

Central government borrowing and debt 2023

Contact**Kristine Rasmussen**
krr@nationalbanken.dk+45 3363 6117

In 2023, government debt fell for the third year in a row to its lowest level in more than 40 years. The low national debt underpins the fact that the central government has maintained the highest possible credit rating (AAA/Aaa) from the three largest international credit rating agencies for 20 years. Despite a surplus in government finances, domestic government bonds totalling around DKK 62 billion were issued in 2023. It is important to maintain a well-functioning and liquid government securities market that ensures the central government continuous access to stable and cheap funding. The central government's total interest expenses fell in 2023 from DKK 9.4 billion to DKK -1.7 billion, corresponding to -0.06 per cent of GDP. The decrease was driven, among other things, by gains on the buy-backs of bonds and increasing interest income from the central government's account deposits at Danmarks Nationalbank.

**Lowest national debt
in more than 40 years**

A surplus in government finances led to a decrease in Danish government debt to DKK 294 billion at the end of 2023, corresponding to 10.5 per cent of GDP. This is the lowest level in relation to Danish GDP in more than 40 years.

**Important to maintain
government securities market**

To maintain a well-functioning and liquid government securities market, in 2023 the central government opened a new 10-year bond, a 10-year green bond and a dollar-denominated bond under the central government's EMTN programme.

**Low interest costs
despite rising interest rates**

The central government's interest costs fell to DKK -1.7 billion in 2023 despite rising interest rates. Higher market interest rates affect the interest expenses on the new debt that the central government raises in the future.

Why is it important?

The publication *Central government borrowing and debt* is Danmarks Nationalbank's annual report on government debt. There can be several reasons why a state incurs debt. For example, it may be due to considerations such as economic cycles or public investment spending. In Denmark, Danmarks Nationalbank manages the central government debt.

Lowest national debt in over 40 years



Note: Denmark's national debt from 1953-2023.
Source: Statistics Denmark.



Keywords

Central government borrowing and debt

Central government debt

01

Summary of the year in review

Robust Danish economy despite interest rate hikes and financial turmoil

The Danish economy was strong at the end of 2023, characterised by high employment and significant balance of payments and public finance surpluses. The main scenario in the government's latest forecast in the *Economic Survey* continues to be a soft landing for the Danish economy.¹

2023 was another year characterised by significant uncertainty in the financial markets, with continued monetary tightening in the face of persistently high inflation and financial and geopolitical turmoil. Inflation remained high for much of 2023, but slowed significantly towards the end of the year. This led to rising market expectations of imminent monetary easing.

Danish government yields have generally followed the global interest rate trend, with a largely unchanged yield spread to Germany of around 0.2 percentage points at the end of the year. Despite interest rate hikes under monetary policy, interest rates on both Danish 2- and 10-year government bonds remained largely unchanged.

Government debt fell in 2023 to its lowest level in more than 40 years

The central government surplus reduced the national debt by DKK 29 billion to DKK 294 billion in 2023. This means that the national debt has almost halved since the Corona crisis in 2020 and amounted to 10.5 per cent of gross domestic product, GDP, the lowest level since 1977. The decrease was mainly due to domestic debt repayments.

Interest costs fell to record low levels

In 2023, total interest costs on government debt fell to DKK -1.7 billion. The decrease is mainly due to lower debt and buy-back of government bonds at lower prices than the issue price. The average yield on government bonds rose to the highest level in 10 years. Despite rising interest rates, the central government's interest costs remained low, as rising interest rates only slowly feed through to total financing costs.

Government issuance followed the 2023 target

In line with strategy, in 2023 the Danish government issued domestic government bonds worth approximately DKK 62 billion via tap sales and auctions. During 2023, the central government opened a new 10-year government bond, a new green 10-year government bond and a US dollar bond under the central government's EMTN (Euro Medium Term Note) programme. The issuance of inflation-linked bonds continued in 2023, and the strategy remains to build the programme to a total outstanding amount of DKK 40-60 billion.

¹ See Ministry of Economic Affairs, *Economic Survey, December 2023* ([link](#)).

02 Central government debt

Surplus on state finances

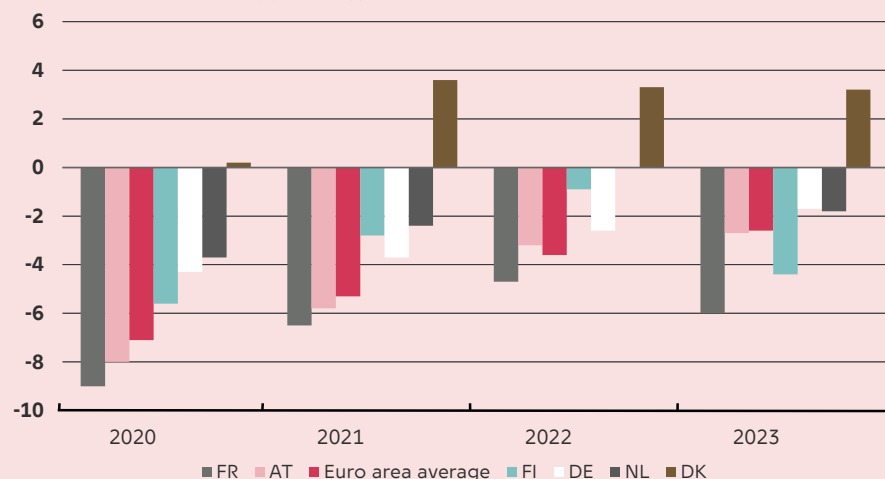
For the third year in a row, the net cash balance was in surplus.² The central government surplus for 2023 was DKK 28.9 billion, equivalent to 1 per cent of GDP, and should be seen in light of the fact that the Danish economy has entered a new phase of moderate growth as price increases and higher interest rates have affected economic activity. However, activity has been fuelled by a strong pharmaceutical industry, which has also contributed to a significant increase in exports.

Government finances are also healthy from a European perspective. In contrast to comparable countries, the Danish state has had a surplus in public finances since 2020, as opposed to comparable countries that have operated with a deficit in the same years, see Chart 1.

CHART 1

Danish public finances are healthy in a European perspective

General government surplus(+)/deficit (-), per cent of GDP



Note: General government surplus as a share of GDP compared to comparable countries in the Euro area.

Source: Eurostat.

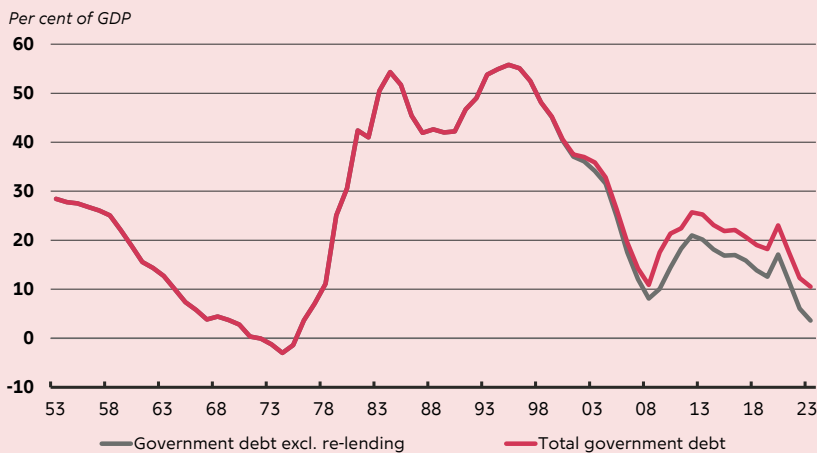
² The central government surplus/deficit uses the net cash balance, which reflects the total actual receipts and disbursements that flow through the central government in a given year. The net cash balance is thus an expression of the central government budget's liquidity effect in the current year and will therefore deviate from the actual government surplus for 2023, cf. the principles of the national accounts.

Government debt at lowest level in more than 40 years

The central government budget surplus contributed to reducing the national debt by DKK 29 billion to DKK 294 billion by the end of 2023. In nominal terms, government debt has almost halved since the Corona crisis in 2020. Measured in relation to the size of Denmark, the national debt was 10.5 per cent of GDP at the end of 2023, which is the lowest level in more than 40 years, see Chart 2.

CHART 2

Government debt continues to fall



Note: Denmark's national debt with and without on-lending to state-owned companies.
Source: Statistics Denmark.

Government debt is calculated as the total domestic and foreign debt less the assets managed together with central government debt, see Box 1. The decrease in the national debt in 2023 mainly covers increased amortisation of domestic debt, see next chapter. A continually increasing share of the central government's gross debt is offset by loans to government on-lending companies to finance major infrastructure projects, e.g. construction of the Fehmarnbelt project. Adjusted for on-lending, the national debt amounted to DKK 101 billion at the end of 2023, corresponding to 4 per cent of GDP.

Government debt policy in light of declining borrowing needs

Since 2011, government surpluses have continuously reduced government debt through lower net government issuance, i.e. a reduction in issuance and/or increased debt repayments. When central government's borrowing requirement is reduced, the need to issue Danish government securities is also reduced. Central government can also repay the debt. This was the case, for example, in the years leading up to the financial crisis and after the Coronavirus crisis in 2020,³ see Chart 3 and 4.

³ The good opportunities to repay debt after the Corona pandemic arose from the fact that the central government issued large amounts of debt in connection with the outbreak of the pandemic that subsequently turned out not to match the realised and lower financing needs. Proceeds from the issues were therefore used to repay the national debt.

BOX 1

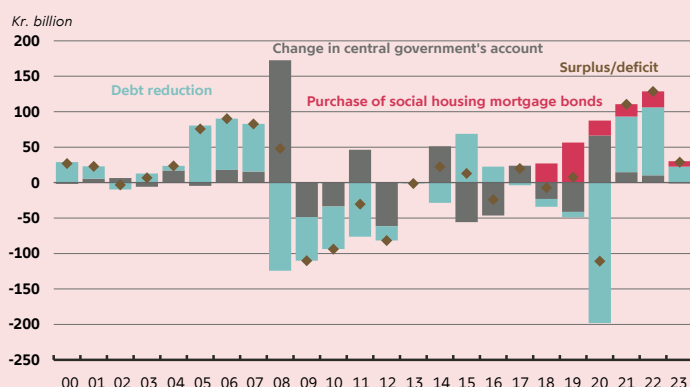
How government debt is calculated

Three concepts are often used to describe government debt:

- **Government debt** is calculated as the nominal value of the central government's domestic and foreign debt less the balance in the central government's account at Danmarks Nationalbank, bonds for financing subsidised construction and the assets in the central government funds: Innovation Fund Denmark and the Danish Foundation for Prevention and Retention. Central government debt is managed by Danmarks Nationalbank on behalf of the Danish Ministry of Finance.
- **EMU debt** is a standardised statement of EU countries' debt and includes debt in the central government, regions, municipalities and social funds. The EMU debt is stated at nominal value. The debt is stated gross, but the public sector can consolidate the debt with claims against itself. This means, for example, that the central government's and central government-owned companies' holdings of bonds issued by public entities are deducted from the statement of the EMU debt. On the other hand, e.g. the portfolio of government-guaranteed mortgage bonds and the balance of the central government's account at Danmarks Nationalbank cannot be deducted. According to the EU's Stability and Growth Pact, the EMU debt-to-GDP ratio must not exceed 60 per cent.
- **Net public debt** comprises financial assets and liabilities of the central government, regions, municipalities and social funds and foundations. The central government's assets include the central government's account with Danmarks Nationalbank, assets in government funds, on-lending to government-owned companies and the central government's portfolio of equities and other securities. The net public debt is stated at market value and is thus affected by value adjustments of public assets and liabilities. International calculations of net public debt are made by, for example, the Organisation for Economic Co-operation and Development (OECD) and the International Monetary Fund (IMF).

CHART 3

State budget surplus has led to large debt reductions

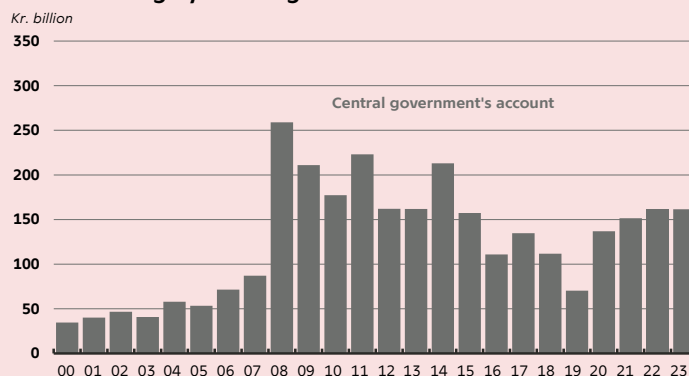


Note: Surplus corresponds to net cash balance/net financing requirement. Re-lending administered by Danmarks Nationalbank, social housing and expenses financed by green bonds are offset, as these items are specifically financed by issuing government securities and not via the central government accounts (DAU balance). Reduction of debt is calculated net.

