coupon securities issued in denominations of DKK 1 million in a regular programme. Treasury bills are issued at monthly auctions with maturities from 3 to 9 months. A new series with a maturity of 9 months is opened at the beginning of January, April, July and October simultaneously with repayment dates. The issue of Treasury bills with 3-8 month maturities adds new tranches to the existing series. No bills with maturities shorter than 3 months are issued. This calendar implies that there are always 3 issues in the market.

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. Two trading days is the normal settlement period for Treasury bills against 3 trading days for other securities. Bids may be submitted by banks and stockbroking companies either on their own account or on the account of customers. All bids with lower yields than the cut-off yields fixed by Danmarks Nationalbank for each maturity are

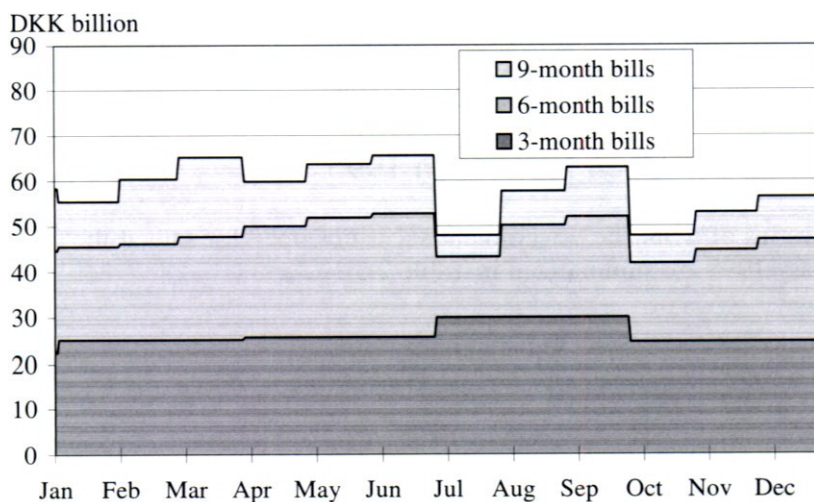


accepted. All bills are settled at the cut-off yield. A pro rata accommodation of bids at the cut-off yield may be made. Bids must be submitted to Danmarks Nationalbank by 10.30 a.m. on the auction day. The result of the auction is published at 1.00 p.m. on the auction day.

The auctions in March, June, September and December are settled on redemption dates for maturing issues and the number of bids submitted at these auctions is normally much larger than at the other auctions. The outstanding volume is shown in Chart 2.4.1. In Table 2.4.1. the results of the auctions with settlement in 1994 are summarized

The total number of bids at the auctions at the beginning of 1994 was relatively large, cf. Table 2.4.1. This high volume of bids can be explained by conversions of mortgage-credit bonds, cf. also Chapter 4, temporarily boosting the cash holdings of the mortgage-credit institutes, and the fact that these cash holdings were due for payment on the repayment dates for Treasury bills.

*Chart 2.4.1. Outstanding amount of Treasury bills in 1994.*



Since it was not considered appropriate at the beginning of 1994 to boost the outstanding amount of Treasury bills temporarily, it was decided to limit the amounts to be sold at some of the Treasury bill auctions in the spring of 1994. The limit was in all cases a maximum amount of DKK 5 billion.

After the gradual build-up in the volume of Treasury bill in the beginning of the 1990s, the Treasury bill programme has reached a volume

considered to be appropriate, and major variations in the outstanding volume are therefore not expected in 1995.

*Table 2.4.1. Treasury bill auctions with settlement in 1994.*

DKK billion	Bids submitted	Bids accepted	Cut-off yield, per cent		
			3 m	4-6 m	7-9 m
December 29, 1993 .....	42.4	19.3	6.20	6.10	6.00
January 28 <sup>R)</sup> .....	27.5	5.0	-	5.34	5.35
February 25 <sup>R)</sup> .....	9.9	4.8	-	5.80	5.68
March 29 .....	23.7	19.7	5.95	5.85	5.85
April 27 <sup>R)</sup> .....	5.9	3.8	-	5.90	5.85
May 30 <sup>R)</sup> .....	3.1	2.0	-	5.80	5.85
June 29 .....	8.7	7.9	6.05	6.25	6.50
July 28 .....	17.5	9.7	-	6.05	6.25
August 30 .....	9.1	5.2	-	6.50	6.85
September 29 .....	20.8	14.9	6.15	6.70	7.00
October 28 .....	11.4	5.1	-	6.32	6.65
November 29 .....	7.8	3.3	-	5.95	6.20

<sup>R)</sup> A maximum sale of DKK 5 billion was announced before the action.

## 2.5. Issues Open for Sale in 1995

The series of domestic government securities open for sale at the end of January 1995 are summarized in Table 2.5.1.

*Table 2.5.1. Current issues open for sale. End of January 1995.*

	Interest payable	Redemption
<i>Government bonds:</i>		
7% government bonds 2024 .....	November 10	2024
8% government bonds 2006 .....	March 15	2006
8% government bonds 2001 .....	November 15	2001
<i>Treasury notes:</i>		
7.00% Treasury notes 1997 II .....	August 15	1997
<i>Treasury bills:</i>		
Treasury bills 1995 IV .....	October 2	1995
Treasury bills 1995 III .....	July 3	1995
Treasury bills 1995 II .....	April 3	1995

## Annex A

### Yield Calculation for Danish Government Securities

#### Treasury Notes and Government Bonds

##### Definitions and Conventions

- No odd first or last coupon
- Price/yield method is ISMA
- 1 month = 30 days, 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.

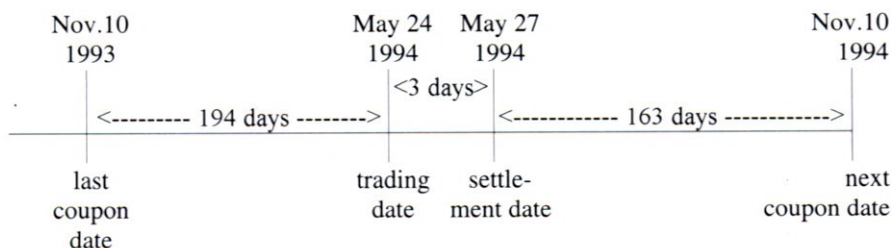
This means - in most of a coupon period - that bonds are issued on a cum-coupon basis, i.e. the buyer of the bond receives full payment of interest on the forthcoming due date. The seller (the government) is compensated for this by receiving accrued interest from the purchaser of the bond from the last 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 (accrued interest is negative). In the period from 30 days before an interest payment date to the interest payment date, accrued interest is calculated backwards from the interest payment date to the settlement date.

Example:

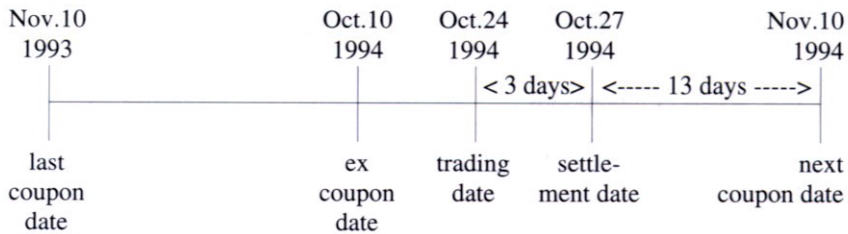
Issue: 7% government bonds 2024  
Interest payment date: November 10  
Maturity date: November 10, 2024  
First issue date: April 6, 1994  
Coupon: 7 per cent

Bond sold on May 24, 1994



The accrued interest for a bond sold on May 24 and settled on May 27 is:  
 $(197/360) \times 7\% = 3,83\%$ .

Bond sold on October 24, 1994



Accrued interest for a bond sold on October 24 and settled on October 27 is:  
 $-(13/360) \times 7\% = -0,25\%$

### Yield Calculation

The yield, or yield to maturity, is in principle 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 calculated for different types of bonds.

The general formula is

$$(A.1) P + A = \sum_{t_i} C \times (1+r)^{-t_i}$$

where

- r = Yield
- P = Clean price paid on value date
- A = Accrued interest
- C = Payment at time t
- $t_i$  = Number of days to  $i$ th partial payment divided by number of days per year (360).  $i=1,...,N$ , where N is the number of due dates.

Since 1988 government bonds and Treasury notes have been bullet issues, and the cash flow is characterized by a 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:

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

Conversion from yield to price:

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



## Chapter 3.

# Issue of Government Securities

### 3.1. The Tap System

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.

