

DANMARKS NATIONALBANK

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Danish government borrowing and debt 2018

- Denmark's government debt policy has been characterised by four years of very low funding costs and declining debt. In 2018, the central government debt fell to 19 per cent of GDP.
- The central government saves considerable interest costs by granting on-lending and buying bonds to finance social housing. At the same time, it contributes to supporting the market for government securities.
- Market liquidity is supported by the central government's activity in the secondary market and by a well-functioning primary dealer model.

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Central government debt and interest costs

Denmark's government debt policy has been characterised by four years of very low funding costs and declining debt. The low interest rates are the result of extraordinary monetary policy measures in the euro area and Denmark's high credit standing. The decline in debt reflects a balanced upswing since 2013 with government budget surpluses.

At the end of 2018, the Danish economy is well prepared to withstand future risks: Denmark has a competitive and flexible economy, low unemployment and sizeable current account surpluses. The EMU debt is among the lowest in Europe and at 33 per cent of GDP at end-2018, it is considerably below the limit of 60 per cent of GDP in the Stability and Growth Pact, cf. Chart 1.

The central government debt is below 20 per cent of GDP

The government budget surplus led to a reduction of the central government debt to kr. 427 billion at the end of 2018, corresponding to 19 per cent of GDP. This means that the debt as a ratio of GDP has fallen substantially since 2012, cf. Chart 2.

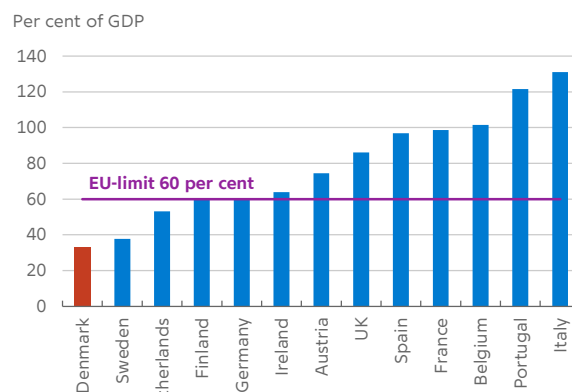
A rising share of the central government debt is made up of loans to government-owned companies (on-lending). At the end of 2018, the central government debt adjusted for on-lending totalled kr. 311 billion or 14 per cent of GDP, cf. Table 1.

Consolidation of borrowing supports the market for government securities

For many years, the central government has focused on consolidating borrowing by granting on-lending to government-owned companies. In 2018, the central government also restructured the financing of social housing.¹ The central government saves considerable interest costs by granting on-lending and buying bonds to finance social housing, as investors are willing to pay a higher price for liquid government bonds. In addition to lower borrowing costs, the consolidation serves to enable the central

Low EMU debt in Denmark

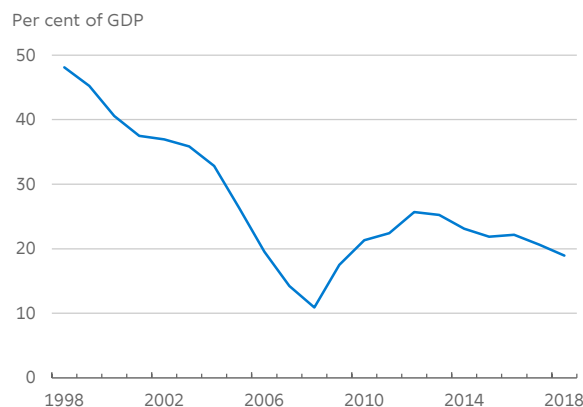
Chart 1



Note: Estimate for the end of 2018.
 Source: European Commission.

Central government debt remained low in 2018

Chart 2



Note: Year-end.

1 Cf. Jens Bindslev Agerholm, New financing of social housing strengthens the market for Danish government securities, *Danmarks Nationalbank Analysis*, No. 24, December 2018.

Central government debt at end-2018

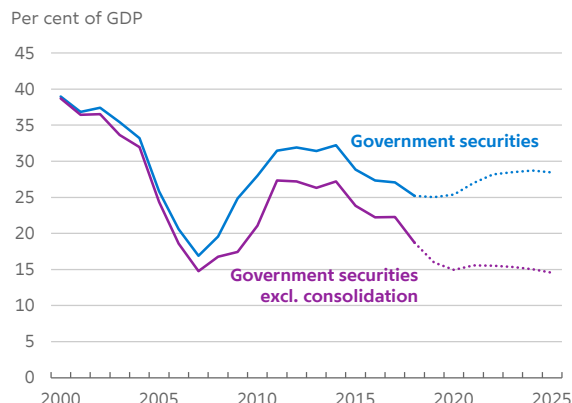
Table 1

	Kr. billion	Per cent of GDP
Domestic debt	617	27
Foreign debt ¹	1	0
Collateral related to swaps	1	0
The central government's account ²	-112	-5
Government funds	-50	-2
Bonds to finance social housing	-30	-1
Central government debt	427	19
On-lending	-116	-5
Central government debt adjusted for on-lending	311	14

- 1 This comprises commitments relating to swaps concluded for on-lending in dollars to Danish Ship Finance.
- 2 The balance on the central government's account at Danmarks Nationalbank.