Source: Government accounts 2000-2023

CHART 4

The balance on the government's account is largely unchanged



Note: Balance on central government's account at year-end.
Source: Danmarks Nationalbank.

Over the past three years, the surplus on the central government's finances, excluding on-lending, has, in isolation, contributed to a sharp reduction in the central government's gross debt of approximately DKK 200 billion. The balance on the central government's account was DKK 161.5 billion at the end of 2023, which is largely unchanged compared to year before, see Chart 4.

Despite the declining borrowing requirement, it is important that government issuance is maintained at a certain level in order to maintain a well-functioning and liquid government securities market. Annual issuance around the levels of recent years is deemed to be appropriate and sufficient to ensure good liquidity in the central government securities market.

It is important to maintain a well-functioning and liquid government securities market

Under normal market conditions – and given a responsible fiscal and monetary policy – a well-functioning and liquid government debt market ensures that the central government has continuous access to stable funding at low interest costs. This is essential to ensure countercyclical fiscal manoeuvring room, so that in the event of an acute increase in funding requirements, the central government will be able to issue larger volumes at a limited additional cost. This was the case during the Corona crisis, for example.

Developing liquid and efficient domestic sovereign debt markets reduces the central government's interest costs by reducing the liquidity premium that investors demand to buy bonds.

The sovereign debt market is an integral part of the broader domestic capital market. Government bonds provide a safe price reference for other domestic bonds, such as mortgage and corporate bonds, allowing investors, including pension funds, to better manage their portfolios and ensure efficient risk allocation. Similarly, a well-functioning domestic capital market helps to ensure cheap financing for both businesses and homeowners, thereby supporting economic growth.

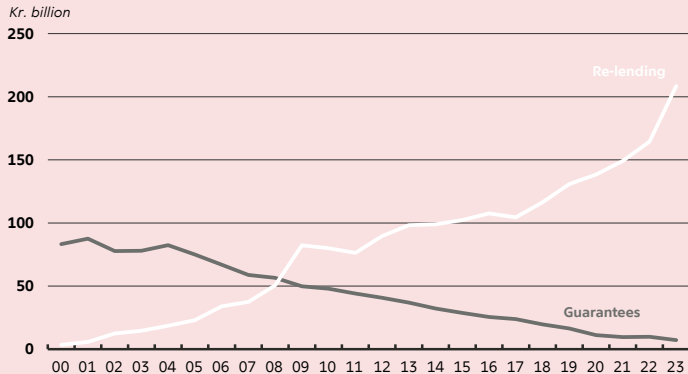
Consolidation of public debt supports the central government securities market

To support the central government securities market, for many years there has been focus on consolidating public borrowing directly in government bonds under government debt. Consolidation has also helped to reduce total public sector interest expenses.

The mid-2000s saw the start of the transition from government guarantees on state-owned companies' debt to on-lending to state-owned companies financed by issuing government securities, see Chart 5. In recent times, the funding behind social housing has also been centralised within central government. The central government has consolidated debt by purchasing debt instruments (on-lending) or government-guaranteed mortgage bonds (social housing) financed by issuing government securities. At the end of 2023, the total outstanding amount of on-lending and government-guaranteed mortgage bonds was DKK 193 and 155 billion respectively, corresponding to 60 per cent of the Danish state's total outstanding amount of government bonds.

CHART 5

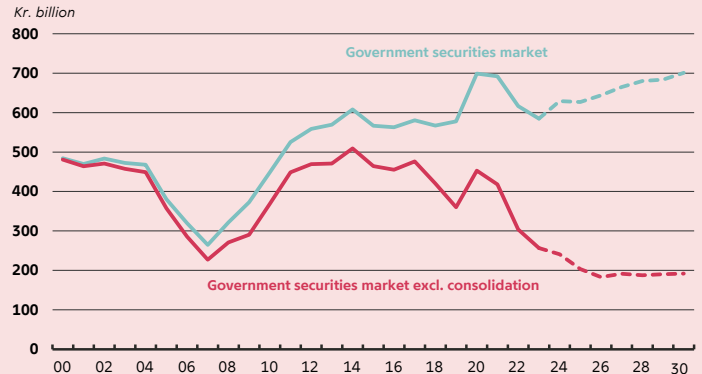
The increased consolidation has created a transition from government guarantees to re-lending



Note: Re-lending and guaranteed loans to state-owned companies
Source: Danmarks Nationalbank.

CHART 6

Consolidation continues to maintain issuance at a level that ensures a liquid government securities market



Note: The projection of the central government securities market is based on the Ministry of Finance's latest medium-term projections for the central government's net financing requirement.
Source: Danmarks Nationalbank and the Ministry of Finance.

Consolidation has been crucial to maintaining issuance at a level that ensures a well-functioning government securities market in a period of low funding requirements, see Chart 6. Maintaining a certain issuance requirement has made it possible to build large, liquid bond series in international benchmark size. In addition, sustained presence on the debt markets has maintained global investor awareness of Danish government securities, which proved particularly valuable when the Corona crisis began and the central government was still able to finance itself on the international debt markets. In the coming years, the outstanding amount of on-lending and government-guaranteed mortgage bonds is expected to increase further and will thus continue to support central government's borrowing needs.

By centralising borrowing with the central government, significant interest savings have been achieved. This is because investors are willing to pay a higher price for safer and more liquid government bonds. The centralisation of borrowing has not resulted in higher administrative costs for the central government.

Denmark's EMU debt is among the lowest in Europe

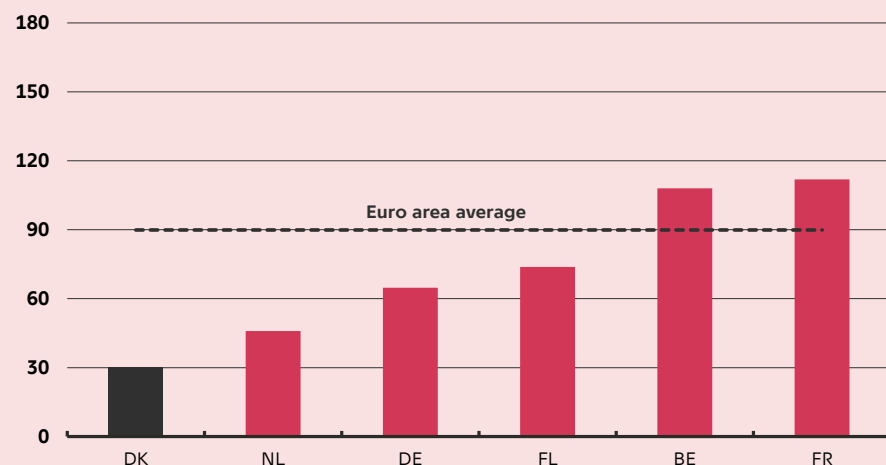
In 2023, Denmark's EMU debt is expected to end up at 30 per cent of GDP by the end of the year. This means that Denmark's EMU debt remains among the lowest in Europe and well below the 60 per cent of GDP limit set out in the EU's Stability and Growth Pact, see Chart 7.

Denmark's EMU debt is higher than the national debt because the EMU debt is a gross statement of the total public debt, see Box 1. For example, the central government's account balance and holdings of social housing bonds are not offset in accounting of EMU debt.

CHART 7

Denmark's EMU debt is among the lowest in Europe

Per cent of GDP



Note: EMU debt for a number of European countries. EMU debt is a standardised statement of EU countries' debt and includes debt in the central government, regions, municipalities and social funds. The EMU debt is stated at nominal value. Data from Q3 2023.

Source: Eurostat.

Denmark maintains the highest credit rating

For the past 20 years, Denmark has maintained the highest credit rating in both domestic and foreign currency (AAA) from the three largest international credit rating agencies⁴ and is one of only nine countries in the world with such a rating. The high credit rating is primarily a result of a robust and resilient economy, low public debt and a long history of responsible and well-organised fiscal policy.

The high credit rating means that investors demand a low credit risk premium when investing in Danish government bonds. That allows central government to borrow at lower interest rates than less creditworthy countries and thus helps to keep the central government's total financing costs down, see Chart 8.

⁴ Moody's, Standard & Poor's and Fitch.

CHART 8

A high credit rating means lower borrowing costs

10-year government yields, per cent p.a.



Note: Credit ratings and yields on 10-year government bonds for selected European countries. The interest rates in the Chart are calculated as the average of the last two months of the year.
Source: Nordea Analytics and Moody's.

03 Government interest costs

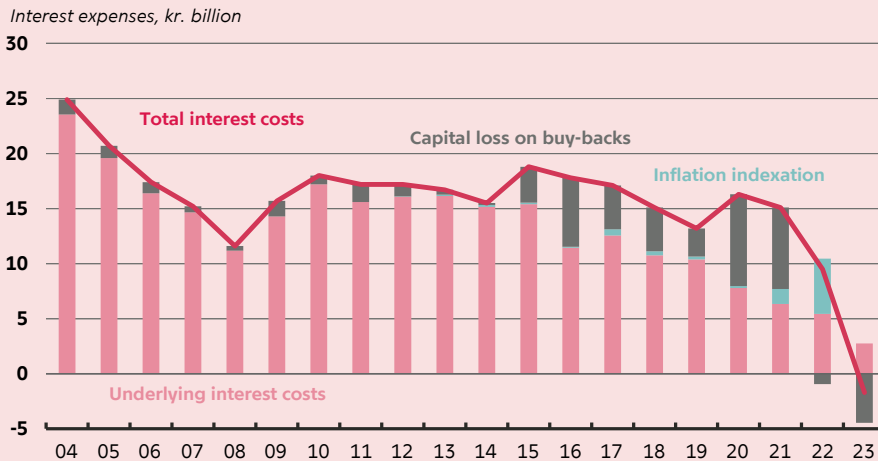
Government interest costs fell despite rising interest rates

In 2023, the total interest costs on government debt fell from 9.4 to DKK -1.7 billion, equivalent to -0.06 per cent of GDP. The decline is due to a combination of lower debt, less index revaluation⁵ and purchases of government bonds at prices lower than the issue price, see Chart 9. Adjusted for interest income from on-lending, central government interest expenses in 2023 amounted to DKK -3.3 billion, which corresponds to -0.12 per cent of GDP.

The decrease in central government interest costs has occurred despite a rising interest rate level in 2023. With a high average fixed interest rate period on government debt, it takes an average of around 7 years for interest rate increases to impact the central government's interest costs, see also chapter 6 on risk management. This is because the interest rate level only affects the interest expenses on newly issued debt and does not affect the central government's interest expenses on the part of the debt that has already been raised.

CHART 9

Decomposition of government interest costs



Note: Annual gross interest costs for total central government debt in DKK billion. Negative amounts constitute revenue. The central government's interest income from on-lending has not been offset in the chart.

Source: Danmarks Nationalbank.

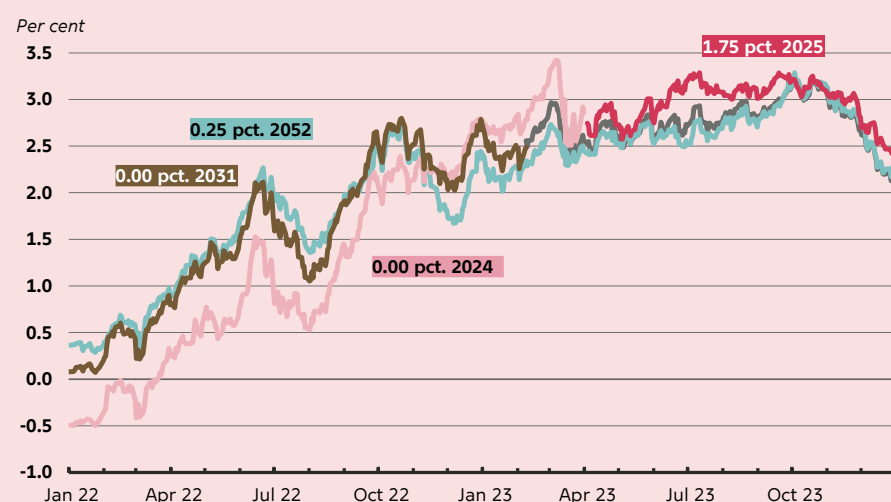
⁵ Inflation-linked bonds are issued at indexed value. Principal and interest are regularly indexed to the consumer price index. The value of the ongoing indexation of the principal is a borrowing cost in line with interest expenses.

Higher government financing costs in 2023

Rising interest rates for much of the year meant that it was generally more expensive for the central government to issue debt in 2023. Both the 2- and 10-year government yields rose from around 2.50 per cent p.a. to 3.20 per cent p.a. towards the end of October, see Chart 10. During the same period, more than 80 per cent of the year's bond issues were made. Towards the end of the year, interest rates fell significantly on the back of increasing market expectations of imminent monetary easing.