Danmarks Nationalbank participates as a trader on the Copenhagen Stock Exchange. All stockbroking companies, banks and mortgage-credit institutes which are members of the Copenhagen Stock Exchange can buy bonds and Treasury notes from Danmarks Nationalbank.

Government bonds and Treasury notes are issued on tap<sup>1)</sup>. The tap system implies that each series of government securities is issued over an extended period of time, sometimes several years. The amount issued on tap during a period is not fixed in advance and varies according to the desired sale and the demand from the market.

Government securities are sold without a special primary dealer arrangement, and no special financing facilities or special obligations on the part of the broker-dealers exist. On a voluntary basis, market-making arrangements have, however, been established in the secondary market for the most traded government securities, under the auspices of the Danish Securities Dealers Association and the Copenhagen Stock Exchange. These arrangements are described in more detail in Chapter 4.

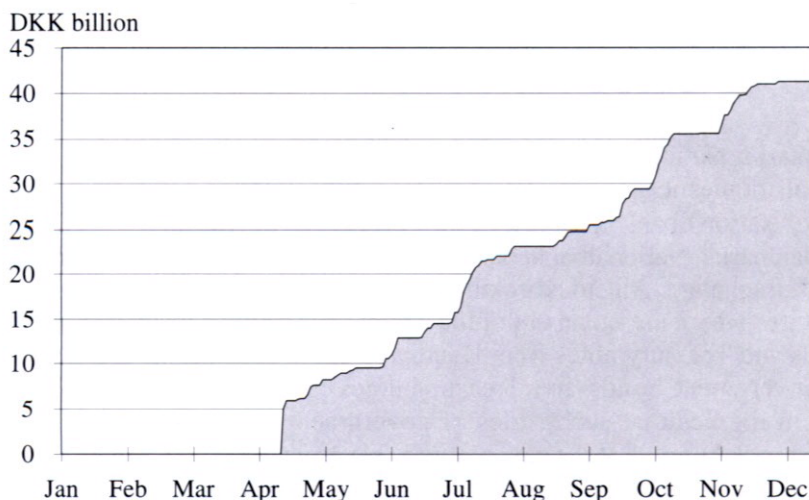
Securities sold via the tap method are fungible with the securities issued earlier in the same series. On issue, bonds and notes have the same settlement period and payment as secondary market trades. The first coupon after the issue is normal, and the ex-coupon period of 30 days applies on issue as well as for secondary market trades. The issue prices are net prices and no commission is paid.

The tap method results in the gradual augmentation of the size of the issues, cf. Chart 3.1.1. which shows the build-up of 6% government bonds 1999 (maturing on December 10, 1999). The series was opened on April 14, 1994. During the first weeks the outstanding amount is, of course, not substantial, but the market participants know that the new issue will become liquid and the new issues are most often traded at a yield very similar to that of comparable older and more liquid issues.

<sup>1)</sup> Treasury bills are sold at monthly auctions, see Chapter 2.

The aim is to get the market going, and normally the size of the series reaches the threshold of a liquid market relatively fast. The investors and intermediaries know that this is an important objective.

*Chart 3.1.1 Outstanding amount in 6% government bonds 1999.*



Danmarks Nationalbank continues the issue until the series has reached the desired size, or - for notes which are issued during a 1-year period - reached the time limit. Changes in the statutory minimum coupon rate, cf. Box 2.2.1., may shorten the issue period.

### 3.2. Danmarks Nationalbank's Utilization of the Trading Systems

Most of the tap issue is executed via the Match System of the Copenhagen Stock Exchange. The Match System is an electronic trading system with automatic execution of trades. The Copenhagen Stock Exchange and its trading systems (the Match System, the Accept System, the Interest System and the Electro-Broker System) are described in greater detail in Chapter 4.

The Nationalbank issues most of the government securities via the Match System because this system is at one and the same time suitable for sale of large bond volumes, ensures all broker-dealers equal access



to buy government securities (for the amount they demand), and ensures immediate dissemination of market information on the issue of government securities.

In practice, the issue of government securities most often takes place by the Nationalbank offering an amount for sale in the Match System. The amount involved will typically be DKK 100-200 million. Thereafter, broker-dealers in the system buy larger or smaller portions of the offered amount. Usually the securities offered are sold to several different buyers. If the market level has not changed, and there is still a selling requirement, a further amount is offered. If the market level has risen or the Nationalbank considers it appropriate, the prices for the new offering may be raised marginally. This process continues until there are no more interested buyers or the Nationalbank does not wish to sell any more securities.

In practice, the Match System is predominantly used by Danmarks Nationalbank, since most broker-dealers prefer other trading systems and (particularly) telephone trading with subsequent reporting when trading in the secondary market. In the period July 1993 to September 1994 the Nationalbank was thus involved in approximately 80 per cent of trading in 7% government bonds 2004 between participants in the Match System. It should be noted that issuance of the 7% government bonds 2004 in the same period accounted for only approximately 5 per cent of total turnover between members of the Copenhagen Stock Exchange.

The Accept System is normally only used if a broker-dealer wants to buy government securities for an amount which cannot be divided by the trading unit in the Match System. The Nationalbank may accept such an offer if the Nationalbank is simultaneously selling in the Match System or has plans to commence sale in the Match System immediately thereafter. However, in 1994, some issue of 30-year government bonds 7% 2024 took place via the Accept System because the volume sold was relatively small.

The Nationalbank does not participate in the Electro-broker System, which is reserved for market-makers, although it does have observer status in order to monitor bids and offers.

When members of the Copenhagen Stock Exchange contact the Nationalbank to trade by telephone, they will usually be referred to the Match System. Government securities are, however, on occasion sold in the telephone market (with subsequent reporting), e.g. if there are technical problems in the Match System. The Interest System is not used in connection with issue of government securities.

### 3.3. The Daily Tap Issue

Usually, very large amounts are involved when the Nationalbank sells government securities. The average daily issue in 1994 was just over DKK 500 million.

It is the Nationalbank's experience that on days with falling prices there will rarely be any real interest to buy in the bond market, so that it is not possible to sell significant amounts. Furthermore, the risk cannot be ignored that due to the Nationalbank's central position in the financial markets as well as the substantial issue, the Nationalbank might contribute to creating or reinforcing market trends. The Nationalbank will therefore typically refrain from selling government securities on days with low turnover and falling prices, although it has done so on a few occasions when it was considered necessary to stimulate sales.

In order to avoid creating or amplifying negative trends in the bond market, the Nationalbank will usually not underbid itself in the market over a single day. For example, if the Nationalbank has on one day sold a particular bond at a price of DKK 99.50 per 100, this paper will normally not be offered for a price under DKK 99.50 for the rest of the day. 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.

The procedure is illustrated in Chart 3.3.1., which shows the price (DKK per 100) for the Nationalbank's sale of 7% government bonds 2004 compared to the market price on a selected day.

Just as Denmark's Nationalbank will usually not underbid itself within a single day the Nationalbank will normally not underbid itself over a period of several days either. If issue has taken place at a particular price level on a given day, no sales will be made at lower prices on the days immediately following, unless there is a shift in the market level. However, it is clear that the probability of a general market shift and thus of the Nationalbank resuming sales at the new lower price level will increase with the length of the period considered.

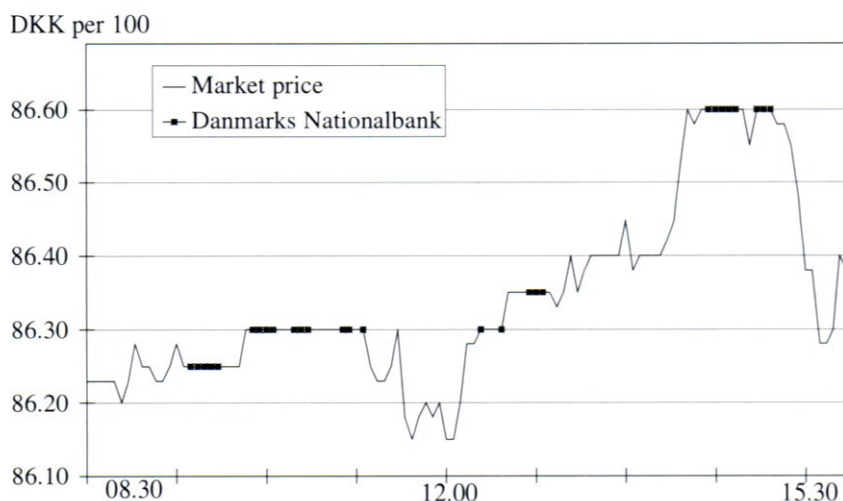
Overall it can be said that when price fluctuations are moderate, sales of government securities follow the market prices upwards, but wait for a while until following the market level downwards. This enables the bond market to find a new level and prevents the issue of government securities from unnecessarily amplifying downward bond-price trends.