Domestic market for government securities

Chart 3



Note: The outstanding volume of government securities less the government funds' government bond portfolio. Government securities excluding consolidation is a measure of what the outstanding volume of government securities would have been without on-lending and buying bonds to finance social housing.

Source: Economic Survey, December 2018, Denmark's Convergence Programme 2018 and own calculations.

government to maintain liquid on-the-run issues during a period of low and declining debt. This supports the market for government securities.

In the coming years, the domestic government securities market is expected to account for around 25 per cent of GDP, cf. Chart 3. Without the consolidation of borrowing, the government bond market would, within a few years, approach the low level seen in 2008 when maintaining a broad range of liquid on-the-run issues was a major challenge.

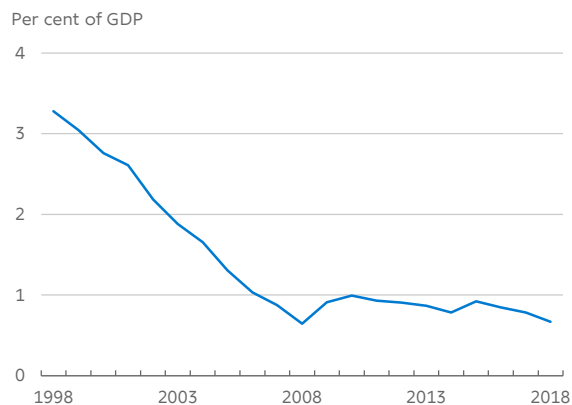
Lower interest costs

Despite nearly a doubling of debt since 2008, the low level of interest rates has enabled the central government to maintain low interest costs, cf. Chart 4. In 2018, interest costs on the central government debt amounted to kr. 15 billion, or 0.7 per cent of GDP.

A relatively large share of the interest costs reflects capital losses realised in connection with buy-backs of government bonds. The capital loss on buy-backs of approximately kr. 3.5 billion in 2018 is offset by a corresponding decline in future interest costs and is thus only an expression of future interest costs brought forward.

Central government interest costs declined further in 2018

Chart 4



Note: Figures for 2018 are provisional figures from the central government's accounting.

Source: Central government accounts.

Moreover, a share of approximately kr. 1.5 billion of the interest costs is paid by government-owned companies as a result of on-lending. Adjusted for these factors – interest costs brought forward and interest paid by government-owned companies – the central government's underlying interest costs in 2018 can be estimated at approximately kr. 10 billion. Given the

low debt and long fixed interest period, the central government is expected to benefit from low interest costs for a long time to come, even in scenarios with considerable interest rate increases, cf. the section on interest rate risk.

Government borrowing

Borrowing requirement maintained despite government budget surpluses ...

2018 showed a government budget surplus of kr. 25 billion.² However, borrowing consolidation in the form of on-lending to government-owned companies and new financing of social housing enabled the central government to maintain recent years' bond sales target of kr. 65 billion and thus to maintain liquid on-the-run issues. The central government bought bonds for kr. 32 billion to finance social housing and granted on-lending for kr. 30 billion in 2018.

... and continued normalisation of the central government's account

The balance on the central government's account was reduced in 2018. The strategy for 2019 is to normalise the balance on the account to the pre-crisis level with a target of kr. 50-75 billion, cf. Chart 5. This corresponds to the annual refinancing of government bonds in the coming years and is assessed to be a sufficient liquidity reserve for the central government.

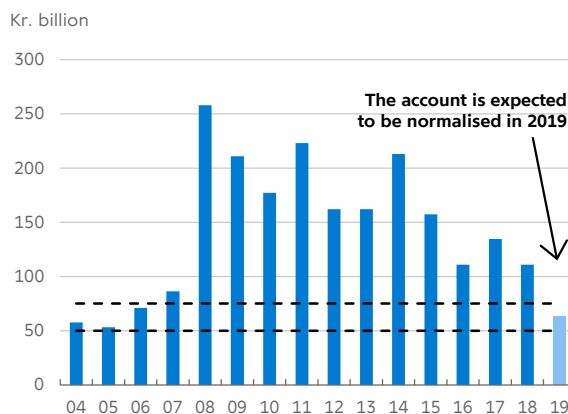
The central government issued bonds totalling kr. 65 billion

Bond issuance by the central government in 2018 via auctions and tap sales amounted to kr. 65 billion at market value in accordance with the target set, cf. Chart 6. Sales thus amounted to kr. 65 billion for the third year running and this target will also be maintained in 2019.