CHART 10

Significant fluctuations in short- and long-term bond yields over the year



Note: The graph shows the yield to maturity on government benchmark securities. Danish state 2.25 per cent 2033 replaced Danish state 0.00 per cent 2031 as the benchmark on 8 February 2023, while Danish state 1.75 per cent 2025 replaced Danish state 0.00 per cent 2024 on 1 April 2023.

Source: Bloomberg.

Overall, this meant that the average yield to maturity on nominal government bond issues rose to 2.87 per cent p.a., see Table 1. This was an increase of 1.74 percentage points from 2022 and the highest average yield to maturity in the last ten years. On issues in the inflation-indexed bonds, the average effective real interest rate was 0.68 per cent p.a. in 2023.

TABLE 1

Yield to maturity on government bond issuances

	Average maturity, years	Average yield to maturity, per cent p.a.
2014	9.3	1.11
2015	6.8	0.32
2016	7.4	0.04
2017	7.5	0.15
2018	7.5	0.14
2019	7.8	-0.33
2020	11.6	-0.33
2021	10.4	-0.2
2022	9.33	1.13
2023	7.8	2.87

Note: The yield to maturity is weighted by market value and excludes inflation-indexed bonds in the central government's total issuance (including swap operations) in the given years.

Source: Danmarks Nationalbank.

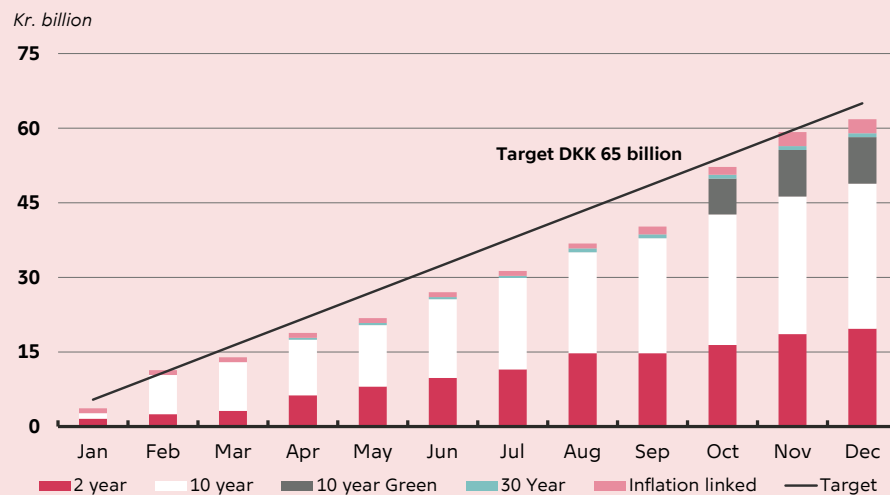
04 Government issuance

Government issues in 2023 followed the target for the year

In line with strategy, in 2023 the Danish state issued domestic government bonds for DKK 61.8 billion at market value via tap sales and auctions. Issuance was spread fairly evenly throughout the year, with an overweight in the last quarter when a new green 10-year government bond was opened, see Chart 11.

CHART 11

Government bond issuance has been spread evenly throughout the year



Note: The chart shows bond sales at market value excluding switch auctions. Sales are calculated by value date.

Source: Danmarks Nationalbank.

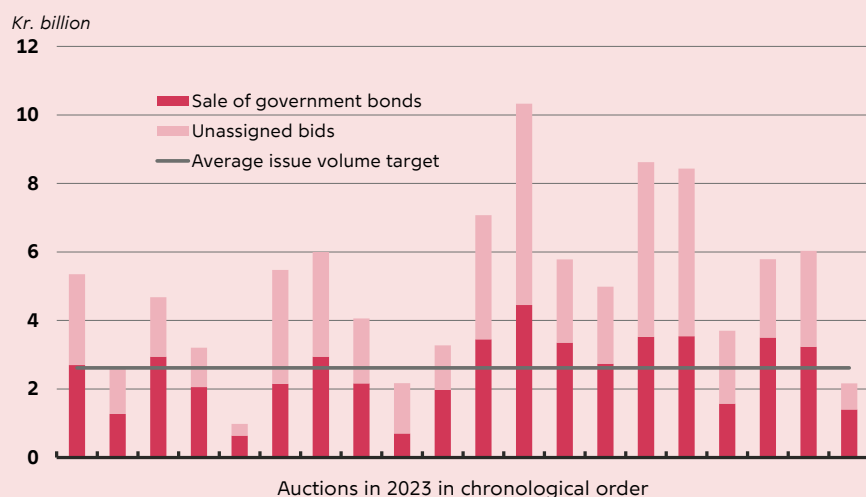
As in recent years, demand varied significantly throughout the year, making it challenging to evenly distribute issuance, see Chart 12. Especially in the first half of 2023, the variation was high and generally reflected large fluctuations in the global risk landscape, with increased uncertainty about the state of the US banking sector dominating.

Focus on the 2- and 10-year maturity segments

Government bond issuance in 2023 focused on the 2- and 10-year maturity segments with nominal issuance of DKK 20 and 29 billion, respectively, corresponding to a total of 79 per cent of the year's issuance. Due to the low level of government debt, the majority of government issuance is focused on a few core securities, which are built up to benchmark size to ensure good liquidity. At the same time, the vast majority of investor demand is in the 2- and 10-year maturity segments, which also serve as important reference points for the Danish capital market.

CHART 12

Issue volume at auctions in 2023 varies



Note: The chart shows the difference between the intended average issue size (excluding opening auctions) and the allocated volume at each auction in 2023. The average is calculated by dividing the issue target (excluding issues at opening auctions) by the number of auctions held during the year.

Source: Danmarks Nationalbank.

On 8 February 2023, the central government opened a new 10-year government bond maturing in 2033. At the opening auction, the maximum announced DKK 5 billion was issued, while there were bids for DKK 6.4 billion. The issues were made at an interest rate of 2.57 per cent p.a. In total, DKK 34.5 billion at market value in the new 10-year government bond in 2023 was issued during the year, of which just under DKK 6.5 billion was issued at switch auctions.

Inflation-linked bond issuance continued in 2023

In 2023, the Danish government issued inflation-linked bonds totalling DKK 4.9 billion at market value, bringing the total outstanding amount to a nominal DKK 35.2 billion. The issues were made in the central government's two inflation-indexed government bonds: 0.10 Danish state 2030i and 0.10 Danish state 2034i. The strategy remains to build the programme to a total outstanding amount of DKK 40-60 billion spread across three government securities.

The central government's inflation-indexed loan programme helps to ensure a broad investor base, which contributes to higher and more robust demand for Danish government securities. Inflation-linked bonds offer investors a return that follows the development in Danish consumer prices, see Box 2, and the bonds are therefore attractive to investors who need to hedge their liabilities against inflation, such as the insurance sector and parts of the pension sector.

Inflation-linked bonds are also attractive to the central government as they help spread the risk of the central government's debt portfolio. This is achieved through two channels: Firstly, inflation-linked bonds dampen fluctuations in government debt as a share of GDP, as inflation-linked debt and GDP falls and rises in line with changes in consumer prices. Secondly, under certain circumstances index-linked bonds can reduce the central government's overall budget risk. The risk management of inflation-linked bonds, including management of the first maturity in the programme, is elaborated on in section 6.

BOX 2

Inflation-linked bonds

What is an inflation-linked bond?

During the term of an inflation-linked bond, its principal will be adjusted in line with the development of consumer prices. At maturity, the redemption amount is the inflation-indexed principal amount.

However, Danish inflation-linked government bonds have a deflation floor, which ensures that investors always receive back at least the full nominal principal.

Expressed as a percentage, the coupon rate on an index-linked bond remains fixed, but since the actual coupon rate payment is calculated based on the inflation-adjusted principal, the amount will also vary with consumer prices. Coupon payments, unlike principal, do not have deflation protection and will therefore always be a percentage of the indexed principal.

When the central government issues inflation-indexed bonds, future government interest costs in real terms are already known at the time of issue. However, unlike nominal conventional bonds, nominal payments will remain unknown until the bond matures.

What is breakeven inflation?

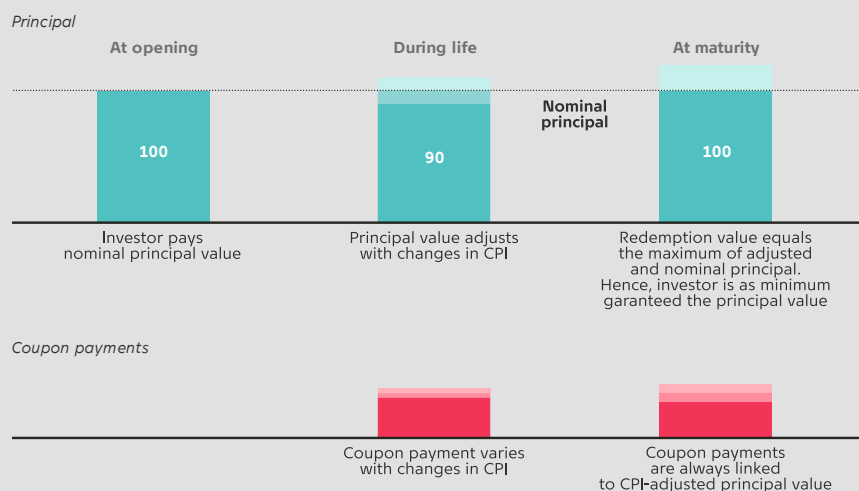
Breakeven inflation is a key concept in the assessment of central government's expected costs of issuing inflation-linked bonds compared to nominal bonds. Breakeven inflation is an expression of the expected future average realised inflation level where the central government's costs of issuing inflation-indexed and nominal bonds are the same. In practice, breakeven inflation is often calculated as the yield spread between nominal and inflation-linked bonds with the same maturity:

$$\text{Breakeven inflation} \approx \text{nominal interest rate} - \text{real interest rate}$$

If the realised average inflation rate turns out to exceed the breakeven inflation rate (observed at issuance), it would, seen in isolation, have been cheaper for the central government to issue nominal bonds rather than inflation-indexed bonds and vice versa. See examples in chart A.

CHART A

Principal and coupon payments vary with the development in the price index from maturity of the bond



Strong demand for new green 10-year government bond

On 26 September 2023, the central government's new green 10-year government bond was opened using the syndication issuance method⁴. This was the first time a domestic Danish government bond was issued using this issuance method. The

⁴ Upon syndication, a group of banks is appointed to assist with settlement, legal documentation and marketing, among other things.

method is widely used among other sovereign issuers and can in some cases contribute to a broader investor base, which is one of the objectives of the central government's green loan programme.

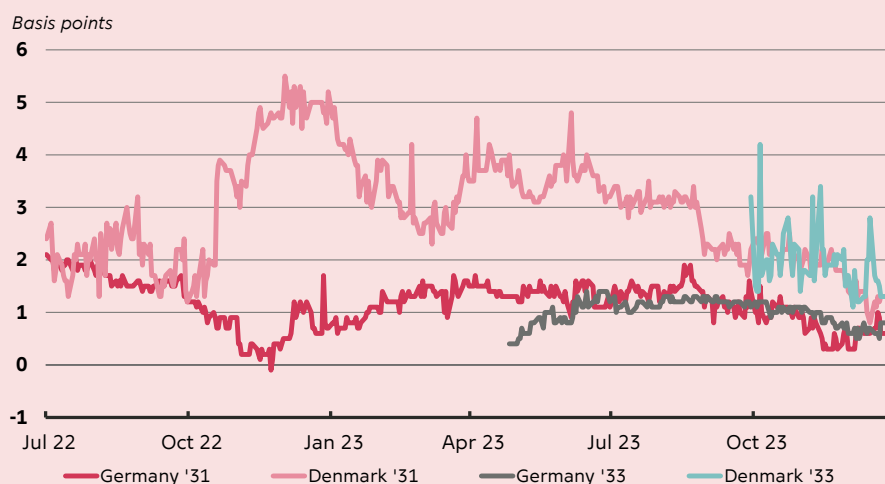
Investor interest at the opening was strong and broadly distributed across geographic areas with a total sale of 43 per cent to foreign investors compared to an average of 32 per cent of the total outstanding debt in DKK. The transaction also attracted a wide range of investor types, most of which had a relatively long investment horizon, such as asset managers and pension funds.

Upon syndication, DKK 7.75 billion nominal value was issued at a yield to maturity of 3.053 per cent, which corresponds to a green premium of 1.5 basis points, see box 3. In comparison, the central government's first green bond issue in 2022 was issued with a green premium of ca. 5 basis points at the opening auction. In general, green premiums have been declining in recent times, see Chart 13. This may be partly due to the fact that the supply of green government securities has increased significantly and that some investors are increasingly using sophisticated models to assess issuers' ESG⁵ ratings. The latter means that these investors can also buy non-green bonds from issuers with a high ESG rating.