There are often days with rising market prices, when no government securities are sold in the market. This can be either because the desired sales volume for that period has been reached, or because despite rising prices there has been very low demand and turnover in the relevant bond



series on the Copenhagen Stock Exchange. On these days, attempts to sell government securities can depress prices without any significant sale, and on such days government securities are not sold.

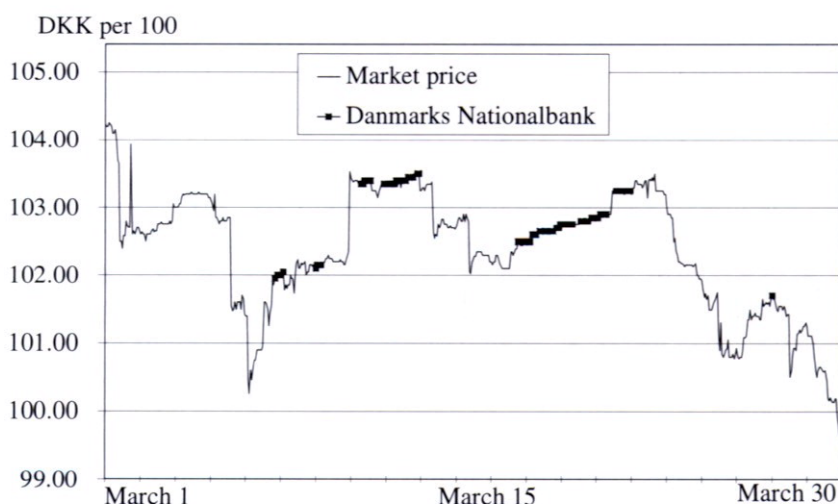
*Chart 3.3.1. Danmarks Nationalbank's sale of 7% 2004 on September 23, 1994 compared to the development in the market price.*



The aforementioned is illustrated by Chart 3.3.2., which shows the Nationalbank's sales of 7% 2004 in March 1994 compared with the general development in market prices. The Nationalbank mainly sells in periods of rising prices.

In 1994, there was an average of 21.1 trading days per month and government securities were sold on an average of 11.7 days per month. In the individual months of 1994 government securities were sold on between 38 per cent and 90 per cent of the Copenhagen Stock Exchange's trading days. In practice, it is rare that all the tap issues are sold on one particular day. This is because the individual government securities have very different characteristics (remaining maturity, coupon, etc.), so that market conditions on a given day can (and usually will) be very different for the different securities.

Chart 3.3.2. Danmarks Nationalbank's sales of 7% 2004 in March 1994, compared with the market price.



The variation in the number of monthly sales days will therefore be somewhat higher for individual securities. In 1994, each paper in the loan portfolio was sold on an average of 6.5 days per month. The number of monthly sales days has fluctuated between 1 and 13 for several securities.

The variations in the number of monthly sales days for individual securities is illustrated in Chart 3.3.3. by a short-term and a long-term paper.

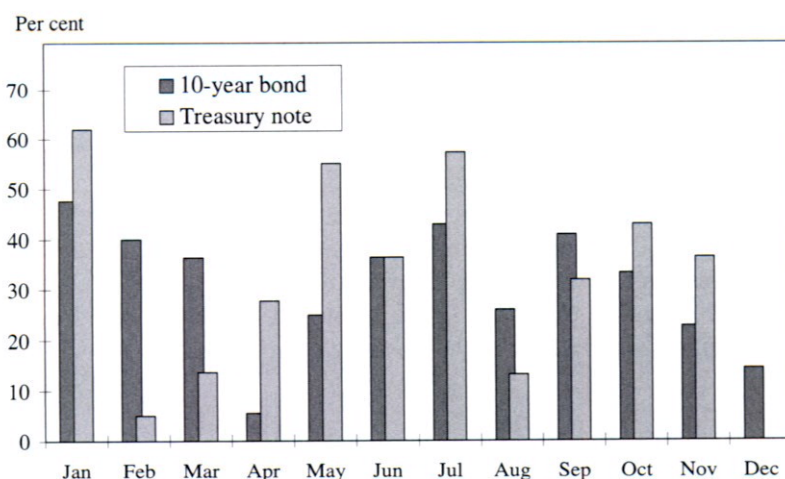
The Chart shows on what proportion of monthly trading days a 10-year bond and a Treasury note respectively were sold. The Chart shows some co-variation in the proportion of sales days for the securities, but also that there are months where there were regular sales in one paper and almost none in the other.

### 3.4. Procedure on Opening New Issues

Until 1993, Danmarks Nationalbank treated the opening day of new loans like any other trading day. However, this changed in 1994, recent years having shown that investor interest was often particularly high on the opening day. This great interest is very positive from the issuer's point of view, since a liquid series can be established quickly, thus facilitating sales in the ensuing period.



Chart 3.3.3. Proportion of trading days on which a 10-year government bond and a Treasury note were sold.



Note: 10-year bonds: January-November: 7% 2004; December: 8% 2006.  
 Treasury notes: January-June: Treasury note 1996 II; July-December:  
 Treasury note 1997 I.

After the opening of 7% government bonds 2004 on May 25, 1993, the opening procedure drew some criticism, since in a situation with many bids in the Match System, the sale was distributed in very small portions and the method did not ensure that investors experienced full market transparency.

On the opening of 6% Treasury note 1996 I on July 1, 1993, the Nationalbank's offering method was therefore adjusted. It was decided to quote a sharper first offer price than usual, but to maintain this price for a larger volume. However, not all market participants were prepared for this change and in conjunction with technical problems this resulted in some uncertainty.

As a consequence of this experience in 1993, the Nationalbank sought to ensure transparency on the opening day in advance by introducing a fixed framework for the opening procedure. This procedure was used for the first time in the beginning of 1994.

Approximately one week 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 (coupon, maturity and interest payment date), and opening date and time (typically 11.00 a.m.). Further information on the opening procedure is given at 9.00 a.m. on the opening day. At that time, it is notified how much will initially be

offered in the Match System at the time of opening, and the maximum amount that will be sold on the opening day. The specific amounts have varied from paper to paper opened in 1994, cf. Table 3.4.1. Most recently, it has also been notified for how long the first offer will remain in the Match System before the Nationalbank may choose to delete (the rest of) the offer from the system (typically half an hour). The sales price is not published before broker-dealers at the time of opening can see it from the Nationalbank's offer in the Match System.

The purpose of the new opening procedure is to create clear rules on the opening day. This improves market participants' basis for bidding in the trading systems. By notifying what amount is initially offered in the Match System, market participants are informed of how much they can count on being able to bid for at the opening price.

*Tabel 3.4.1. Sale on the opening day of new issues. Nominal value.*

Name	Opening day	Initial amount offered	Maximum amount to be sold	Amount sold	Opening price	Average issue price
		DKK billion			DKK per 100	
5.25% T-notes 96 II	Jan.3, 94	2.0	6.0	5.3	99.35	99.50
7% gov.bonds 2024	Apr.6, 94	1.0	3.0	1.8	96.25	96.35
6% gov.bonds 1999	Apr.14,94	4.0	7.0	5.0	97.95	97.96
6.25% T-notes 97 I	Jul.1, 94	3.0	6.0	1.4	96.85	96.86
8% gov.bonds 2006	Dec.5, 94	2.0	4.0	2.3	96.65	95.67
7.00% T-notes 97 II	Jan.4, 95	2.0	4.0	0.9 <sup>1)</sup>	97.05	97.05
8% gov.bonds 2001	Jan.9, 95	2.0	6.0	4.0	94.85	94.85

<sup>1)</sup> The Match System of the Copenhagen Stock Exchange broke down immediately after the opening of the issue and did not come back into function for the rest of the day.

At the same time as the new procedure was implemented, the initial amounts offered in the Match System were raised from a level of DKK 100-200 million to a level of DKK 1-4 billion. The increased initial amounts offered in the Match System have made it possible for market participants to buy relatively large quantities on the opening day at one single price.

The size of the initial offer in the Match System and the maximum amount to be sold are decided immediately before the opening, and depend on the perception of investor interest, the market situation and the gross borrowing requirement at the time of opening. Other factors may, however, also influence the decision.