Issuance in 2018 was evenly distributed across the year with a stable sale per auction of around kr. 2.5 billion, cf. Chart 7. Demand for the bonds was higher than in 2017. Bids amounted to 2.4 times sales at the

Normalisation of the central government's account

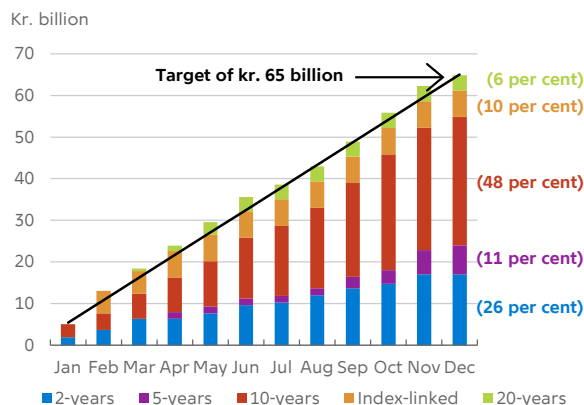
Chart 5



Note: Year-end.

Sales of government bonds in 2018 were consistent with the strategy

Chart 6



Note: Sales at market value. Percentage distribution in brackets.

² The central government net financing requirement less the central government's buying of bonds to finance social housing.

auctions. A predictable issuance policy stimulates investor interest, and at the same time the central government's interest rate exposure is distributed across the year.

Focus on 2- and 10-year securities

In view of the low issuance requirement in recent years, focus has been on issuance in the 2- and 10-year maturity segments. In 2018, 74 per cent of the issuance was in 0.25 per cent 2020 and 0.5 per cent 2027 bonds. The securities are built up over a 2-year period to kr. 50 billion and kr. 80 billion, respectively. This ensures that the securities are attractive to a broad group of Danish and international investors and supports liquidity. This contributes to lower borrowing costs for the central government.

Switch operations help to maintain more broad-based on-the-run issues

In recent years, the central government has successfully built up key on-the-run issues via switch operations, cf. Table 2. Switch operations support a faster build-up of the securities and allows it to maintain a broad range of on-the-run issues.

Index-linked on-the-run bonds

In February, the central government opened a new inflation-linked bond in the 10-year segment. The securities were mainly purchased by domestic investment funds.

At more than kr. 12 billion, demand at the opening auction was record-high, and sales totalled kr. 5 billion. Moreover, a substantial part of the build-up was effected via switches from the existing 5-year index-linked bond. The total outstanding volume of the two index-linked bonds is expected to be around kr. 50 billion, corresponding to 8 per cent of the domestic debt. This share is in line with the OECD average.

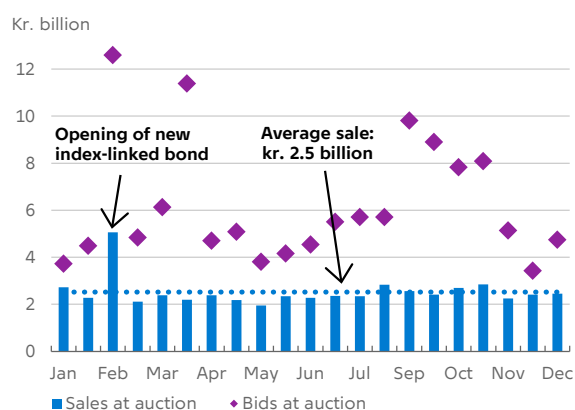
Interest rates remained low throughout 2018

In 2018, the central government issued nominal bonds at an average yield to maturity of 0.14 per cent and an average maturity of around 7.5 years. This is the fourth consecutive year with very low funding costs, cf. Table 3.

At the beginning of the year, the financial markets were characterised by fear of falling share prices and increased inflation. This caused a brief rise in interest rates. Interest rates subsequently fell back in the wake of political uncertainty in Italy and the

Bids and sales at auctions in 2018

Chart 7



Note: Sales at market value.

Central government issuance in 2018

Table 2

Kr. million, market value	Auctions and tap	Switch operations
0.25 per cent 2020	17,066	3,155
1.5 per cent 2023	6,886	1,563
0.5 per cent 2027	30,894	8,176
0.1 per cent 2030i	6,355	5,473
4.5 per cent 2039	3,657	-
Total	64,857	18,368