The new green 10-year government bond was sold later in the year at the central government's ordinary auctions, increasing the outstanding amount to just under DKK 10 billion market value, in line with the strategy.

CHART 13

Danish state achieves a high green premium



Note: The chart shows the green premium for Danish 10-year government bonds and the green premium on equivalent German government bonds.

Source: Bloomberg.

⁵ Environmental, Social and Governance is a grouping of considerations, including environmental, social and governance issues, that an investor can take into account.

BOX 3

Green bonds

What are green bonds?

Green bonds are any type of bond instrument where an amount equal to the yield is linked to the financing or refinancing of new and/or existing suitable green projects/expenditures. With the issuance of a central government green bond, an amount corresponding to the yield from the sale will be allocated to green government expenditures which support the production of renewable energy in the form of wind and solar energy and the green transition of the transport sector.

Denmark has high green ambitions and strives to be a frontrunner when it comes to mitigating climate change and realising the necessary transformation of our society. Linked to this are expenses that, since the establishment of the Danish government's "Green Bond Framework" in 2022, have been included as green expenses linked to the issuance of green government bonds. You can read more about the specific costs of the central government's green bond programme on the Ministry of Finance's website¹.

The framework for the green bond, including the criteria for the selection of green expenditure, is described in the central government's Green Bond Framework. The Green Bond Framework is prepared in line with best market practice, and green expenditure is evaluated and selected based on the criteria of the EU classification system for sustainable economic activities (EU Taxonomy). In addition, independent assessments of the central government's framework are obtained. For example, Cicero, an external consultancy with climate and environmental expertise, has given Denmark's Green Bond Framework a "dark green" rating, the highest possible. Government Debt Management monitors and updates the central government's Green Bond Framework as necessary.

What is a green premium?

Green bonds can be issued with a so-called green premium, which is the difference between the interest rate on a green bond and the interest rate on a similar conventional bond. As such, a green premium is a price advantage for issuers that arises from investor willingness to pay more to ensure that the proceeds can only be used to fund green projects and expenses.

Why does central government issue green bonds?

Denmark is widely regarded as a global leader in sustainability with top rankings in several recognised international ESG indices and rankings. Among other things, Denmark is ranked highest out of 65 countries on the international *Climate Change Performance Index*, which assesses climate efforts of countries. A review of Denmark's ranking in these indices and links to read more about them can be found on the Danish Government Debt Management's website².

Denmark began issuing green government bonds from 2022 to support the transition to a sustainable economy and the development of green capital markets dedicated to financing this transition. The issuance of green government bonds was also designed to meet the significant increase in demand for green assets from investors.

Green bonds are issued as twin bonds

The twin bond model was launched by Germany in 2020. The model entails that the central government's green bond is issued with the same financial characteristics as one of the central government's existing conventional on-the-run issues. This means that the central government's 10-year green bond has the same maturity, coupon and repayment profile etc. as its 10-year benchmark bond. The twin bond model also supports the liquidity of a green bond by allowing investors to swap the green "twin bond" one-for-one for the equivalent and more liquid conventional twin bond at any time. The exchange facility is only one-way, so the investor does not have the option to exchange the conventional twin bond for the corresponding green twin bond.

¹ See Ministry of Finance, Green Bonds, Eligible green expenditures, September 2023 ([link](#)).

² See Danmarks Nationalbank, Green Bonds ([link](#))

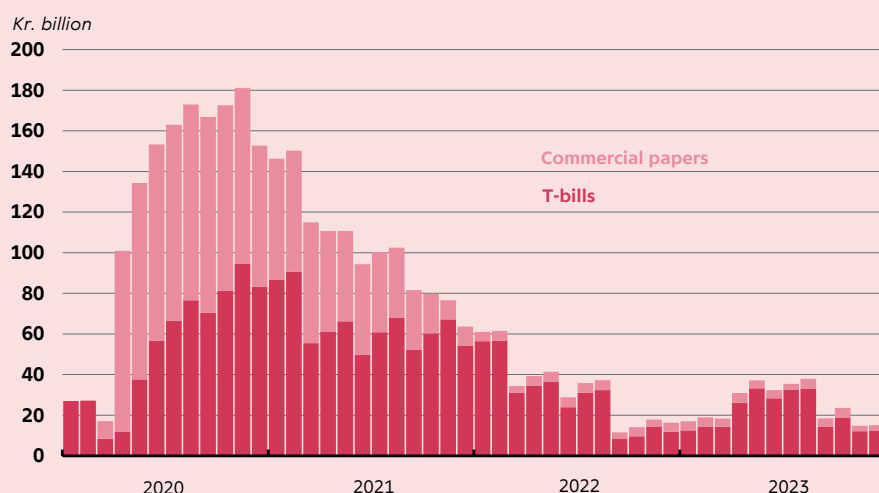
Short-term loan programmes maintained at a low level

The central government's short-term loan programmes, treasury bills (T-bills) and commercial papers (CP), are an important part of the central government's liquidity resources. Since the Corona crisis in 2020, the outstanding amount in both programmes has been reduced significantly and was maintained at a low level through 2023, see Chart 14.

At the end of 2023, the outstanding amount in T-bills was DKK 12.4 billion. During the year, the issues were sold at an average yield to maturity of 3.03 per cent p.a. In the CP programmes, the outstanding amount at the end of 2023 was DKK 2.75 billion. The strategy remains to maintain market access to the international capital markets via the CP programmes.

CHART 14

Outstanding amounts in the central government's short-term loan programmes kept at a low level



Note: Outstanding amounts in the central government's two commercial paper programmes (ECP and USCP) and outstanding in T-bills.

Source: Danmarks Nationalbank.

Foreign borrowing maintains access to international debt markets

Under the Danish government's EMTN programme (Euro Medium Term Note), a new 2-year dollar bond was issued on 7 November 2023 with proceeds of USD 1.5 billion, equivalent to DKK 10.5 billion. Demand was high, especially from central banks and other official institutions⁸. The loan was taken out at a yield to maturity of 5.02 per cent p.a., corresponding to 9 basis points above a corresponding US government security. This is the best pricing relative to US government bonds that the central government has achieved on a US dollar-denominated issue in recent history.

In order to maintain the best possible access to the largest and most liquid international debt markets, the strategy is to be regularly present in currencies other than DKK, e.g. through the central government's EMTN programme.

⁸ Official institutions include governments, government agencies, central banks and supranational institutions such as the World Bank and IMF.

Government borrowing in foreign currency amounted to approx. 4 per cent of its total debt at year-end 2023.

Issuances are made regularly to ensure that the central government's EMTN programme is a well-functioning source of funding, including that processes are maintained and that international investors and market participants are active investors in Danish government debt denominated in foreign currency. A prerequisite for this is that the central government has a regular presence on these markets.

Borrowing in foreign currency is not used to finance the central government's ongoing financing needs, but only supports the liquidity preparedness of the central government and the foreign exchange reserve. Furthermore, issuing bonds in foreign currency helps to diversify the central government's investor base, which in the long term can lead to lower funding costs as investors in foreign-denominated government debt become active in the domestic government debt market. Therefore, the central government will continue to issue annually in foreign currency.

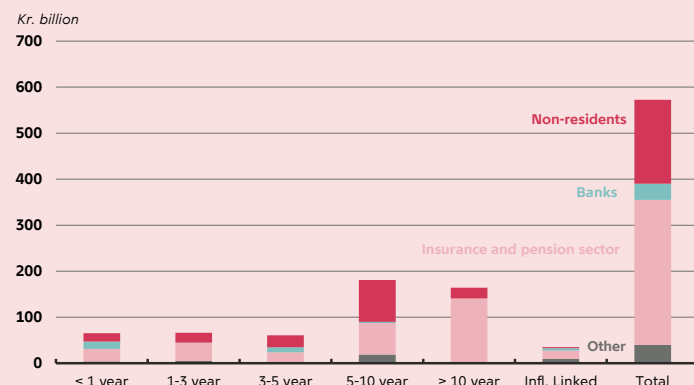
Foreign ownership in Danish government bonds helps diversify the investor base

A diversified investor base makes the government debt market more resilient to changes in local market conditions. Danish government bonds are owned by a wide range of investors, but the majority are owned by domestic investors. Among others, the Danish insurance and pension sector has a natural need to hedge their long-term liabilities and is therefore the largest investor group with an ownership share of 55 per cent by the end of 2023, especially in the longer maturity segments, see chart 15.

Increased interest in issuance in Danish kroner from foreign investors will increase the central government's access to funding and will thus contribute to liquidity and lower funding costs for the central government. The increased liquidity also favours domestic investors.

CHART 15

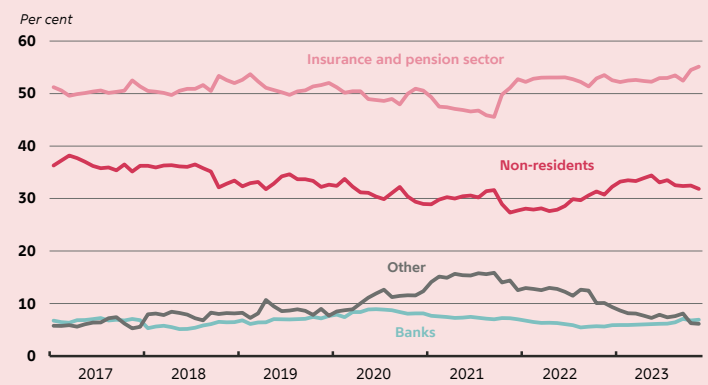
Ownership shares by remaining maturities



Note: Ownership of Danish government bonds in DKK.
Source: Danmarks Nationalbank.

CHART 16

Investor distribution of Danish government bonds



Note: Ownership shares of Danish government bonds.
Source: Danmarks Nationalbank.

Foreign investors have maintained their ownership share of Danish government bonds in 2023 and still account for around 32 per cent by the end of the year,

see chart 16. The lower foreign ownership share in the last months of the year should be seen in light of the relatively high ownership share of 41 per cent of the two series maturing in November 2023.

Danish government bonds are attractive to foreign investors as a result of a high additional gain from currency hedging to the euro and dollar and the spread to German government bonds.

05

Trading and liquidity in the secondary market

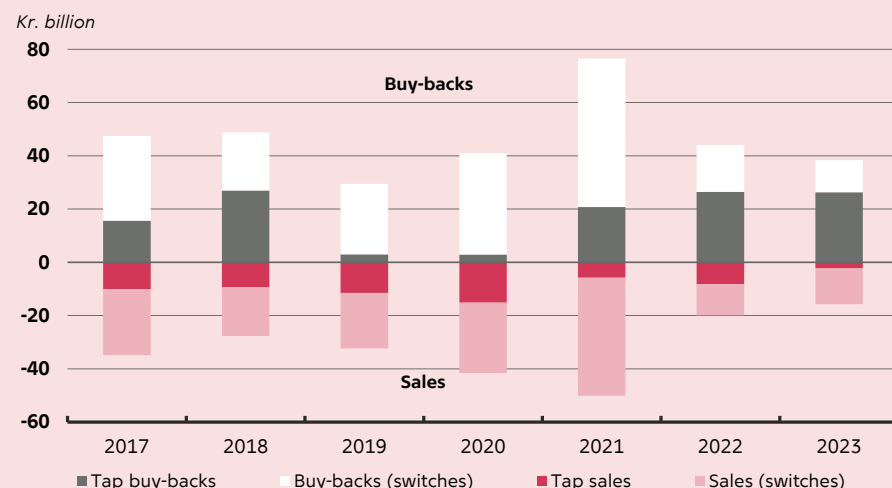
Supporting the secondary market

The central government actively supports the secondary market to ensure good liquidity⁹ and thereby minimise the central government's financing costs. Good liquidity reduces the liquidity premium that investors demand for buying the bonds. It is therefore less expensive for the central government to issue debt when the bonds have good liquidity.

The secondary market is supported both through buy-backs and tap sales, but also through switch auctions, where the central government's primary dealers and investors have the opportunity to buy liquid on-the-run securities against selling off-the-run securities, see Chart 17. Buy-backs can contribute to levelling out the central government's repayment profile and take into account the outstanding amount of the central government's off-the-run securities. A prerequisite for the central government's activities in the secondary market is that trades can be made at fair market prices. This implies that there is a reasonable correlation between the prices of government securities bought and sold.

CHART 27

Buying and selling in the secondary market



Note: Sales and buying are recognised at market value. Buying excludes buying bonds maturing within the year.

Source: Danmarks Nationalbank.