Generally, broker-dealers have been satisfied with the introduction of a fixed framework for opening new series of government securities.

### 3.5. Timing of Sales

Over a whole year, the issue of government securities corresponds to the domestic borrowing requirement calculated as the net borrowing requirement plus redemptions of domestic loans, cf. Chapter 1.

Seasonal variations in the domestic borrowing requirement are very pronounced, especially due to the payment dates for the government debt, value added tax and certain other taxes. These variations result in alternate months with deficits and surpluses, cf. Chapter 1.

The monthly domestic borrowing requirement is naturally the basic figure in planning the issues of the month, but because of the seasonal pattern there is no point in very close tracking. There are several reasons for this. First, it is the aim to sell the government securities at the lowest possible cost. This means that securities are issued steadily and at times when demand is high. Secondly, it is considered important that government securities are issued on a continuous basis. This means that securities are issued even in months with no borrowing requirement. Furthermore, experience shows that issue on a continuous basis supports the liquidity of the smaller series.

The monthly borrowing requirement and the monthly issue of government securities in 1994 are shown in Chart 3.5.1.

During 1994 the difference between the monthly borrowing requirement and the actual borrowing ranged from positive figures of DKK 20 billion to negative figures of DKK 15 billion. The actual issue is typically less than the borrowing requirement in the months when Treasury bills mature (January, April, July and October), as the net sale of Treasury bills in these months is typically negative. Large positive figures are typical in months when the borrowing requirement is negative in itself. Treasury bills are included in the calculation of the domestic borrowing requirement and the issue of government securities on a net basis.

The data underlying Chart 3.5.1. are accumulated in Chart 3.5.2., which also shows the corresponding figures for 1993. The accumulated differences approach zero at the end of the year. The Chart shows that rather large discrepancies are not unusual during the year, and even though the accumulated differences between the actual borrowing and the borrowing requirement follow a very similar pattern in 1993 and 1994, the levels are quite different.

Chart 3.5.1. Monthly difference between the issue of government securities and the borrowing requirement.

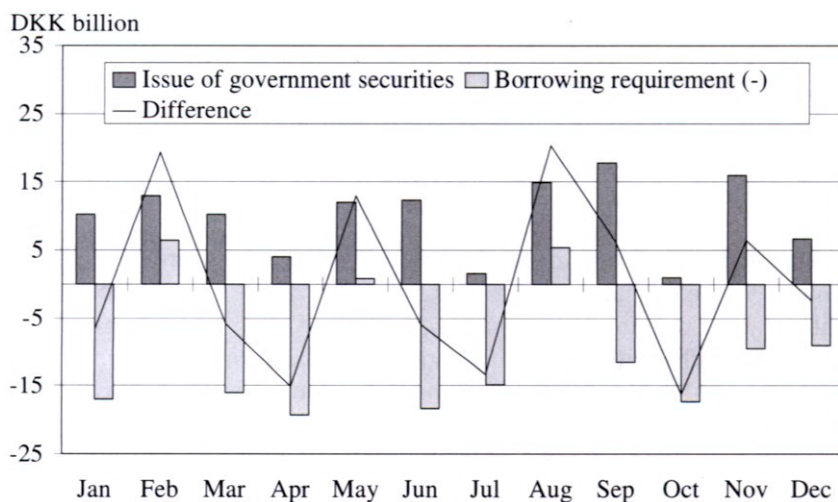
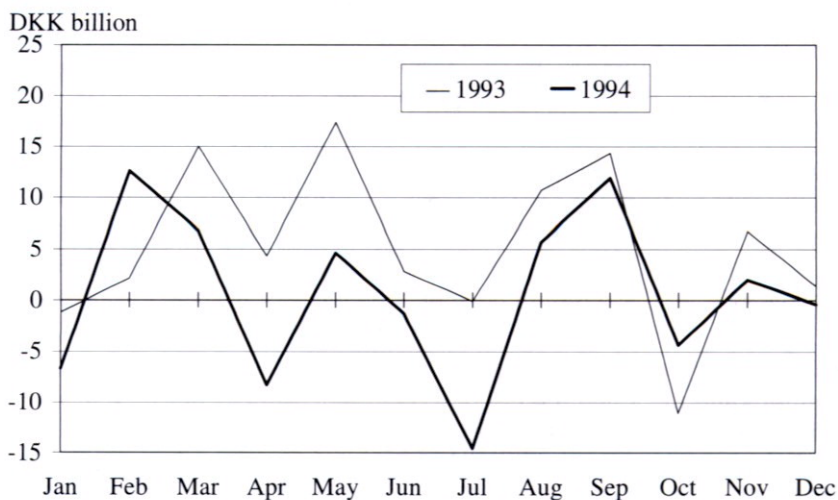


Chart 3.5.2. Difference between accumulated borrowing and the accumulated domestic borrowing requirement. End of month.





## Chapter 4.

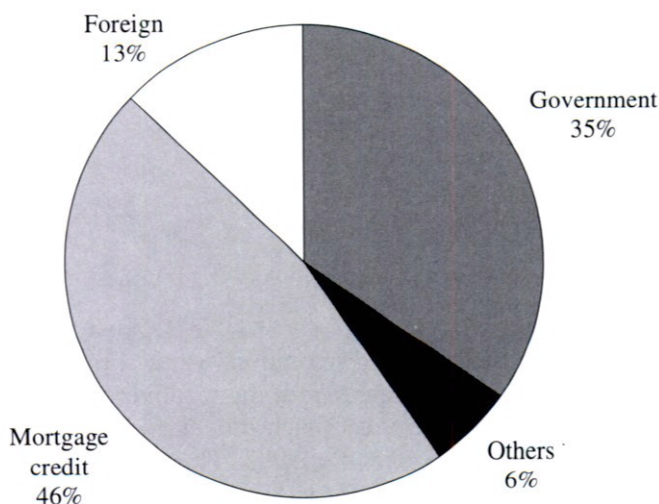
# The Danish Securities Market

### 4.1. Overview

Measured by total market value the Danish securities market is among the largest in Europe, with mortgage-credit bonds and government bonds as the dominant securities. At the end of 1994 the market value of listed bonds was DKK 1,702 billion (USD 279 billion) and the market value of listed shares was DKK 346 billion (USD 57 billion).

The main reason for this composition of the market is the long tradition in Denmark 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 4.1.1.

*Chart 4.1.1. The Danish bond market at the end of 1994. Nominal value.*



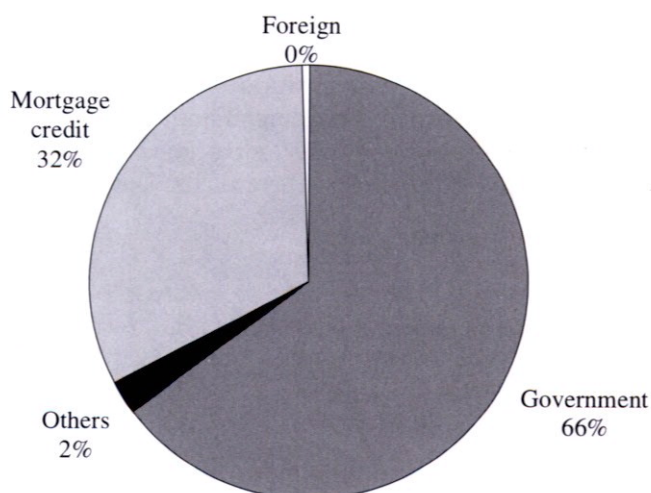
Source: Copenhagen Stock Exchange.

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

The listed foreign bonds are mainly securities issued by mortgage-credit institutes from Sweden denominated in SEK.

The bulk of the net issue of domestic securities in recent years has been in government securities. Although the total outstanding amount of mortgage-credit bonds decreased in 1994, there was a large gross issue activity by the mortgage-credit institutes, cf. below.

*Chart 4.1.2. Bond market turnover in 1994. Nominal value.*



Source: Copenhagen Stock Exchange.

In 1994, the average daily turnover on the Danish bond market was DKK 26 billion (USD 4 billion) in nominal value. From the beginning of 1994 repo-trades were separated from the turnover statistics for the Copenhagen Stock Exchange, and the turnover figures for 1994 are not comparable to turnover figures for 1993. The average daily turnover in the repo-market in 1994 amounted to DKK 38 billion (USD 6 billion).

Since 1990 government bonds have been the most traded bonds, cf. Chart 4.1.2. The most traded government bonds (8% 2003, 7% 2004 and 9% 1998) accounted for over 34 per cent of the total turnover in 1994.