Yield to maturity on central government issuance of nominal bonds

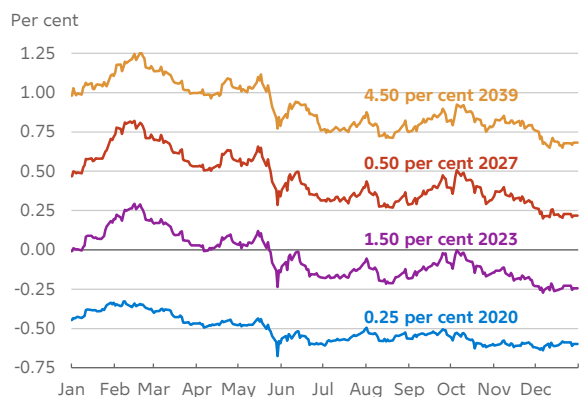
Table 3

	Average maturity, years	Average rate of interest
2013	9.6	1.42
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

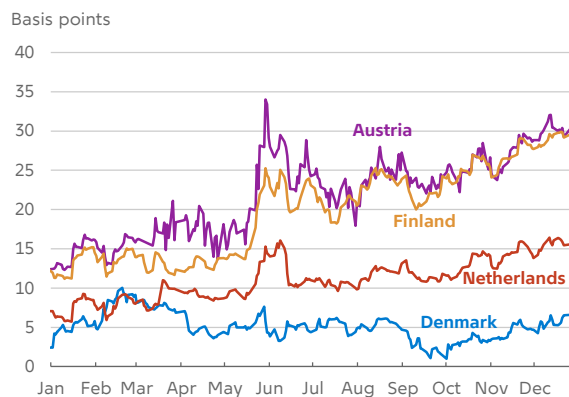
Low Danish government yields and narrowing of spread to Germany

Chart 8

Danish government yields in 2018



Yield spreads to Germany in 2018



Note: Yields to maturity (left) and par yield spreads to Germany in the 10-year segment (right).
 Source: Bloomberg and Nordea Analytics.

fear of escalating international trade restrictions and economic slowdown. At the end of the year, the 5-, 10- and 20-year yields were approximately 0.25 percentage point lower than at the beginning of the year, cf. Chart 8 (left).

Over the year, the yield spread to Germany has been around 5 basis points in the 10-year maturity segment, cf. Chart 8 (right). Denmark's narrow yield spread relative to those of comparable countries should be viewed in the light of strong confidence in the Danish economy and sound liquidity in Danish government securities. The high credit standing is confirmed by the largest international credit rating agencies, which have given Denmark the highest possible credit rating (AAA/Aaa) with a stable outlook.

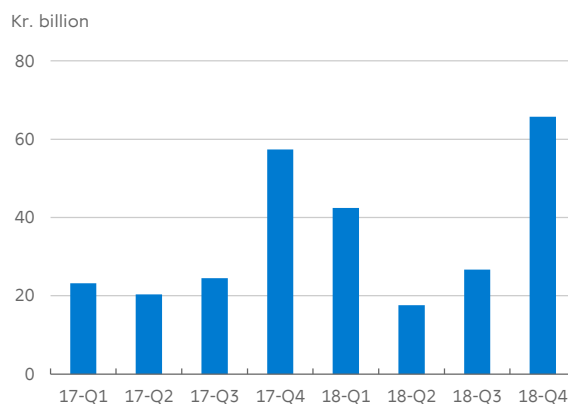
The outstanding volume of T-bills was kr. 30 billion at the end of the year

The outstanding volume in the T-bill programme was kr. 30 billion at the end of 2018, which was in accordance with the target set. Issuance of T-bills averaged a yield to maturity of -0.68 per cent and a maturity of 3.5 months.

The T-bills were almost exclusively bought by foreign investors. Especially dollar-based investors can achieve a higher return than in US T-bills by concluding currency swaps where they lend dollars and receive kroner and invest the latter in T-bills. In the

Bids at T-bill auctions

Chart 9



Note: Total bids per quarter.

last few years, interest in T-bills has been strongest towards the end of the year, cf. Chart 9.

Broad foreign demand

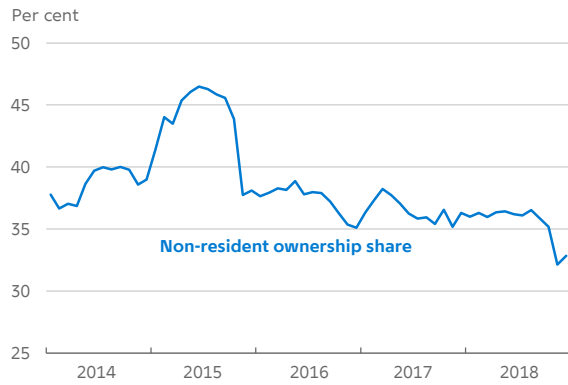
Non-resident ownership share of Danish government bonds has been broadly stable in the last three years, cf. Chart 10 (left). The fall in november 2018 reflects the redemption of the 2018 bond where foreign ownership share was high.