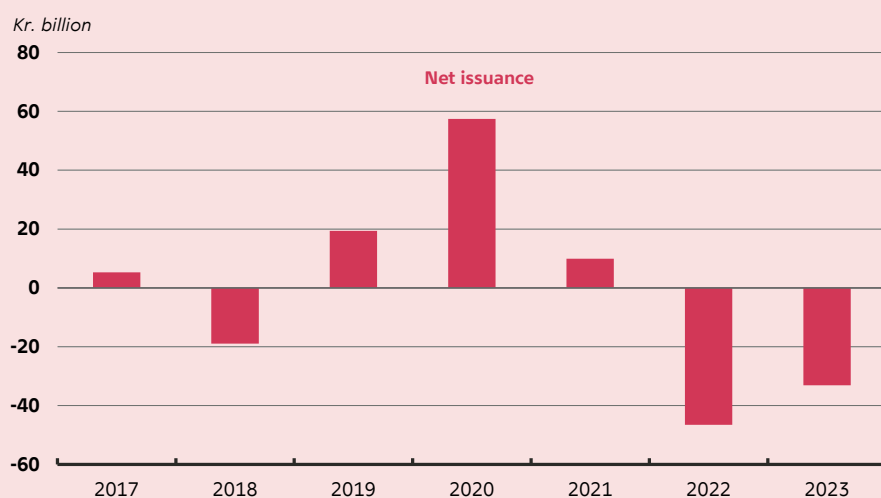
⁹ Liquidity is defined as the ability to make large trades quickly and at any time at low cost.

Negative net government issuance in 2023

During 2023, the central government issued DKK 75.2 billion at auctions, tap and switches, while buy-backs was worth DKK 38.3 billion with maturities later than 2023 and redemption and buy-backs for DKK 70.0 billion with maturity within the year. This resulted in a net issuance of DKK 33.1 billion, see Chart 18. This contributes to the fact that the Danish national debt, as mentioned in the previous section, was reduced over the year.

CHART 18

Government net issuance



Note: Net issuance is calculated as the sale of government bonds via auctions, tap and switch auctions less the central government's buying of bonds maturing outside the year via tap and switch auctions and redemption of bonds maturing within the year.

Source: Danmarks Nationalbank.

Trading costs decreased over the year

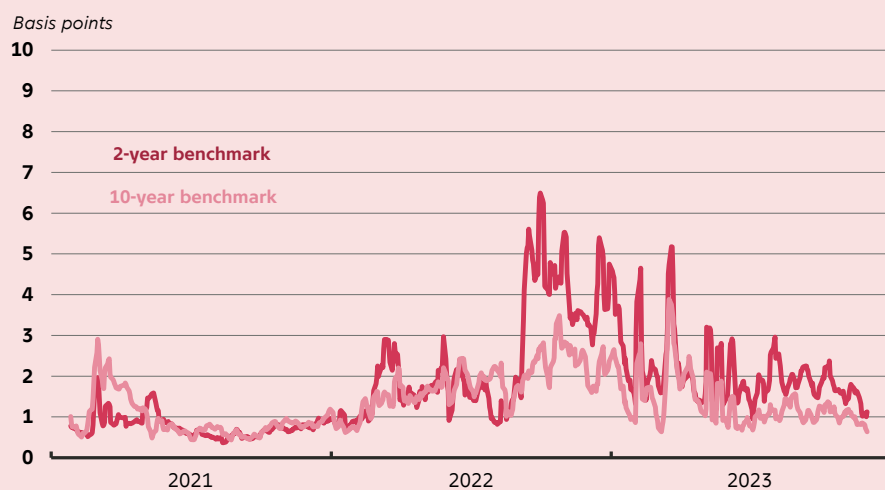
Liquid markets are typically associated with relatively low trading costs. The cost of trading Danish government bonds can be measured, for example, by the spread between bid and ask prices on the interdealer platform MTS Denmark¹⁰.

In 2023, the spread narrowed in both the 2- and 10-year segments, ending the year at around 1 basis points., see Chart 19. Within the year, there were significant fluctuations due to changes in the global risk landscape. For example, the turmoil in the US banking sector in particular in the spring led to a sharp increase in spreads in both the 2- and 10-year segments. Tensions then gradually normalised after a quick intervention by the US authorities. The development in the Danish government debt market is in line with what has been observed in other comparable government bond markets.

¹⁰ MTS Denmark is the primary trading platform for Danish government securities, including government bonds and T-bills.

CHART 19

Bid and asking price spreads in 2- and 10-year points



Note: The bid-ask spread is calculated as a 5-day moving average of the difference between the best bid and ask prices for a given volume over 5 hours per day.

Source: MTS Denmark.

06 Risk management

Risk management of government debt can be divided into three main categories: market risk, refinancing risk and liquidity risk. Market risk is mainly related to risks associated with changes in interest rates, as the central government debt has limited currency and credit risks. Scenario calculations, interest rate simulations and the total duration of the central government debt are used to illustrate the market risks of the central government debt. This ensures that the total interest costs on government debt are resilient to significant interest rate changes.

To manage refinancing risk, the focus is on an even repayment profile for government debt, supplemented by monitoring the size of the short-term refinancing scope. This smooths out the refinancing of existing debt over the years. Furthermore, it ensures that the central government has sufficient liquidity to cover financial obligations, including unexpected expenses or lack of market access.

Central government has maintained low interest rate risk

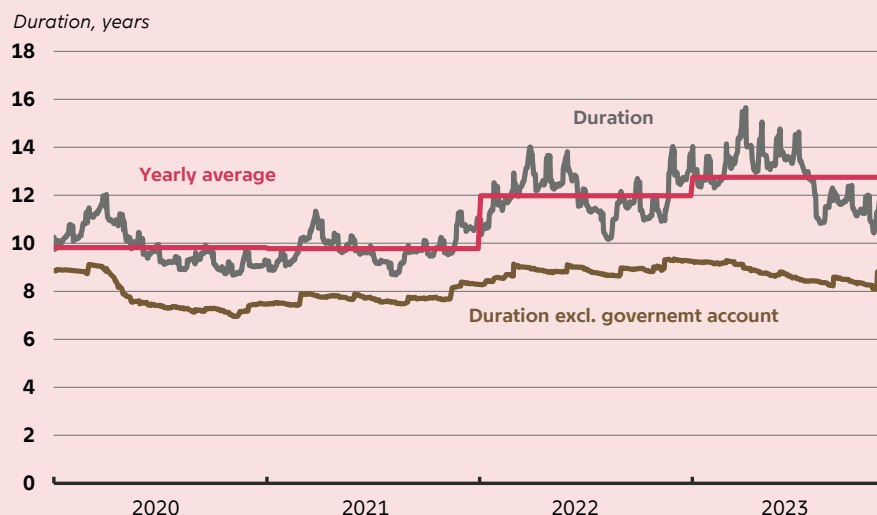
For 2023, the average duration¹¹ for the year came in at 12.1 years, which is within the expected duration band of 11.75 ± 1 years. This is an increase compared to previous years, see Chart 20. The increase is primarily due to a high balance on the central government account, which is recognised on the asset side in the duration calculation. Thus, the increasing duration does not reflect changes in the maturity profile or risk strategy for government debt.

The central government's duration calculated without the account continues to develop steadily in 2023, reaching an annual average of around 8.4 years for 2023. This locks in a large part of the central government's interest payments on average 8.4 years into the future, which contributes to robustness against interest rate fluctuations.

¹¹ The duration is calculated as the average payment date on the cash flow of the central government debt portfolio. Calculation of the duration includes both financial liabilities and assets managed by Danmarks Nationalbank. In practice, this means that payments from bond holdings in government funds, account deposits at Danmarks Nationalbank and on-lending to state-owned companies are offset against payments on domestic and foreign government debt. As the balance on the central government's account corresponds to cash flow from short-term liabilities such as short-term loans or swap payments, it will increase the total duration.

CHART 20

Fluctuations in duration are primarily due to the central government's account



Note: Duration is calculated for domestic and foreign debt, government funds, on-lending to state-owned companies and central government's account. Duration has been calculated without discounting.

Source: Danmarks Nationalbank.

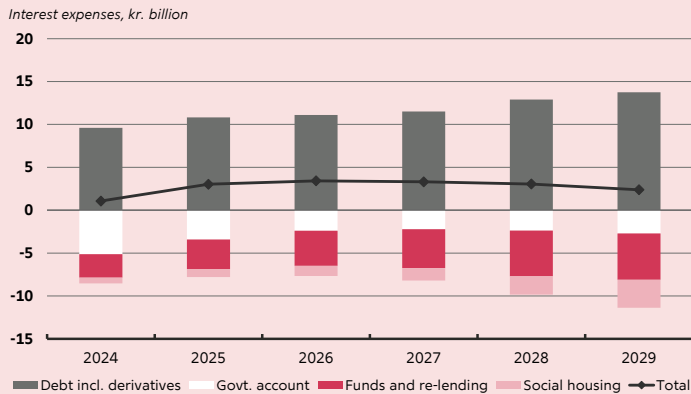
Continued low expected interest costs in the base scenario

Over the next 6 years, interest costs excluding capital losses and index revaluations are expected to beat a low level of around DKK 1-3.5 billion in a neutral base scenario with a balanced primary public balance and where the forward rate structure is realised, see Chart 21.

Danish government interest rates have been rising throughout 2023, with a decline towards year-end, see Chart 10. Despite rising interest rates, central government's interest costs are expected to increase to a limited extent and then decrease marginally. This development should be seen in light of the maturity profile of government debt, where the majority of the total debt has a fixed interest rate. The higher interest rate level will impact coupon payments as existing debt needs to be refinanced. The central government's high account balances will also contribute significant interest income, which pulls down interest costs. In practice, the central government's interest costs are highly dependent on its financing needs, which is why Chart 21 should be understood as a stylised base scenario.

CHART 21

Central government debt is robust against interest rate increases

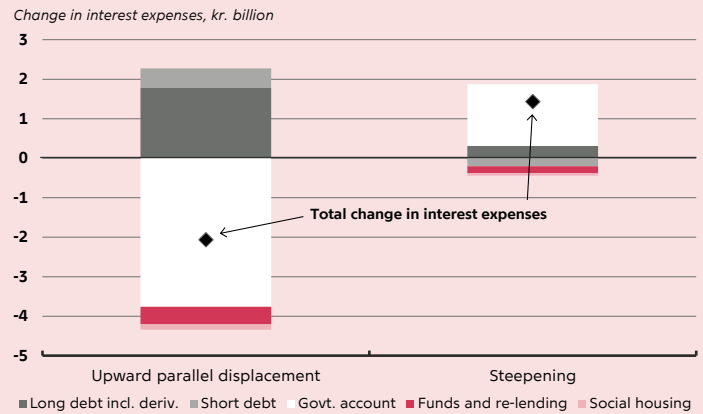


Note: Projection of central government's interest costs excluding index revaluations and revaluation losses in a base scenario with a balanced primary balance and where the forward rate structure is realised. The decrease in interest income from the central government's account reflects the fact that the balance on the central government's account is expected to be reduced over the coming years by contributing to covering the financing requirement.

Source: Danmarks Nationalbank.

CHART 32

Scenarios for interest rate risk in 2024



Note: Change in interest costs for 2024 in a scenario where the yield curve shifts parallel or steepens, i.e. short-term interest rates fall and long-term interest rates rise. The changes have been calculated in relation to the scenario in which the forward interest rate structure is realised. The interest rate scenarios are defined as in the European Banking Authority's guidelines for interest rate risk management in the banking book (IRRBB).

Source: Danmarks Nationalbank.

Debt profile is robust against EBA interest rate increase scenarios

Central government's interest costs for 2024 are expected to fall by just over DKK 2 billion in the scenario from the European Banking Authority, EBA, where the yield curve is shifted upwards in parallel by 2 percentage points, see Chart 22. This is because a higher short-term interest rate has an immediate effect on central government's high account balances, while the scope of new issues for a single year is limited due to the steady amortisation profile of central government debt.

Overall, a steep yield curve where short-term interest rates fall while long-term interest rates rise will lead to an expected increase in the central government's interest costs for 2024 corresponding to just over DKK 1.2 billion, see Chart 22. In such a scenario, a lower short-term interest rate would mean lower income on government account balances, which would favour higher interest costs. Rising long-term interest rates also mean that new issues for 2024 are issued at higher interest rates.

The central government is a net recipient of the short-term interest rate

The amount of government assets that earn interest at a short-term rate exceeds the amount of liabilities that earn interest at a short-term rate, see Chart 23. This is due to the central government's high account balances, which are subject to variable interest rates.