Since September 1994 the most traded bond has been the current 10-year benchmark bond, 7% 2004. A mortgage-credit bond benchmark, 6% 2026, has developed strongly in 1994, cf. the section below on mortgage-credit bonds. The turnover in the mortgage-credit benchmark accounted for 7 per cent of the total turnover in 1994.

The turnover figures include trades reported to the Copenhagen Stock Exchange. Danish government bonds are, however, also eligible for settlement in Euroclear and CEDEL where the registered turnover of Danish government securities is significant.

## Government Securities

Since public finances began to show a deficit in the mid-1970s, the central government has been a major issuer of bonds. Whereas mortgage-credit bonds have traditionally covered the very long end of the market, government securities have been mainly short-term and medium-term in the form of Treasury bills, Treasury notes and government bonds with maturities of up to 10 years. A 30-year government bond was opened in 1994, however, but until now the issue activity has been limited. Government securities are issued as bullet loans in relatively few series and are generally very liquid.

The market for government securities is described in more detail in Chapters 1, 2 and 3.

## Mortgage-Credit Bonds

The mortgage-credit system is dominated by specialized mortgage-credit institutes which offer mortgages on residential as well as agricultural, commercial and industrial properties. These institutes finance long, typically 10 to 30-year (until 1970 60-year), mortgages by issuing corresponding mortgage-credit bonds. The total market for mortgage-credit bonds comprises almost 2000 different series.

The mortgage-credit market based on residential property comprises 6 institutes: Nykredit, Realkredit Danmark and BRFkredit are the three oldest institutes and have the largest market shares; Totalkredit, Danske Kredit and Unikredit have been established more recently and are owned by banks.

The non-residential mortgage market comprises the major mortgage-credit institutes and three other institutes: 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 (Mortgage Credit Fund of Danish Agriculture), which issues bonds against secondary mortgages on agricultural property.

Several types of mortgage bonds are issued, the most common being annuity bonds, but also serial bonds and index-linked bonds play an important role. The bonds are issued in series normally kept open from 1 to 3 years subject to the minimum coupon rate rule, cf. Chapter 2. Redemption payments are effected by drawing bonds for a nominal value corresponding to payments due from the debtors. The mortgage loans are typically callable at par value and the mortgage-credit bonds are called if the debtors repay their loans. Within most series all borrowers are jointly and severally liable for the payments due to bond holders.

The drop in long-term mortgage interest rates from a level of more than 10.5 per cent in 1992 to around 7.0 per cent at the beginning of 1994 made it profitable for many property owners to use the call option to refinance old loans with new ones with a coupon rate of 5, 6 or 7 per cent, predominantly with a coupon rate of 6 per cent.

A huge volume of 6 per cent mortgage bonds have therefore been issued at the expense of bonds with 8, 9, 10, 11, and 12 per cent coupon rate. The new 30-year bond (6% 2026) has developed into a benchmark with an outstanding amount of almost DKK 170 billion (USD 28 billion) at the end of 1994. A market-maker arrangement has been established for the 6% 2026 mortgage-credit bond under the auspices of the Danish Securities Dealers Association. Stockbrokers participating in the market-making agreement are obliged on request to quote two-way prices with a maximum spread of DKK 0.10 per 100 (10 ticks) in lots varying between DKK 10 and 25 million (at the end of 1994, 13 broker-dealers participated in this arrangement). The 6% 2026 bonds from the different mortgage-credit institutes are traded as a single instrument under the market-maker agreement, and the seller may choose a mortgage-credit bond from any of the six mortgage-credit institutes mentioned above.

## The Organization of the Danish Securities Market

The Danish securities market is organized as an integrated system consisting of the Copenhagen Stock Exchange, the FUTOP Clearing Centre and the Danish Securities Centre, which are interconnected electronically and are under the supervision of one supervisory authority - the Danish Financial Supervisory Authority (Finanstilsynet).

*The Copenhagen Stock Exchange* (Københavns Fondsbørs) 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.

*The Danish Securities Centre* (Værdipapircentralen, VP) is the organization where listed securities are registered and settled. As securities have been dematerialized (it is not possible to acquire physical securities, cf. Section 4.5 below), the Danish Securities Centre is the organization which registers the legal ownership rights to securities.

## 4.2. The Copenhagen Stock Exchange

Only professional securities trading companies and Danmarks Nationalbank may trade securities directly on the stock exchange.

Securities traders may become members of the Copenhagen Stock Exchange by paying a connection fee. A securities trader is a financial enterprise licensed with the approval of the Danish Financial Supervisory Authority and registered with the Danish Securities Centre for access to participate directly in the payments settlement of securities trading.

At end-1994, a total of 96 banks, stockbroking companies and mortgage-credit institutes held the status of securities traders, and of these a total of 26 companies were entitled to trade as broker-dealers on the Copenhagen Stock Exchange: 15 banks, 10 stockbroking companies and Danmarks Nationalbank.

There are no rules governing either the size or structure of commissions. Prices and fees are set entirely by competition. Large institutions usually deal with market-makers on a net basis, reflecting professional price spreads. Normally round lots vis-à-vis clients have a bid-offer spread of 10 ticks or less for liquid issues in the government and mortgage sectors of the bond market.

The trading floor of the stock exchange was abolished in 1987 after the introduction of an electronic system with continuous trading from 9.00 a.m. to 3.30 p.m., and the members trade from their own offices.

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 electronic trading systems consist of the Match System, the Accept System and the Electro-Broker System. To support trade outside the trading systems, an Interest System has furthermore been

established. Trades made outside the electronic trading systems must be reported to the Reporting System. The trade and trade supporting systems are described in more detail below:

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 each 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.

The *Accept System* is an electronic "noticeboard" on which securities dealers can see all bids and offers (prices as well as amounts) and the identity of the securities dealer making the bid/offer. A transaction is concluded when a dealer accepts the total amount of one of the bids or offers. The bids and offers must be in round lots of at least DKK 10,000.

In September 1994 a new trading system, the *Electro-Broker System*, was introduced. 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. the section below on market-making. Securities dealers 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 automatically reported to the information system.

The *Reporting System* is a system to register deals made outside the trading system (telephone trading). Broker-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.

Finally, a so-called *Interest System* has been established, which allows the members of the Stock Exchange to exchange information not accessible to outsiders. The Interest System is a trade supporting system which allows members of the stock exchange to indicate prices at which they are willing to trade.

Normal settlement of trading in bonds and notes takes place three business days after the transaction. Other settlement periods than the standard one may be chosen. For each trading day, the Copenhagen Stock Exchange publishes an official quotation list with information on price quotations, turnover and other relevant information concerning the market on the preceding day.



### 4.3. Market-Making in Government Securities

Two voluntary market-making arrangements exist for Danish government securities, the Voluntary Market-Making 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 current 10-year benchmark bond, 7% government bonds 2004. At the end of 1994 18 securities dealers participated in the agreement<sup>1)</sup> with amounts varying between DKK 10 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.

Securities dealers participating in the quote on request agreement are obliged to quote two-way prices with a maximum spread of 10 ticks when requested over the telephone for all the liquid government bonds except the 7% government bonds 2004, cf. the voluntary market-making agreement. At the end of 1994 the 18 securities dealers participating in the voluntary market-making agreement also participated in the quote on request agreement.

Under both market-making schemes, market-makers can freely accept the offer or refrain, but in the latter case the market maker is obliged to quote a two-way price himself.

### 4.4. Derivatives on Danish Securities

The official trading place for futures and options on Danish government bonds is the Copenhagen Stock Exchange. Contracts entered into outside the Stock Exchange must be reported to the FUTOP Clearing Centre in order to be covered by its guarantee. The prime function of the FUTOP Clearing Centre is to guarantee the performance of clearing members, which represent all major banks, savings banks and stock-broking companies, in registering options and futures contracts until expiry.

The value of the respective rights and commitments of the parties is settled in cash. There is no physical delivery of securities. Futures are marked to market daily, and occasionally more than once a day.

<sup>1)</sup> Arbejdernes Landsbank, ABN AMRO Hoare Govett, Alfred Berg Borsmæglerselskab, Amtssparekassen Fyn, Banque Indosuez, Carnegie Kreditinstitut, Codan Bank, Den Danske Bank, Girobank, Gudme Raaschou Bankaktieselskab, Jyske Bank, Nykredit Bank, Samson Borsmæglerselskab, Sparekassen Bikuben, Sparekassen Nordjylland, Svenska Handelsbanken, Sydbank Sønderjylland and Unibank.