With respect to nominal bonds, non-resident investors are broadly represented for maturities up to the

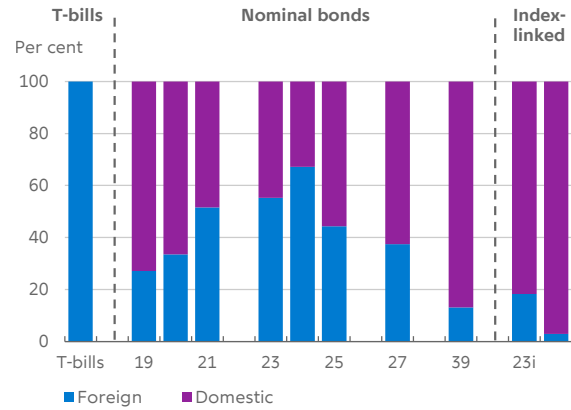
Stable foreign demand for Danish government securities

Chart 10

Non-resident ownership share of Danish government securities



Ownership distribution of Danish government securities



Note: Chart to the right: Year-end distribution. At the end of the year, domestic banks had a small negative holding of Danish T-bills.

10-year segment, cf. Chart 10 (right). Non-resident ownership is lower in the 2039 bond and the inflation-linked bonds.

The total foreign holdings of around kr. 207 billion shows a broad geographical distribution with Europe, North America and Asia as the most important areas. Investors are typically foreign pension funds and central banks.

Enhancing market liquidity

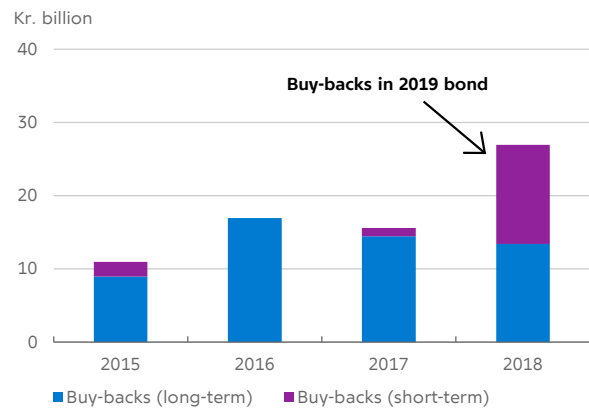
The central government was active in the secondary market

In 2018, the central government was active in the secondary market via tap sales, buy-backs and switch operations. As a result, the primary dealers have many opportunities to adjust their positions on an ongoing basis, thereby reducing their market risk. This enables the primary dealers to provide better service to their customers by offering larger transaction sizes and lower costs when trading government securities.

As a precondition for the central government to act in the secondary market, it must be able to make transactions at fair market prices. Consequently, there must be a sensible relationship between the

Buy-backs excluding switches

Chart 11



Note: Buy-backs within the year are not included. Buy-backs (short-term) of bonds maturing in the subsequent year. Buy-backs (long-term) of bonds maturing later.

prices of the central government's on-the-run and off-the-run securities.

Buy-backs smooth the central government's redemption profile

Buy-backs also contribute to smoothing the central government's redemption profile. Hence, the relatively sizeable 2019 bond accounts for a significant proportion of the buy-backs in 2018, cf. Chart 11. The

central government bought bonds maturing after 2019 for around kr. 13 billion, which is equivalent to the volume in the three preceding years.

Switch operations also aim to support liquidity

In 2018, regular switch operations were conducted twice a month, allowing primary dealers and investors to switch off-the-run issues to more liquid on-the-run issues. In 2018, bond buy-backs and issuance in connection with switches amounted to kr. 22 and 18 billion, respectively, cf. Table 4.

Securities lending

The central government's primary dealers have access to the securities lending facilities of the central government and the Social Pension Fund. As a result, the primary dealers can borrow government securities against collateral on a temporary basis if the securities are not readily available in the market. This supports primary dealers' market making and reduces the risk of transactions not being settled due to non-delivery.

The central government charges a lending fee of 0.10 per cent in order to encourage interdealing among market participants. The facility is used to a relatively limited extent. This is evidence of a generally well-functioning market with no persistent shortage of specific securities.

Switch operations in 2018

Table 4

Kr. million, market value	Buy-backs	Issuance
4 per cent 2019	1,768	-
0.25 per cent 2020	-	3,155
3 per cent 2021	3,386	-
1.5 per cent 2023	-	1,563
0.1 per cent 2023i	5,683	-
1.75 per cent 2025	10,680	-
0.5 per cent 2027	-	8,176
0.1 per cent 2030i	-	5,473
Total	21,816	18,368