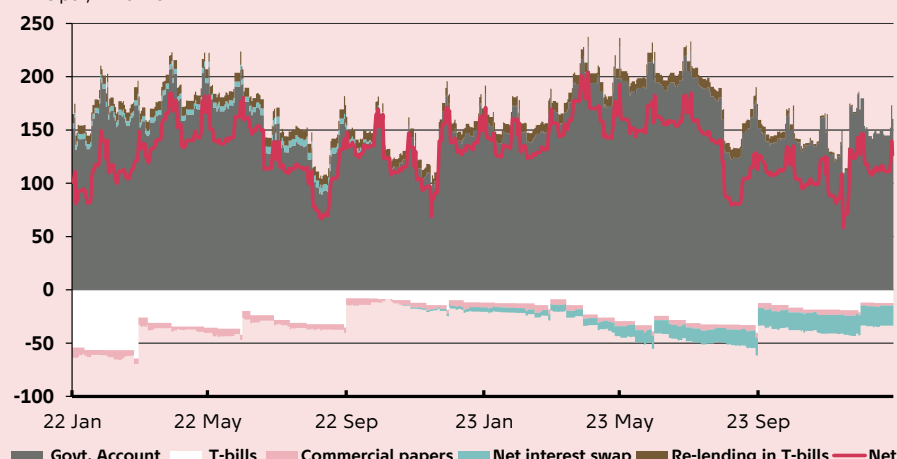
Government account balances contribute significantly to fluctuations in the interest costs of government debt when interest rates change, see Chart 22. Through 2023, there has been an increase in the volume of interest rate swaps via which the central government receives the fixed interest rate and pays the variable interest rate. Since the central government pays a variable interest rate

in this type of interest rate swap, the increased swap size reduces the exposure to short-term interest rates. Consequently, interest rate swaps can be used to increase the stability of the central government's interest costs.

CHART 23

Government short-term interest-bearing assets and liabilities

Principal, kr. billion



Note: The Chart shows the central government's assets and liabilities, calculated as a total principal amount that carries a short-term interest rate. *Net interest rate swaps* cover the central government's interest rate swaps, which receive fixed interest and pay variable (short-term) interest, less interest rate swaps where the central government pays fixed interest and receives variable (short-term) interest. *Net* is the sum of the items, where a positive value means that the central government is a net recipient of the short-term interest rate.

Source: Danmarks Nationalbank.

There will often be a trade-off between stabilising interest costs while aspiring to reduce fluctuations in market value. In a scenario where the central government exclusively issued a 30-year bond, central government debt would achieve high interest rate stability but potentially large market value fluctuations. The opposite would be the case if the central government only issued T-bills. However, since the central government has more floating-rate assets than liabilities, interest rate swaps can initially increase interest rate stability while reducing market value risk. Stability is a result of a better match between government debt assets and liabilities.

Government debt refinancing and liquidity risk

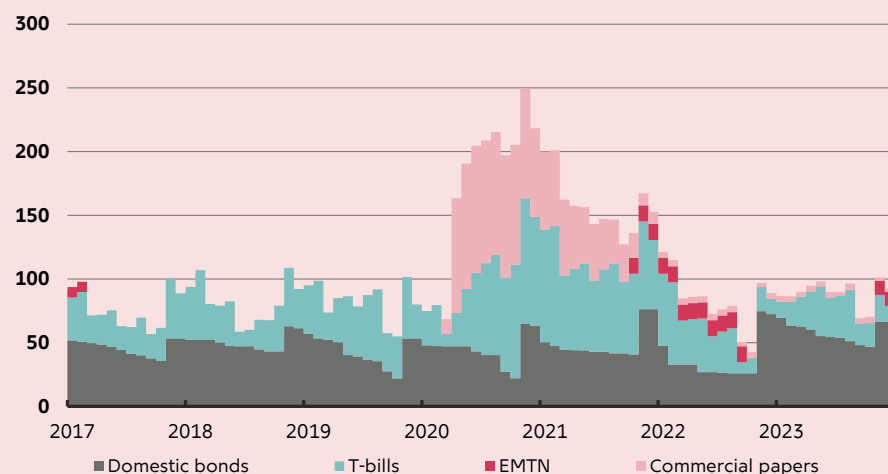
Government debt refinancing risk is the risk of having to issue debt at extraordinarily high interest rates or, in extreme cases, not being able to access the loan market. Through 2023, the short-term refinancing volume has remained relatively stable at just under DKK 100 billion, corresponding to approximately 17 per cent of gross debt, see Chart 24. For a given month, the short-term refinancing volume calculates the amount of existing debt that needs to be refinanced within the next 12 months.

In addition to the low short-term refinancing volume, the central government debt's even repayment profile contributes to the stability of the refinancing volume over time and thus the refinancing risk.

CHART 24

The short refinancing scope

Kr. billion



Note: Each column shows the next 12 months maturity of domestic bonds, T-bills (SKBV), foreign currency bonds (EMTN) and commercial papers.

Source: Danmarks Nationalbank.

Liquidity risk for government debt covers the risk of not being able to meet financial obligations due to a lack of market access or insufficient deposits in the central government's account. In day-to-day liquidity management, projections of deposits in the central government's account are monitored to ensure that the central government has liquidity to cover expected payments and a buffer to cover unexpected liquidity drains.

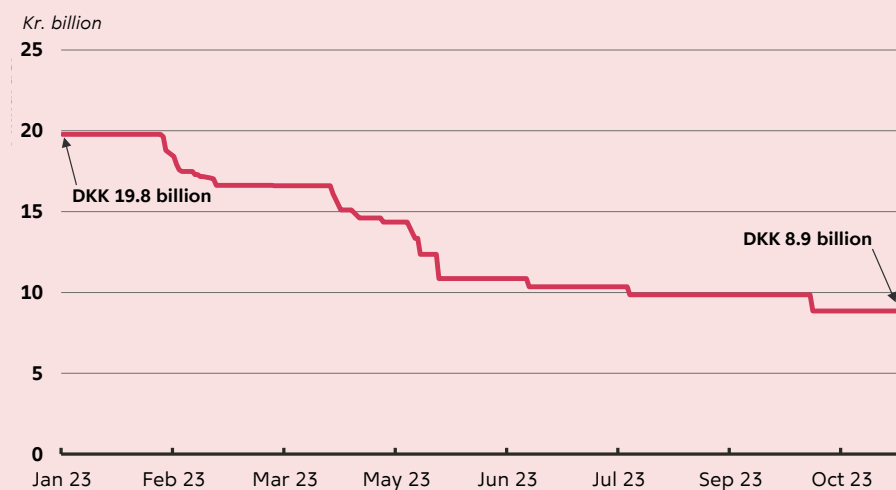
Purchases of inflation-linked bonds maturing in 2023 reduced the central government's index risk in 2023

In 2023, Debt Management actively reduced the outstanding amount in the index-linked bond DGBi 0.10 per cent 2023 to reduce the risk of having to pay a high final coupon and principal in the event of a positive inflation shock, see Chart 25. As the remaining maturity of the central government's inflation-indexed bonds is reduced, the risk of major fluctuations in the indexation due to surprisingly high or low inflation figures increases⁶. This made the central government's inflation-linked bond maturing in 2023 sensitive to the consumer price index for August and September. Furthermore, as inflation-linked bonds are often used by investors to hedge their long-term liabilities, there will be a natural demand for the central government to buy the paper. Buying totalling almost DKK 11 billion was spread evenly over 2023.

⁶ For more information on the central government's inflation-linked bonds, see Danmarks Nationalbank's website ([link](#)).

CHART 25

Acquisition of DGBi 0.10 per cent 2023 reduced the central government's index risk



Note: The chart shows the total outstanding amount, measured in nominal terms, of the inflation-linked bond DGBi 0.10 per cent maturing in 2023.

Source: Danmarks Nationalbank.

07

On-lending and central government guarantees

By consolidating public debt, the central government can reduce total public financing costs, as it can issue debt at a lower interest rate than, for example, individual state-owned companies. This is mainly because the central government can build up larger bond series and ensure good liquidity, which increases the liquidity premium that investors are willing to pay. In practice, consolidation is achieved by the central government providing on-lending to state-owned companies, see Box 4. On-lending is financed as part of the central government's total debt issuance. In addition, in some cases state guarantees are granted, which also helps to reduce the financing costs of state-owned companies.

BOX 4

On-lending to government-owned companies

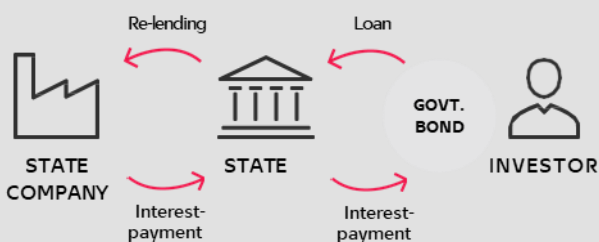
In connection with on-lending, the central government-owned company takes out a loan directly from the central government. The loan is disbursed from the central government's account to the company, and the resulting increase in the central government's financing needs is covered by the central government issuing bonds. The companies pay interest and make amortisations to the central government corresponding to the terms for government bonds. In addition, an annual commission rate is paid in accordance with LBK 849 of 22 June 2010¹. When a company requests on-lending, the price of the loan is fixed based on the market price of the corresponding government bond.

On-lending is based on a political wish to support selected projects through cheaper financing. As a result of the central government's high creditworthiness, on-lending means, just like government-guaranteed loans, that the company can obtain financing at a lower cost than if it had to raise the loan itself on the market. Financing via on-lending will normally be less expensive than if the company financed itself by issuing its own government-guaranteed bonds. One reason for this is that the government bond series have much higher liquidity. The company thus saves the liquidity premium that investors would otherwise demand in the form of a higher yield.

On-lending increases the government's borrowing needs because the on-loans are covered by increasing borrowing or by drawing on the central government's account. On-lending also increases the central government debt because the central government's asset in the form of the on-loan to the company is not offset in the calculation of the central government debt.

Chart

The transaction flows between the three players in relation to on-lending



¹ Promulgation of the Act on authorization to take out government loans, § 2 subsection 3.

During 2023, new on-lending was granted for a total of DKK 68 billion, bringing the on-lending volume to 32 per cent of total outstanding government debt. This corresponds to an increase of 22 per cent compared to 2022, where A/S Femern Landanlæg and Femern Bælt A/S together now account for 16 per cent of all on-lending. At the end of 2023, the central government managed government loan guarantees for DKK 7.7 billion, which is a decrease of 22 per cent compared to 2022. See Table 2 for an overview of government on-lending.

Establishment of the Danish Export and Investment Fund, EIFO

On 1 April 2023, Denmark's Green Investment Fund, EKF Denmark's Export Credit and the Danish Growth Fund were merged under the Danish Export and Investment Fund, EIFO. This means that EIFO manages approximately DKK 71.8 billion annually under the on-lending framework at Danmarks Nationalbank.

TABLE 2

On-lending in 2023

Mia. kr.	Holding, year-end 2022	Gross uptake in 2023	Amortisations and prepayments in 2023	Holding, year-end 2023
A/S Femern Landanlæg ¹	14.3	10.0	-	23.1
A/S Storebæltsforbindelsen	17.9	2.4	3.3	17.2
A/S Øresundsforbindelsen	12.0	2.5	1.7	12.9
Denmark's Export and Investment Fund ²	23.9	36.4	26.0	35.2
Denmark's Green Future Fund	0.5	0.2	-	0.7
Danmarks Skibskredit A/S	0.1	-	0.1	-
DR (Danish Broadcasting Corporation)	2.6	0.6	0.6	2.6
Energinet	31.6	6.2	3.3	34.8
Evida Holding A/S	2.5	-	-	2.5
Femern Bælt A/S	7.2	-	-	7.2
Hovedstadens Letbane I/S	2.3	2.1	0.2	4.9
Investment Fund for Developing Countries (IFU)	0.4	0.4	-	0.8
Kalaallit Airports International A/S	0.6	0.1	-	0.8
Metroselskabet I/S	31.8	3.2	4.1	31.1
Naviar	0.5	-	-	0.5
Scandinavian Airlines System	1.1	-	-	1.1
Sund & Bælt Holding A/S	0.3	0.2	-	0.5
Udviklingsselskabet By & Havn I/S	14.8	4.1	2.5	17.4
Total	164.5	68.3	41.8	193.2

¹ On-lending to A/S Femern Landanlæg is calculated without on-lending raised at term.

² The figures for the former state-owned on-lending companies Denmark's Green Investment Fund, EKF Denmark's Export Credit Agency and the Danish Growth Fund have been placed under the Danish Export and Investment Fund.

Note: The portfolios of on-lending are stated at nominal value, while gross borrowings, amortisation and prepayments are stated at market value.

Source: Danmarks Nationalbank.

TABLE 3
Loan guarantees managed by Danmarks Nationalbank on behalf of the central government

Year-end 2023	DKK million
A/S Femern Landanlæg	1,308
A/S Storebæltsforbindelsen	877
A/S Øresundsforbindelsen	808
DR (Danish Broadcasting Corporation)	436
DSB	164
The Danish Guarantee Fund for Non-life Insurers	23
Kalaallit Airports International A/S	450
Øresundsbro Konsortiet I/S	3,594
Total	7,660

Note: The figures include guaranteed swaps.
Source: Reports from state-owned companies.