Clearing members are obliged to deposit margins for their own account as well as for their clients. 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. Contracts will not be registered in the event of insufficient margin. For a futures contract initial margin must be posted by buyer and seller alike. Likewise the options writer is required to post premium as well as initial margin.

Danish options and futures contracts are non-terminable and non-tradeable, but can be sold back - or liquidated - via the member with whom the original contract was concluded. Prices of listed options and futures appear from the official list published by the Copenhagen Stock Exchange. Presently, all options contracts are of the European type. The contract unit is DKK 1 million for bond futures and 1 future for options.

Two market-making agreements exist. Under the auspices of the FUTOP Clearing Centre a Specialized Market-Maker agreement has been arranged in the Accept System of the Copenhagen Stock Exchange for all the listed contracts. 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 government benchmark bond.

In 1994 more than 70% of the total turnover in the Danish futures and options market (nominal value) was in instruments based on the 5 and 10-year government benchmark bonds, with futures by far the most popular instrument with approximately 90% of the total turnover. The most traded instrument was the future based on 8% government bonds 2003 followed by the future based on the 6% mortgage-credit bond maturing in 2026 and futures based on the 3-month CIBOR (Copenhagen Interbank Offered Rate) on the Danish futures and options market.

Compared to other futures markets in Europe the turnover on the Danish futures and options market is rather limited relative to the market for the underlying bonds (the turnover of futures based on the 10-year government benchmark was in 1994 around 34 per cent of the turnover of the underlying bond measured in nominal value). The efficient trading arrangements on the cash market are one of the reasons for this relatively low turnover on the futures market.

## 4.5. Settlement

The Danish Securities Centre (Værdipapircentralen, VP) is responsible for dematerialization of issues, and registration of ownership and other rights to securities listed on the Copenhagen Stock Exchange. VP is also



responsible for settlement of securities trades. VP is a private non-profit organization based on the Securities Centre Act from 1980. This computer centre services the financial sector as a whole and about 300 banks, savings banks, stockbroking companies, mortgage-credit institutes, institutional investors, and Danmarks Nationalbank are connected to the centre. The costs are paid by the customers using the centre, i.e. issuers, investors and intermediaries.

Since 1983, all listed Danish bonds have been registered in dematerialized form in the VP system. In 1988 Danish shares, investment certificates, etc. were dematerialized. 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. Each bank (or stockbroking company) keeps a VP account on which it makes registrations concerning its own holdings. In addition, it keeps a number of VP accounts on which it makes registrations for each of its customers. Each VP account contains information concerning the securities, ownership and other rights, and details a bank account to which VP can transfer payments of interest, dividend, etc. on the holdings with VP. The owner of the securities may register 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 with 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. VP uses a netting procedure in the settlement of trades, and traders may simultaneously buy and sell the securities with normal settlement. The legal basis has been provided for making settlements more than once a day, although technically this is not feasible today.

Payments are cleared through Danmarks Nationalbank. Settlement takes place via authorized institutions' accounts with Danmarks Nationalbank.

The settlement system ensures delivery-versus-payment for all securities transactions among participants in the clearing and settlement process.

## 4.6. International Trading and Cross-Border Settlement

The Danish financial market is open to foreign investors, issuers and intermediaries. The remaining foreign exchange restrictions were

abolished in 1988. There is no withholding tax, turnover tax or other taxes on Danish bonds purchased by foreign investors. It is possible for foreign financial institutions established in Denmark (including branches) to become members of the Copenhagen Stock Exchange on the same terms as Danish financial institutions. It is furthermore possible for non-resident investors trading in Danish government securities outside Denmark to participate in the VP clearing system via Danish intermediaries or via foreign intermediaries established in Denmark. The technical obstacles to foreign access to the domestic systems are gradually being removed. From January 1, 1996 planned legislation will make it possible for foreign financial institutions to participate in the trading on the Copenhagen Stock Exchange without being established in Denmark.

Danish government securities are eligible for clearing via Euroclear and CEDEL and it is possible to settle transactions in government bonds via these systems as well as VP.

To simplify international trading and cross-border settlement of Danish securities, VP has established a direct link with Euroclear, which has made it possible to make same-day transfers of securities from VP to Euroclear. Certain technical problems still exist, but VP intends to solve these problems in the near future. Moving securities from Euroclear to VP for technical reasons always implies a loss of at least one disposal day and in special circumstances up to two days after the settlement date.

Until these technical problems have been solved, the Ministry of Finance, with Danmarks Nationalbank acting as its fiscal agent, has offered a temporary location swap facility for certain government securities which enables movement between VP and Euroclear to take place without the loss of disposal days<sup>1)</sup>. At the end of 1994 the location swap facility comprised all the important government securities.

#### 4.7. Repurchase Agreements in Danish Government Securities

As an element of the monetary-policy instruments it is possible for Danish banks, including branches in Denmark of foreign banks, to enter

<sup>1)</sup> Technically, when a location swap is executed, Danmarks Nationalbank simultaneously enters into two spot transactions on behalf of the Ministry of Finance, e.g.: 1) Danmarks Nationalbank sells securities from a Euroclear account to the counterpart and 2) Danmarks Nationalbank buys securities from the same counterpart with delivery in VP. Both trades are against payment.

into repurchase agreements (sale and repurchase agreements) in government securities with Danmarks Nationalbank.<sup>1)</sup>

In July 1993 Danmarks Nationalbank extended the range of eligible securities to all domestic government securities denominated in DKK issued as from 1975 and listed on the Copenhagen Stock Exchange, apart from government securities falling due before settlement of the repurchase agreements.

The possibility of entering into repurchase arrangements in Treasury bills was an important factor behind the establishment of an organized inter-bank market for collateralized lending based on Treasury bills.

The opportunity of entering into repurchase agreements with Danmarks Nationalbank in all domestic government securities has meant that repurchase arrangements in government paper have become increasingly important. An organized market has evolved strongly.

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<sup>1)</sup> See Danmarks Nationalbank's Report and Accounts as well as the quarterly Monetary Review for a further description of the Danish monetary-policy instruments.





## Appendix

**Table 1.**

*Central Government Debt 1984-1994.*

DKK million	1984	1985	1986
A. Domestic debt			
I. Domestic debt denominated in DKK <sup>1)</sup>			
1. Fixed-rate bonds .....	288,959	302,749	282,451
2. Floating-rate bonds .....	3,400	27,125	39,935
3. Lottery bonds .....	1,200	1,200	1,200
4. Compulsory savings .....	-	1,404	1,497
5. Treasury notes .....	37,800	28,760	27,500
6. Treasury bills .....	-	-	-
7. Government securities held by the Danish State	-50	-41	-30
Domestic debt denominated in DKK, total .....	331,309	361,197	352,553
II. Domestic debt denominated in ECU			
1. Fixed-rate bonds .....	-	-	-
2. Government securities held by the Danish State	-	-	-
Domestic debt, total .....	331,309	361,197	352,553
III. Foreign debt			
1. In USD .....	53,634	42,056	55,313
2. In CHF .....	7,154	10,513	12,160
3. In DEM .....	14,995	15,778	21,131
4. In ECU .....	600	2,588	5,874
5. In JPY .....	13,110	11,775	9,874
6. In other currencies .....	9,041	10,220	15,561
7. Government bonds held by the Danish State <sup>2)</sup> .	-328	-545	-2,403
Foreign debt, total .....	98,206	92,385	117,450
Domestic and foreign debt, total .....	429,515	453,582	470,003
Domestic and foreign debt, per cent of GDP .....	76.0	73.7	70.5
B. Government deposits with the central bank .....	-14,336	-20,752	-51,448
C. The Social Pension Fund			
1. Government securities .....	-21,451	-24,133	-25,543
2. Other securities .....	-61,061	-65,278	-69,491
The Social Pension Fund, total .....	-82,512	-89,411	-95,034
Net government debt (A-B-C) .....	332,667	343,419	323,521
Net government debt, per cent of GDP .....	58.8	55.8	48.5

Note: + = liabilities, - = assets.

<sup>1)</sup> Does not include holdings of the Ministry of Finance in the location swap facility.

<sup>2)</sup> Book value at acquired value. From end of 1993 adjusted to exchange rate value.