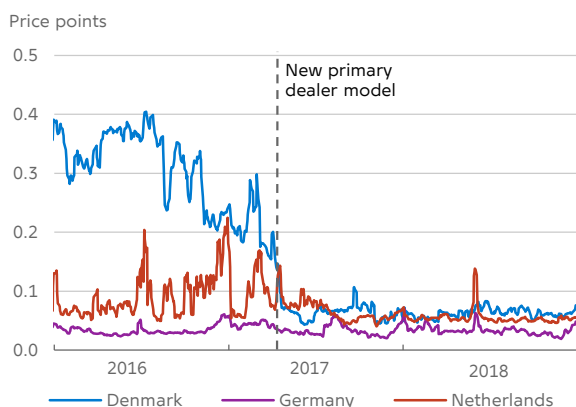
The primary dealer model supports trading in the secondary market

The new primary dealer model, introduced in April 2017, is still working well. The primary dealers quote tight two-way prices in the interdealer market, cf. Chart 12 (left). The concentration on individual banks, as regards trading in the interdealer market, is still lower than before the adjustment of the primary dealer model, cf. Chart 12 (right).

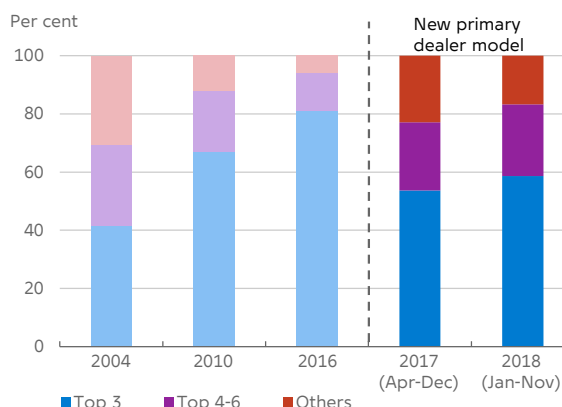
Sharp prices and relatively low transaction concentration in the interdealer market

Chart 12

Bid-ask spread, 10-year government bond



Share of turnover in the interdealer market



Note: Right: Top 3 denotes the total share of turnover in the interdealer market for Danish government bonds for the three primary dealers with the largest market shares. Correspondingly for top 4-6, etc. The new primary dealer model was introduced with effect from 1 April 2017.
 Source: Left: MTS Denmark, MTS Netherlands and TradeWeb Germany. Right: MTS Denmark and HRF-reports with primary dealers' trading in Danish central government securities.

The responses of several large Danish and international investors paint a clear picture of a well-functioning market where liquidity enables trading for large amounts without any significant effect on market prices.

The improved liquidity makes it cheaper for investors to trade Danish government securities, and several investors have stated that they are, accordingly, taking more active positions. This helps create an active marketplace and a positive spiral for market liquidity.

Risk management

Risk identification and risk management, including market risk and operational risk, constitute an important element of government debt management. The overall risk is assessed to be low, primarily due to the low debt level and long fixed interest period. The introduction of a new portfolio management system has reduced operational risks.

The central government's market risk is mainly associated with interest rate developments. This reflects, inter alia, that the central government had no exchange rate exposure at the end of 2018. Moreover, the central government has virtually no counterparty credit exposure in connection with swaps. The reason is that the counterparties and the central government pledge collateral for the market value and that the collateral is adjusted on a daily basis.

Interest rate risk

The central government's interest rate risk is the risk of higher interest costs as a result of the central government having to obtain financing at higher interest rates in the future. The risk depends on the debt level and composition, and it is managed on a consolidated basis for the central government assets and liabilities, cf. Box 1.

In risk management, the average fixed interest period – or duration – is used as a guide for management of the interest rate risk on the debt portfolio. High duration means that the interest rate on the

debt is locked for a long period of time, limiting the exposure to rising interest rates.

Very low interest rate risk

In 2018, the average duration of central government debt was 11.7 years. This is high by international standards and in the upper part of the strategic band (benchmark) for 2018, which was set at 11.0 ± 1.0 years at the beginning of the 2nd half.

Given the low debt and long fixed interest period, the central government is expected to benefit from low interest costs for a long time to come, even in scenarios with considerable interest rate increases. The central government's interest costs adjusted for on-lending are expected to be kr. 9.5 billion in 2019, and a further decline is expected in the coming years, cf. Chart 13 (left). Only a few scenarios in the projection entail higher interest costs over the next five years than in 2019. The calculation does not take into account any bringing forward of interest expenses due to capital losses on buy-backs.