08 Social housing

Since 2018, the Danish government has been buying mortgage bonds to finance subsidised construction, such as social housing. The bonds are purchased at the central government interest rate, which ensures that the financing of social housing is done on the same terms as the central government. The purchases have contributed to further consolidation of public debt, which reduces public interest expenses and contributes to the maintenance of a well-functioning government debt market, as central government can maintain a higher issuance volume of Danish government bonds.

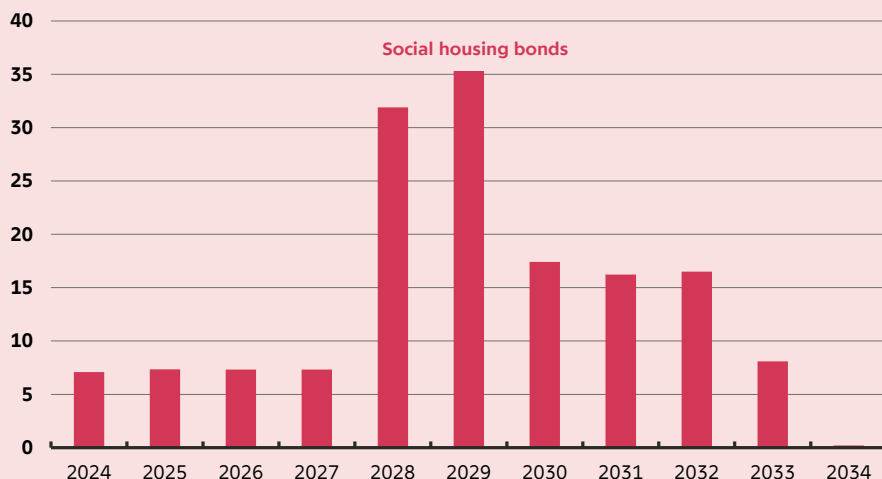
During 2023, the central government purchased bonds to finance subsidised construction for DKK 7.3 billion, excluding the year's maturities. This is a decrease of 68 per cent compared to the previous year. The large decrease is due to a significant reduction in purchases from DKK 28 billion in 2022 to DKK 13.9 billion in 2023. The current holding represents 26 per cent of the total outstanding government bonds.

In 2024, the central government is expected to buy bonds to finance subsidised construction for approx. DKK 13 billion, and will have a maturity of DKK 7.1 billion, see Chart 26.

CHART 26

Maturity profile for mortgage bonds for financing subsidised construction

Kr. billion



Note: Maturity size of bonds purchased in connection with subsidised construction per year. Values are stated at nominal value.

Source: Danmarks Nationalbank.

09 Government funds

On behalf of the Danish state, Danmarks Nationalbank manages the administration of the funds in Innovation Fund Denmark and Fund for Better Working Environment and Labour Retention. The assets of the two funds are offset in the calculation of central government debt and are managed together with the central government's other financial assets and liabilities under the central government debt area.

On 2 May 2023, the Den Sociale Pensionsfond (social pension fund) was closed by law after having no funds since 2021, and the fund is no longer included in central government accounts.

Innovation Fund Denmark

The assets in Innovation Fund Denmark totalled DKK 12.3 billion at the end of 2023, see Table 5. Of these, 99.8 per cent of the assets are invested in Danish government bonds, while the remaining percentage is held in the central government's account. In 2023, DKK 400 million was transferred to the Ministry of Higher Education and Science, mainly for new initiatives that promote growth and job creation through knowledge. The transfers were mainly financed through the sale of government bonds and, to a lesser extent, through interest income in the fund, see Table 4.

Fund for Better Working Environment and Labour Retention

The assets in the Fund for Better Working Environment and Labour Retention totalled DKK 0.71 billion at the end of 2023. This is an increase of 2.5 per cent from the previous year, which mainly stems from interest income from both investment in Danish government bonds and investment of funds in the central government's account. For most of 2023, the assets have been invested in government bonds maturing in the same year. By the end of 2023, all funds were placed in the central government's account at Danmarks Nationalbank. The fund only invests in Danish government bonds and there were no transfers from the fund in 2023.

TABLE 4

Fund income and expenses in 2023

DKK million	Innovation Fund Denmark	Fund for Better Working Environment and Labour Retention
<i>Revenue</i>		
Interest, etc. ¹	19	19
<i>Expenses</i>		
Transfer to Ministry	400	-
<i>Difference</i>		
Net income	-381	19

¹ Net statement of interest received, interest receivable and distributed capital losses on buy-backs.

Source: Danmarks Nationalbank.

TABLE 5

State fund assets at the end of 2023

	Innovation Fund Denmark		Fund for Better Working Environment and Labour Retention	
	Nominal value, DKK billion	Share of total, per cent	Nominal value, DKK billion	Share of total, per cent
7.00 per cent bullet loan 2024	1.1	9.1	-	-
1.75 per cent bullet loan 2025	2.1	16.7	-	-
0.50 per cent bullet loan 2027	3.7	30.3	-	-
0.50 per cent bullet loan 2029	2.8	22.3	-	-
0.00 per cent bullet loan 2031	1.2	9.7	-	-
4.50 per cent bullet loan 2039	1.4	11.6	-	-
Government bonds, total	12.3	99.8	-	-
Account balance	0.03	0.2	0.7	100.0
Total assets	12.3		0.7	

Note: The funds' ownership shares may not add up to totals due to rounding.
Source: Danmarks Nationalbank.

10

Appended tables

APPENDIX TABLE A1

Government debt at the end of 2013-2023 (continued next page)

DKK million	2013	2014	2015	2016	2017
A. Loans					
<i>Domestic loans</i>					
- bonds, nominally fixed rate	615,907	637,617	584,356	572,020	570,222
- bonds, inflation-linked ¹	23,251	35,531	35,667	38,193	38,765
- fishery bank bonds	594	507	424	343	272
- T-bills	32,300	29,800	29,840	27,180	32,740
- currency swaps from DKK to EUR ² (net)	-1,490	-	-	-	-
- currency swaps from DKK to USD	-6,364	-5,215	-4,067	-2,942	-1,872
Total domestic debt	664,198	698,240	646,220	634,794	640,127
<i>Foreign loans³</i>					
- in USD	6,219	5,778	5,047	3,795	2,152
- in EUR	69,689	53,207	28,223	8,044	-
- in other currencies and multiple currencies	-	-	-	-	-
Total foreign debt	75,908	58,986	33,270	11,839	2,152
Total domestic and foreign debt	740,106	757,225	679,490	646,633	642,279
B. Collateral for swaps ⁴	3,596	3,804	2,859	1,610	1,005
C. Deposits in Danmarks Nationalbank ⁵	-161,953	-213,099	-157,376	-110,928	-134,689
D. DSP, Danish Foundation for Prevention and Retention and Innovation Fund Denmark					
- government securities	-62,550	-64,825	-62,399	-63,233	-52,084
- other securities	-32,352	-25,259	-17,172	-8,834	-7,432
Total for the two funds	-94,902	-90,084	-79,571	-72,067	-59,516
E. Bonds for financing social housing	-	-	-	-	-
Total government debt (A+B+C+D+E)	486,848	457,846	445,402	465,249	449,079
Total government debt as percentage of GDP	25.2	23.1	21.9	22.1	20.5

¹ Index-linked bonds are recognised at indexed value at year-end.

² Currency swaps from DKK to EUR minus currency swaps from EUR to DKK.

³ Foreign loans are recognised by final exposure.

⁴ Cash collateral for the market value of the central government's swaps. Net collateral received from counterparties.

⁵ Deposits are calculated including the account balances of the central government funds. The central government's account is calculated according to Danmarks Nationalbank's monthly balance sheet.

Note: Positive values indicate a liability, while negative values indicate an asset.

Source: Danmarks Nationalbank.

APPENDIX TABLE A1

Government debt at the end of 2013-2023 (continued)

DKK million	2018	2019	2020	2021	2022	2023
A. Loans						
<i>Domestic loans</i>						
- bonds, nominally fixed rate	543,732	543,075	597,153	602,728	561,722	549,493
- bonds, inflation-linked ¹	43,897	44,957	44,223	47,602	55,318	35,243
- fishery bank bonds	200	129	108	86	65	43
- T-bills	30,400	23,980	83,180	54,200	11,820	12,400
- currency swaps from DKK to EUR ² (net)	-	-	-	-	-	-
- currency swaps from DKK to USD	-1,022	-400	-67	-	-	-
Total domestic debt	617,207	611,741	724,596	704,616	628,925	597,179
<i>Foreign loans³</i>						
- in USD	1,244	497	71	-	-	-
- in EUR	-	-	82,132	22,012	15,668	24,044
- in other currencies and multiple currencies	-	-	-	-	-	-
Total foreign debt	1,244	497	82,202	22,012	15,668	24,044
Total domestic and foreign debt	618,450	612,239	806,798	726,628	644,593	621,223
B Collateral for swaps ⁴	690	267	-370	573	279	517
C Deposits in Danmarks Nationalbank ⁵	-111,674	-70,411	-136,875	-151,533	-161,779	-160,461
D DSP, Danish Foundation for Prevention and Retention and Innovation Fund Denmark						
- government securities	-48,454	-32,267	-25,851	-12,555	-12,665	-12,310
- other securities	-1,675	-1,675	-	-	-	-
Total for the two funds	-50,129	-33,942	-25,851	-12,555	-12,665	-12,310
E Bonds for financing social housing	-30,298	-86,784	-107,689	-124,960	-147,525	-154,707
Total government debt (A+B+C+D+E)	427,039	421,368	536,014	438,153	322,903	294,262
Total government debt as percentage of GDP	19.0	18.2	23.1	17.5	11.9	10.5

^{1.} Index-linked bonds are recognised at indexed value at year-end.

^{2.} Currency swaps from DKK to EUR minus currency swaps from EUR to DKK.

^{3.} Foreign loans are recognised by final exposure.

^{4.} Cash collateral for the market value of the central government's swaps. Net collateral received from counterparties.

^{5.} Deposits are calculated including the account balances of the central government funds. The central government's account is calculated according to Danmarks Nationalbank's monthly balance sheet.

Note: Positive values indicate a liability, while negative values indicate an asset.

Source: Danmarks Nationalbank

APPENDIX TABLE A2

Government funding requirement 2021-23

DKK billion	2021	2022	2023
Operating, capital expenditure and lending budget	33.1	186.1	NA.
On-lending etc.	-1.9	-7.5	NA.
Allocated issue tax losses and interest payable ¹	6.6	2.7	NA.
Other capital items ²	72.7	-52.5	NA.
Net cash balance	110.5	128.7	28.9
Net financing requirement (= net cash balance)	-110.5	-128.7	-28.9
Repayment of long-term domestic government debt ³	148.3	143.2	113.6
Amortisation of T-bills ⁴	83.2	54.2	11.8
Domestic financing requirement ⁵	120.9	68.7	96.5
Repayment of long-term foreign government debt ⁶	0.1	12.6	0.0
Amortisations on commercial papers ⁴	69.5	9.4	4.5
Financing requirement	190.5	90.7	101.0

¹ Incl. purchase price loss.

² Includes central government's holding movements, cf. the Ministry of Finance's budget summaries.

³ Incl. net purchases of bonds from government funds, change in collateralisation for swaps and purchases of bonds to finance subsidised construction.

⁴ Corresponds to the outstanding balance at the end of the previous year.

⁵ May deviate from actual domestic funding requirement, e.g. due to foreign on-lending.

⁶ Incl. net payments on currency swaps.

Source: Central Government Accounts. 2023 is based on Danmarks Nationalbank's year-end statement, which may differ from accounting figures.

APPENDIX TABLE A3

Interest payments on government debt 2016-23

DKK billion	2016	2017	2018	2019	2020	2021	2022	2023
Domestic debt	21.5	18.5	15.6	14.2	17.1	15.1	9.3	3.0
Foreign debt	0.1	0.0	-0.1	-0.1	-0.6	-0.4	-0.1	0.4
Central government's account at Danmarks Nationalbank	0.3	0.2	0.8	0.5	0.6	0.5	0.1	-4.8
Government funds	-4.1	-1.5	-1.2	-1.4	-0.9	-0.3	0.0	0.0
Bonds for financing social housing	0.0	0.0	0.0	0.0	0.1	0.2	0.1	-0.3
Government debt	17.8	17.1	15.1	13.2	16.3	15.1	9.4	-1.7
Government debt, percentage of GDP	0.8	0.8	0.7	0.6	0.7	0.6	0.33	-0.06
Government on-lending	-2.1	-2.0	-1.5	-1.4	-1.3	-1.1	-1.1	-1.6
Government debt, adjusted for on-lending	15.7	15.2	13.6	11.8	15.1	14.0	8.3	-3.3
Government debt, adjusted for on-lending, percentage of GDP	0.7	0.7	0.6	0.5	0.6	0.5	0.29	-0.12

Note: A positive sign indicates an interest expense, while a negative sign indicates an interest income.