1987	1988	1989	1990	1991	1992	1993	1994
243,212	215,492	221,592	229,221	252,481	316,690	357,346	409,565
56,935	82,785	88,410	85,010	85,010	57,147	41,241	30,345
1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
1,464	1,425	1,375	864	392	-	-	-
43,675	54,085	64,550	68,850	74,050	71,150	94,200	11,705
-	-	-	21,350	49,250	55,485	58,339	56,238
-21	-18	-11	-5	-1	0	-	-
346,465	354,969	377,116	406,490	462,382	501,672	552,326	609,053
-	-	-	-	-	9,827	9,824	9,698
-	-	-	-	-	-	-	-970
346,465	354,969	377,116	406,490	462,382	511,499	562,150	617,781
44,637	32,983	27,624	15,556	17,103	37,802	50,889	24,913
16,572	20,452	17,919	21,033	15,785	13,952	20,914	18,393
26,799	29,374	30,034	36,700	28,464	23,758	47,223	42,772
10,191	14,480	16,970	18,103	18,025	14,942	9,364	5,576
13,781	12,718	10,156	3,597	1,866	3,159	5,612	10,419
15,657	14,326	13,328	24,112	11,096	11,019	31,610	29,483
-1,516	-1,569	-1,574	-1,126	-1,374	-1,151	-1,338	-1,784
126,211	122,764	114,457	117,975	90,965	103,482	164,274	129,782
472,586	477,733	491,573	524,465	553,347	614,981	726,424	747,563
67.5	65.3	64.1	65.6	66.8	72.2	83.2	79.8
-57,960	-39,855	-35,254	-45,206	-11,649	-30,927	-88,781	-56,910
-27,667	-27,009	-30,212	-36,193	-38,872	-43,611	-45,270	-50,143
-73,091	-79,215	-81,164	-82,254	-86,836	-88,583	-93,105	-96,689
-100,758	-106,224	-111,376	-118,447	-125,708	-132,194	-138,375	-146,832
313,868	331,654	344,943	360,812	415,990	451,860	499,268	543,821
44.8	45.3	45.0	45.2	50.2	53.1	57.2	57.7

**Table 2.*****Domestic Government Securities Issued in 1994<sup>1)</sup>*****Nr. 218, 9% government bonds 1998 (9 pct. stående lån 1998)**


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Issued in 1994, DKK million .....	100
Interest payable .....	November 15
Stock exchange code .....	DK000991554-8
Issue commenced .....	January 2, 1989
Redemption date .....	November 15, 1998

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**Nr. 257, 7% government bonds 2004 (7 pct. stående lån 2004)**

Issued in 1994, DKK million .....	42,300
Interest payable .....	December 15
Stock exchange code .....	DK000991783-3
Issue commenced .....	May 25, 1993
Redemption date .....	December 15, 2004

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**Nr. 258, Treasury bills 1994 II (Skatkammerbevis 1994 II)**

Issued in 1994, DKK million .....	2,820
Interest payable .....	-
Stock exchange code .....	-
Issue commenced .....	July, 1993
Redemption date .....	April 5, 1994

---

**Nr. 259, 6% Treasury notes 1996 I (6,00 pct. statsgældsbevis 1996 I)**

Issued in 1994, DKK million .....	3,528
Interest payable .....	February 10
Stock exchange code .....	DK000991791-6
Issue commenced .....	July, 1 1993
Redemption date .....	February 10, 1996

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**Nr. 260, Treasury bills 1994 III (Skatkammerbevis 1994 III)**

Issued in 1994, DKK million .....	11,695
Interest payable .....	-
Stock exchange code .....	-
Issue commenced .....	October 1, 1993
Redemption date .....	July 1, 1994

---

**Nr. 261, Treasury bills 1994 IV (Skatkammerbevis 1994 IV)**

Issued in 1994, DKK million .....	29,810
Interest payable .....	-
Stock exchange code .....	-
Issue commenced .....	January 3, 1994
Redemption date .....	October 3, 1994

---



**Nr. 262, 5.25 % Treasury notes 1996 II (5,25 pct. statsgældsbevis 1996 II)**

Issued in 1994, DKK million	18,170
Interest payable	August 10
Stock exchange code	DK000991805-4
Issue commenced	January 3, 1994
Redemption date	August 10, 1996

**Nr. 263, Treasury bills 1995 I (Skatkammerbevis 1995 I)**

Issued in 1994, DKK million	24,496
Interest payable	-
Stock exchange code	DK000980501-2
Issue commenced	April 5, 1994
Redemption date	January 2, 1995

**Nr. 264, 7 % government bonds 2024 (7 pct. stående lån 2024)**

Issued in 1994, DKK million	5,537
Interest payable	November 10
Stock exchange code	DK000991813-1
Issue commenced	April 6, 1994
Redemption date	November 10, 2024

**Nr. 265, 6 % government bonds 1999 (6 pct. stående lån 1999)**

Issued in 1994, DKK million	41,241
Interest payable	December 10
Stock exchange code	DK000991821-1
Issue commenced	April 14, 1994
Redemption date	December 10, 1999

**Nr. 266, Treasury bills 1995 II (Skatkammerbevis 1995 II)**

Issued in 1994, DKK million	22,352
Interest payable	-
Stock exchange code	DK000980536-8
Issue commenced	July 1, 1994
Redemption date	April 3, 1995

**Nr. 267, 6.25 % Treasury notes 1997 I (6,25 pct. statsgældsbevis 1997 I)**

Issued in 1994, DKK million	18,317
Interest payable	February 10
Stock exchange code	DK000991856-7
Issue commenced	July 1, 1994
Redemption date	February 10, 1997

Table 2 - continued

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**Nr. 268, Treasury bills 1995 III (Skatkammerbevis 1995 III)**

Issued in 1994, DKK million .....	9,390
Interest payable .....	-
Stock exchange code .....	DK000980544-2
Issue commenced .....	October 3, 1994
Redemption date .....	July 3, 1995

---

**Nr. 269, 8% government bonds 2006 (8 pct. stående lån 2006)**

Issued in 1994, DKK million .....	2,595
Interest payable .....	March 15
Stock exchange code .....	DK000991864-1
Issue commenced .....	December 5, 1994
Redemption date .....	March 15, 2006

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<sup>1)</sup> Does not include holdings of the Ministry of Finance in the location swap facility.

**Table 3.***Domestic Central Government Debt. End of 1994<sup>1)</sup>.*

Stock exchange code	Coupon %	Name	Issue Period <sup>2)</sup>	Redemption date	Nominal amount <sup>1)</sup> (DKK million)
<b>Government bonds, fixed interest rate</b>					
<b>Bullet loans</b>					
DK000991422-8	10	Stående lån 1996	Mar.24,88-Jul.5,88	Nov.15, 1996	4,200.0
DK000991503-5	9	Stående lån 1996	Jul.1,88-Jun.29,90	Nov.15, 1996	27,600.0
DK000991554-8	9	Stående lån 1998	Jan.2,89-Jun. 29,90 and Jan.1,92-Mar.31,94	Nov.15, 1998	59,400.0
DK000991619-9	9	Stående lån 2000	Jan.2,90-Dec.30,92	Nov.15, 2000	59,150.0
DK000991643-9	9	Stående lån 1995	Jul.2,90-Dec.30,92	Nov.15, 1995	31,240.0
DK000991716-3	8	Stående lån 2003	Jan.2,92-Dec.30,93	May 15, 2003	69,000.0
DK000991864-1	8	Stående lån 2006	Dec.5,94-	Mar.15,2006	2,595.0
DK000991783-3	7	Stående lån 2004	May.25,93-Dec.5,94	Dec.15, 2004	74,450.0
DK000991813-8	7	Stående lån 2024	Apr.6,94-	Nov.10,2024	5,537.0
DK000991821-1	6	Stående lån 1999	Apr.14,94-Dec.30,94	Dec.10,1999	41,241.0
<b>Government bonds, fixed interest rate</b>					
<b>Serial loans</b>					
DK000990302-3	4.5	S 1997 <sup>3)</sup>	Dec.10.,52-Sep.12,58	Oct.15, 1997	39.5
DK000990329-6	5	S 2007 <sup>3)</sup>	Oct.20,53-Sep.12,58	Sep.15, 2007	71.6
DK000990272-8	4	S 2017 <sup>3)</sup>	Nov.29,55-Sep.12,58	Jun.15, 2017	121.1
DK000990493-0	12	S 2001	Oct.6,80-May.9,83	Feb.15, 2001	18,742.5
DK000990736-2	10	S 1999	May.10,83-Jul.12,85	Jul.15, 1999	5,866.3
DK000990744-6	10	S 2004	May.10,83-Aug.30,85	Oct.15, 2004	9,480.0
DK000990892-3	10	S 1995	Oct.15,84-Aug.30,85	Apr.15, 1995	780.0
DK000991015-0	10	S 2001	Jul.15,85-Aug.30,85	Jul.15, 2001	3.5
<b>Government bonds, fixed interest rate</b>					
<b>Perpetuals</b>					
DK000990159-7	3.5	Dansk Statslån 1886 <sup>3)</sup> Uamortisabelt	Dec.11,1886	-	46.2
...	5	Dansk Islandsk Fond 1918 Uamortisabelt	Jun.1,1918	-	1.0
<b>Government bonds, floating interest rate</b>					
<b>Bullet loans</b>					
DK000990048-4	Var.	Stående lån 1995	Nov.19,84-Jan.15,86	Jan.15, 1995	9,623.0
DK000990064-1	Var.	Stående lån 1996	Jan.15,86-Dec.30,86	Jan.15, 1996	3,862.0
DK000990080-7	Var.	Stående lån 1997	Jan.2,87-Jan.6,88	Jan.15, 1997	6,462.0
DK000990102-9	Var.	Stående lån 1998	Jan.4,88-Dec.30,88	Jan.15, 1998	6,052.0
DK000990129-2	Var.	Stående lån 1999	Jan.2,89-Dec.28,90	Nov.20, 1999	4,346.0