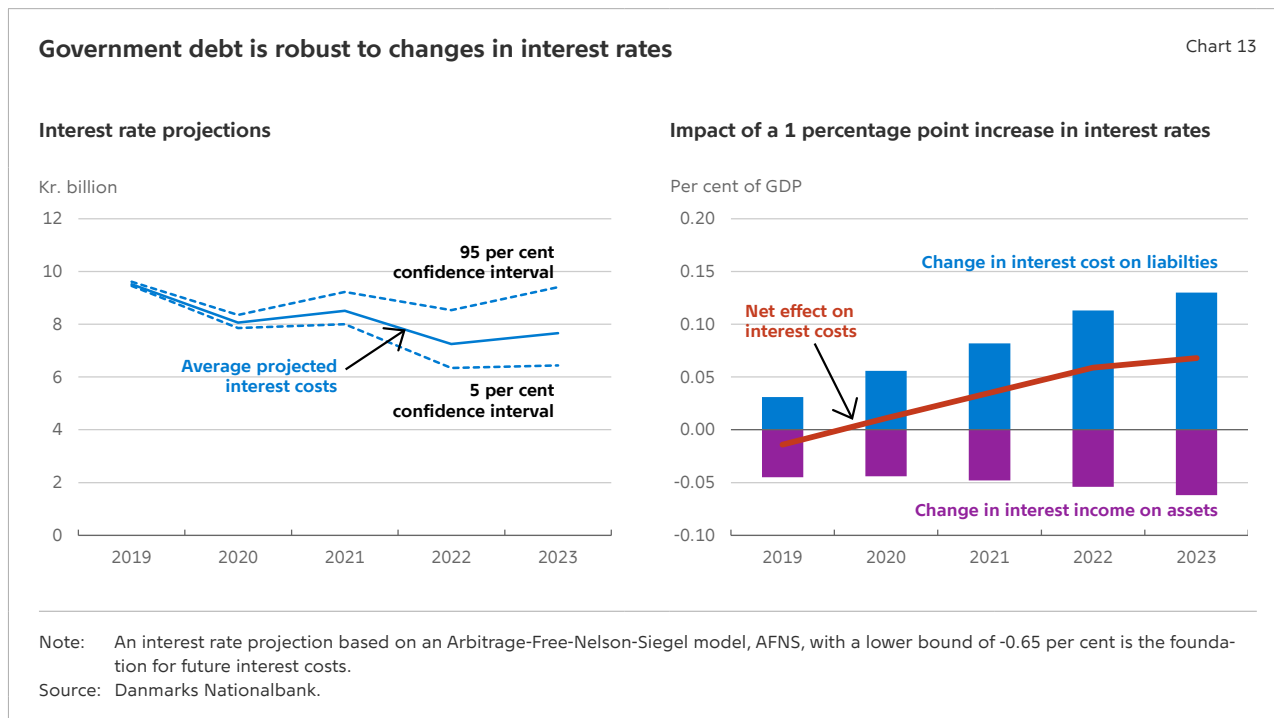
The robustness of the debt can also be illustrated by a calculation of the effect on interest costs of a parallel upward shift to the yield curve of 1 percentage point in early 2019. Initially, this would reduce interest costs, given the high balance on the account, but interest costs would rise as a larger part of the debt is refinanced. But after five years, interest costs would only have increased by kr. 1.8 billion, or 0.07 per cent of GDP, cf. Chart 13 (right).

The target band for the average duration in 2019 is set at 11.0 years \pm 0.5 year, calculated without dis-

The ALM principle governs central government interest rate risk management

Box 1

The central government's interest rate risk is managed on a consolidated basis according to the Asset Liability Management, ALM, principle. This entails that the interest costs on liabilities and the interest revenue from assets are viewed on a consolidated basis. Liabilities consist of domestic and foreign debt, while assets consist of the balance on the central government's account with Danmarks Nationalbank and the government funds, including the central government's own portfolio. In addition, on-lending to government-owned companies is offset, since these loans are serviced by the government-owned companies.



counting. This means that the robust central government debt profile will be maintained.

Operational risk

Operational risk is the risk of direct or indirect losses, e.g. reputational loss, due to inexpedient or inadequate internal procedures, human errors and system errors or external events, including legal risks. These risks can be highly diverse. That is why risk management partly aims to ensure uniformity and comparability between operational risks, which makes it possible to prioritise initiatives. A number of measures to reduce operational risk have been implemented over the years.

A consolidated portfolio management system ensures safer and more efficient work routines

Danmarks Nationalbank is responsible for the management of the central government debt. This ensures high, consistent quality in operational risk management, given that the resources are all in one place.

Moreover, Danmarks Nationalbank uses one system for management of both the government debt portfolio on behalf of the central government and its own portfolios. Thereby it is avoided that govern-

ment debt management and the central bank have to develop and maintain separate complicated and expensive systems and processes, as is the case in many other countries. In addition, the introduction of a new portfolio management system has enabled collection and automation of many processes, e.g. in a dashboard, which has reduced operational risks, strengthened governance and compliance and entailed considerably more efficient day-to-day operation.

On-lending and government guarantees

A number of government-owned companies may raise loans directly from the central government, on-lending, cf. Box 2. In 2018, on-lending by the central government amounted to kr. 28 billion nominally, cf. Table 5. The largest borrowers were Femern Belt A/S and the Metro Company. At end-2018, the total outstanding volume of on-lending was kr. 116 billion, corresponding to an increase of kr. 12 billion relative to 2017.