Source: Central Government Accounts and *Economic Report, December 2023*. Figures for 2023 are preliminary figures from government accounting.

APPENDIX TABLE A4

Central government domestic borrowing 2023

ISIN code	Nominal interest rate, per cent	Title	Opened	Last pay date	Amount issued, nominal, DKK million	Amount issued, market value, DKK million
<i>Government bonds</i>						
DK0009924292	0.00	Bullet loan 2024	5 May 2021	15 Nov 2024	3,525	3,350
DK0009923138	1.75	Outstanding loans 2025	23 May 2014	15 Nov 2025	21,520	20,944
DK0009924102	0.00	Bullet loan 2031	20 Jan 2021	15 Nov 2031	1,400	1,121
DK0009924532	2.25	Outstanding loans 2033	8 Feb 2023	15 Nov 2033	36,185	34,507
DK0009924615	2.25	Green bullet loan 2033	26 Sep 2023	15 Nov 2033	10,030	9,372
DK0009924458	0.10	DGBi 2034	14 Sep 2022	15 Nov 2034	4,710	4,904
DK0009924029	0.25	Outstanding loans 2052	1 Apr 2020	15 Nov 2052	2,035	1,040
Total government bonds					79,405	75,237
<i>T-bills</i>						
DK0009818858	0.00	T-bill 2023 I	30 Aug 2022	1 Mar 2023	340	339
DK0009818932	0.00	T-bill 2023 II	29 Nov 2022	1 Jun 2023	11,820	11,756
DK0009819070	0.00	T-bill 2023 III	27 Feb 2023	1 Sep 2023	27,960	27,691
DK0009819153	0.00	T-bill 2023 IV	30 May 2023	1 Dec 2023	9,000	8,896
DK0009819237	0.00	T-bill 2024 I	30 Aug 2023	1 Mar 2024	11,260	11,091
DK0009819310	0.00	T-bill 2024 II	29 Nov 2023	3 Jun 2024	1,140	1,120
Total T-bills					61,520	60,894
Total domestic borrowing					140,925	136,131

Note: Issues in connection with switches are included.
Source: Danmarks Nationalbank.

APPENDIX TABLE A5.1

Domestic government loans at year-end 2023

DKK million	Outstanding at year-end 2022	Issues 2023	Amortisation 2023	Outstanding at year-end 2023	Last pay date	ISIN code
Fixed-rate government bond loans						
<i>Bullet loans</i>						
DGB 1.5% 15/11/2023	48,250	-	48,250	-	15. Nov 2023	DK0009923054
DGB 7.00% 10/11/2024	2,897	-	-	2,897	10. Nov 2024	DK0009918138
DGB 0.00% 15/11/2024	63,660	3,525	3,700	63,485	15. Nov 2024	DK0009924292
DGB 1.75% 15/11/2025	46,780	21,520	-	68,300	15. Nov 2025	DK0009923138
DGB 0.50% 15/11/2027	67,490	-	3,190	64,300	15. Nov 2027	DK0009923567
DGB 0.50% 15/11/2029	67,280	-	11,380	55,900	15. Nov 2029	DK0009923807
DGB 0.00% 15/11/2031	79,365	1,400	14,075	66,690	15. Nov 2031	DK0009924102
DGB 0.00% 15/11/2031 Green	16,240	-	-	16,240	15. Nov 2031	DK0009924375
DGB 2.25% 15/11/2033 Green	-	10,030	-	10,030	15. Nov 2033	DK0009924615
DGB 2.25% 15/11/2033	-	36,185	-	36,185	15. Nov 2033	DK0009924532
DGB 4.50% 15/11/2039	111,920	-	6,330	105,590	15. Nov 2039	DK0009922320
DGB 0.25% 15/11/2052	57,840	2,035	-	59,875	15. Nov 2052	DK0009924029
<i>Inflation-indexed bullet loans¹</i>						
DGBi 0.10% 15/11/2023	25,844	-	24,135	-	15. Nov 2023	DK0009922916
DGBi 0.10% 15/11/2030	21,758	-	1,151	21,306	15. Nov 2030	DK0009923724
DGBi 0.10% 15/11/2034	-	5,235	-	13,937	15. Nov 2034	DK0009924458
<i>Unamortisable</i>						
5 per cent Danish-Icelandic Fund 1918	1	-	-	1	-	-
Total fixed-rate government bond loans	609,324	79,930	112,210	584,736		
T-bills						
SKBV 01/03/2023 I	9,140	340	9,480	-	1 Mar 2023	DK0009818858
SKBV 01/06/2023 II	2,680	11,820	14,500	-	1 Jun 2023	DK0009818932
SKBV 01/09/2023 III	-	27,960	27,960	-	1 Sep 2023	DK0009819070
SKBV 01/12/2023 IV	-	9,000	9,000	-	1 Dec 2023	DK0009819153
SKBV 01/03/2024 I	-	11,260	-	11,260	1 Mar 2024	DK0009819237
SKBV 03/06/2024 II	-	1,140	-	1,140	3 Jun 2024	DK0009819310
Total T-bills	11,820	61,520	60,940	12,400		
Fishery bank bonds						
5 per cent fishery bank bond 2025	65	-	22	43	1. Nov 2025	DK0009604894
Total fishery bank bonds	65	-	22	43		

Continues...

...continued

Total domestic government loans

Total domestic government securities	621,209	141,450	173,172	597,179
Swap from DKK to USD	-	-	-	-
Total domestic debt	621,209	141,450	173,172	597,179

¹ Issues in the index-linked bond are calculated including indexation on the issue/redemption dates. Outstanding amounts in the index-linked bond at year-end are calculated at indexed nominal value.

Source: Danmarks Nationalbank.

APPENDIX TABLE A5.2

Foreign government loans at the end of 2023

		Nominal interest rate, per cent	ISIN code	Last pay date	Outstanding amount, DKK million
Loans					
2022/2024	Euro loan	2.50	XS2547290432	18 Nov 2024	11,179
2023/2025	Dollar loan	5.00	XS2717986876	14 Nov 2025	10,117
2023/2025	Swap from USD				-5,059
2023/2025	Swap from USD				-5,059
2023/2025	Swap to EUR	ESTR + 2.85bp			5,230
2023/2025	Swap to EUR	ESTR + 3.00bp			5,230
Total loans					21,640
Commercial papers					
ECP programme					-
- issues in EUR					-
- issues in USD					-
USCP programme in USD					2,361
Currency forward contracts					43
Total CP outstanding					2,404
Total foreign debt					24,044

Note: The outstanding amount as of 31 December 2023 has been converted to DKK using the following exchange rates as of 29 December 2023: EUR = 745.29 and USD 674.47.

Source: Danmarks Nationalbank.

APPENDIX TABLE A6

Government portfolio interest rate swaps, end 2023

Expiry year	DKK interest swaps	EUR interest swaps	
	Net exposure, DKK million	Net exposure, EUR million	Net exposure, DKK million
2024	-	300	2,236
2025	3,000	550	1,863
2026	300	650	-4,844
2027	1,650	925	6,894
2028	600	-	-
2029	1,750	-	-
2031	350	200	1,491
2032	-	650	4,844
2033	-	50	373
Interest rate swaps in total	7,650	3,325	12,856

Note: Net exposure is calculated as the difference in principal between interest rate swaps where the central government receives a fixed interest rate and interest rate swaps where the central government pays a fixed interest rate.

Source: Danmarks Nationalbank

APPENDIX TABLE A7

On-lending and government guarantees administered by Danmarks Nationalbank 2018-23

DKK million	2018	2019	2020	2021	2022	2023
On-lending						
A/S Femern Landanlæg	2,600	3,900	5,400	11,220	14,250	23,110
A/S Storebæltsforbindelsen	17,040	17,271	18,286	18,219	17,948	17,178
A/S Øresundsforbindelsen	10,322	10,722	10,772	11,122	12,022	12,872
Denmark's Green Future Fund	-	-	-	130	454	651
Danmarks Skibskredit A/S ¹	1,751	889	347	161	73	-
DR (Danish Broadcasting Corporation)	3,044	2,902	2,801	2,801	2,599	2,609
Denmark's Export and Investment Fund ²	12,853	9,808	10,265	16,527	23,937	35,234
Energinet	25,505	28,724	31,037	29,466	31,635	34,800
Evida Holding A/S	-	-	-	2,499	2,499	2,499
Femern Bælt A/S	6,200	11,750	11,750	7,180	7,180	7,180
Fjordforbindelsen Frederikssund	650	750	780	780	-	-
Hovedstadens Letbane I/S	350	1,100	1,300	1,900	2,300	4,900
Investment Fund for Developing Countries (IFU)	-	142	188	264	426	812
Kalaallit Airports International A/S	-	-	-	249	634	784
Metroselskabet I/S	21,990	29,440	31,940	31,990	31,810	31,060
Naviair	-	-	-	500	500	500
Nordsøfonden (Danish national oil and gas company)	-	-	500	1,000	-	-
Sund & Bælt Holding A/S	300	650	650	650	300	500
Udviklingselskabet By & Havn I/S	13,850	12,700	12,300	12,500	14,800	17,400
Scandinavian Airlines System	-	-	-	-	1,088	1,088
Total on-lending	116,455	130,748	138,316	149,158	164,455	193,178
Guarantees						
A/S Femern Landanlæg	6	22	55	86	1,215	1,308
A/S Storebæltsforbindelsen	3,955	2,285	1,023	828	1,166	877
A/S Øresundsforbindelsen	447	439	465	528	804	808
DR (Danish Broadcasting Corporation)	436	436	436	436	436	436
DSB	1,687	749	286	245	205	164
Fjordforbindelsen Frederikssund	-	-	2	27	-	-
The Danish Guarantee Fund for Non-life Insurers	-	534	761	746	245	23
Kalaallit Airports International A/S	-	-	73	-	-	450
Sund og Bælt Holding A/S	-	-	-	-	-	-

Continues...

... continued

Øresundsbro Konsortiet I/S	13,189	11,976	8,039	6,767	5,755	3,594
Total guarantees	19,720	16,442	11,141	9,664	9,826	7,660

^{1.} On-lending in USD to Danmarks Skibskredit A/S is translated into DKK at the year-end exchange rate.

^{2.} The figures for the former state-owned on-lending companies Denmark's Green Investment Fund, EKF Denmark's Export Credit Agency and the Danish Growth Fund have been placed under the Danish Export and Investment Fund.

Note: Statement of guarantees includes guaranteed swaps. Loans based on index-linked bonds are recognised at nominal indexed value.

Source: Danmarks Nationalbank.

APPENDIX TABLE A8

Government purchases and funds' net purchases of government bonds from the market in 2023

DKK million, market value	The State	Fund for Better Working Environment and Labour Retention	Innovation Fund Denmark	Purchases from	DKK million, market value
1.5 per cent bullet loan 2023	12,376	688	-2,258	10,806	426
0.1 per cent bullet loan 2023i	13,391	-	-	13,391	1,220
0.0 per cent bullet loan 2024	3,550	-	-	3,550	1,390
7.0 per cent bullet loan 2027	2,905	-	-	2,905	1,535
0.5 per cent bullet loan 2029	9,959	-	-	9,959	768
0.1 per cent bullet loan 2030i	1,125	-	-	1,125	1,125
0.0 per cent bullet loan 2031	11,285	-	962	12,247	6,637
4.5 per cent bullet loan 2039	7,542	-	1,021	8,563	617
Total	62,133	688	-276	62,546	13,717

Source: Danmarks Nationalbank.

Publication series



NEWS

News is an appetiser that provides a quick insight into one of the Danmarks Nationalbank's longer publications. The series is targeted at people who need an easy overview and like a clear angle.



STATISTICAL NEWS

Statistical News focuses on the latest figures and trends in Danmarks Nationalbank's statistics. The series is targeted at people who want quick insight into current financial data.



REPORT

Report is a regular review of Danmarks Nationalbank's areas of work and business. Here you will find Danmarks Nationalbank's annual report. The series is for people who need a status report and update on the past period.



ANALYSIS

Analysis focuses on current issues of particular relevance to Danmarks Nationalbank's objectives. The analyses may also contain Danmarks Nationalbank's recommendations. They include our outlook for the Danish economy and our assessment of financial stability. The series is targeted at people with a broad interest in economic and financial matters.



ECONOMIC MEMO

Economic Memo provides insight into the analysis work being performed by Danmarks Nationalbank's employees. For example, Economic Memo contains background analyses and method descriptions. The series is primarily targeted at people who already have knowledge of economic and financial analyses.



WORKING PAPER

Working Paper presents research work by both Danmarks Nationalbank's employees and our partners. The series is primarily targeted at professionals and people with an interest in central banking research as well as economics and finance in a broader sense.