Table 3- continued

Stock exchange code	Coupon %	Name	Issue Period <sup>2)</sup>	Redemption date	Nominal amount <sup>1)</sup> (DKK million)
<b>Treasury notes</b>					
DK000991767-6	9.75	Statsgældsbevis 1995 I	Oct.1,92-Jun.30,93	Feb.10, 1995	27,407.3
DK000991775-9	9.25	Statsgældsbevis 1995 II	Jan.4,93-Dec.30,93	Aug.10, 1995	26,283.0
DK000991791-6	6.00	Statsgældsbevis 1996 I	Jul.1,93-Jan.30,94	Feb.10, 1996	21,528.0
DK000991805-4	5.25	Statsgældsbevis 1996 II	Jan.3,94-Jun.30,94	Aug.10,1996	18,170.0
DK000991856-7	6.25	Statsgældsbevis 1997 I	Jul.1,94-Dec.30,94	Feb.10,1997	18,317.0
<b>Treasury bills</b>					
DK000980455-2	0	Skatkammerbevis 1995 I	Apr.5,94-Oct.3,94	Jan.2, 1995	24,496.0
DK000980463-8	0	Skatkammerbevis 1995 II	Jul.1,94-	Apr.3, 1995	22,352.0
DK000980471-2	0	Skatkammerbevis 1995 III	Oct.3,94-	Jul.3, 1995	9,390.0
<b>Lottery bonds</b>					
DK000990019	3.5	Præmieobligationslån 1948/98	Jun.20,48	Jun.20, 1998	100.0
DK000990027	4	Præmieobligationslån 1954/99	Oct.7,54	Oct.1, 1999	100.0
DK000990035	3.5	Præmieobligationslån 1959/98	Dec.1,58	Dec.1, 1998	100.0
DK000990043	7	Præmieobligationslån 1965/2010	Sep.22,65	Sep.22, 2010	100.0
DK000990051	7	Præmieobligationslån 1969/2009	Oct.1,69	Dec.31, 2009	100.0
	8	Præmieobligationslån 1977/2002:			
DK000990078	I		Apr.14,77	Feb.15, 2002	100.0
DK000990086	II		Jun.3,77	May 15, 2002	100.0
DK000990094	III		Jun.24,77	Jun.15, 2002	100.0
DK000990108	IV		Jun.28,77	Jul.15, 2002	100.0
DK000990116	V		Aug.30,77	Aug.15, 2002	100.0
DK000990124	10	Præmieobligationslån 1980/2005	Oct.28,80	Jul.1, 2005	200.0
<b>Domestic central government debt denominated in DKK .....</b>					<b>609,053.0</b>
<b>Domestic debt denominated in ECU</b>					
DK000991740-3	8.5	Stående lån ECU			
	1.3 billion 2002		24.Apr.92	Apr. 24, 2002	9,697.5
Held by the Danish State					-969.7
<b>Total .....</b>					<b>8,727.8</b>
<b>Domestic central government debt .....</b>					<b>617,780.8</b>

<sup>1)</sup> Does not include holdings of the Ministry of Finance in the location swap facility.

<sup>2)</sup> The issue period refers to the period, the series have been open for issue. Series still open for issue at the beginning of 1995 is marked with a '-' after the first day of issue. Certain securities are only sold at one single date. For these securities only this date is mentioned.

<sup>3)</sup> May be redeemed by the State with three months notice.



**Table 4.**

*Monthly Distribution of the Central Government Payments.  
Estimate based on the Finance Act for 1995.*

DKK million	Jan.95	Feb.95	Mar.95	Apr.95
Out-going payments .....	33,623	36,961	29,089	34,159
In-going payments .....	-25,857	-52,330	-17,838	-11,793
<b>Net borrowing requirement .....</b>	<b>7,776</b>	<b>-15,369</b>	<b>11,252</b>	<b>22,367</b>
<i>Redemption of Domestic Debt:</i>				
Governments bonds .....	9,623	2,678	0	780
Treasury notes .....	0	27,407	0	0
<b>Gross borrowing requirement .....</b>	<b>17,399</b>	<b>14,716</b>	<b>11,252</b>	<b>23,147</b>

Note: Compared to the Finance Act for 1995, the total redemptions of Government bonds and Treasury notes as well as the gross borrowing requirement are reduced by DKK 1.4 billion as a result of extraordinary redemptions in December 1994.



May 95	Jun.95	Jul.95	Aug.95	Sep.95	Oct.95	Nov.95	Dec.95	1995
33,095	29,127	34,575	33,479	27,820	33,236	47,945	38,642	411,752
-47,797	-13,311	-22,342	-49,049	-15,909	-15,532	-65,940	-31,827	-369,514
<b>-14,702</b>	<b>15,816</b>	<b>12,233</b>	<b>-15,571</b>	<b>11,911</b>	<b>17,704</b>	<b>-17,995</b>	<b>6,815</b>	<b>42,238</b>
0	5	1,174	0	106	961	31,240	0	46,567
0	0	0	26,283	0	0	0	0	53,690
<b>-14,702</b>	<b>15,822</b>	<b>13,407</b>	<b>10,713</b>	<b>12,017</b>	<b>18,665</b>	<b>13,245</b>	<b>6,815</b>	<b>142,495</b>

## Glossary

<b>Annuitetslån:</b>	Annuity; loan redeemed in equal regular (e.g. annual) payments (interest plus repayment of principal).
<b>Børs, fondsbørs:</b>	Stock exchange.
<b>Børshandler (børsmægler):</b>	Stockbroker, broker-dealer.
<b>Danske stat:</b>	Kingdom of Denmark.
<b>DKK:</b>	Krone(r), Danish currency.
<b>Emission:</b>	Issue.
<b>Fondshandler:</b>	Stockbroker or bank authorized to trade securities.
<b>Garantifonden for Danske Optioner og futures (FUTOP):</b>	FUTOP Clearing Centre
<b>Inkonverterbar obligation:</b>	Non-callable bond.
<b>Genkøbsforretning:</b>	Repurchase agreement (repo).
<b>Københavns Fondsbørs (KF):</b>	Copenhagen Stock Exchange (CSE).
<b>Konverterbar obligation:</b>	Callable bond.
<b>Kroneobligationer:</b>	Bonds, notes etc. denominated in DKK.
<b>Løbetid:</b>	Maturity.
<b>Mindsterente:</b>	Minimum coupon rate.
<b>Obligation:</b>	Bond.
<b>Præmieobligation:</b>	Lottery bond.
<b>Realkredit:</b>	Mortgage-credit.

<b>Rente:</b>	Interest rate.
<b>Serie:</b>	Series, issue; securities issued with identical characteristics. In the Danish VP system the securities in a series are indistinguishable, as they have no serial number.
<b>Serielån:</b>	Loan redeemed in equal regular (e.g. annual) instalments.
<b>Skatkammerbevis:</b>	Treasury bill.
<b>Statsgældsbevis:</b>	Treasury note.
<b>Stående lån:</b>	Bullet loan; total amount of the loan redeemed on the final due date.
<b>Termin:</b>	Due date.
<b>Varighed:</b>	Duration.
<b>Værdipapircentralen (VP):</b>	Danish Securities Centre.