Even distribution of on-lending across 2018

In 2018, the companies raised on-lending evenly across the whole year, cf. Chart 14 (left). An even

On-lending

Box 2

On-lending means that loans are raised directly from the central government. The loan proceeds are paid from the central government's account, and the resulting financing requirement is met via the central government's current issuance of bonds. The companies pay interest and redemptions to the central government, mirroring the terms and conditions for government bonds.

When a company requests on-lending, the price of the loan is fixed based on the market price of the corresponding government bond. As a main rule, the companies pay annual commission of 0.15 per cent of the total loan volume to the government.

On-lending derives from the political intention of supporting selected projects through cheaper funding. Due to the

central government's high credit rating, on-lending – like government-guaranteed loans – gives the company access to cheaper funding than if it had to raise the loan in the market. Funding through on-lending is usually less expensive for the company than issuance of government-guaranteed bonds, because liquidity is considerably higher in the central government's bond series. The company saves the liquidity premium that would otherwise be required by investors in the form of higher interest rates.

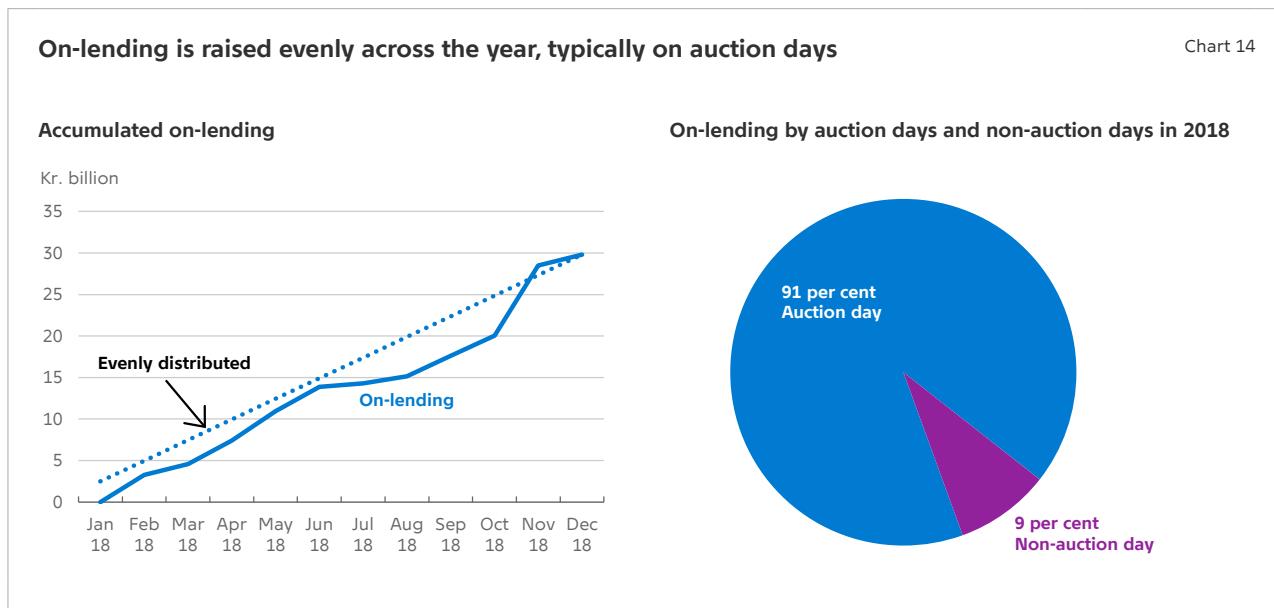
On-lending increases the central government debt because it increases the central government's borrowing or reduces the balance on the central government's account, while the asset in the form of the loan from the central government to the company is not offset.

On-lending in 2018

Table 5

Kr. billion, nominal value	Portfolio end-2017	Borrowing in 2018	Redemptions in 2018	Portfolio end-2018
Infrastructure				
Femern Landworks	1.4	1.5	0.3	2.6
The Great Belt Bridge	15.1	3.5	1.6	17.0
Øresund Landworks	10.3	1.8	1.7	10.3
Energinet	23.0	2.5	0.0	25.5
Femern Belt A/S	2.6	6.2	2.6	6.2
Fjord Link Frederikssund	0.5	0.1	0.0	0.7
The Metro Company	17.6	7.7	3.2	22.0
Greater Copenhagen Light Rail	0.0	0.4	0.0	0.4
Sund & Bælt Holding	0.5	0.0	0.2	0.3
CPH City & Port Development	14.5	1.6	2.2	13.9
Other				
Danish Ship Finance	2.8	0.0	1.1	1.8
DR (Danish Broadcasting Corporation)	3.0	0.2	0.2	3.0
EKF (Danish Export Credit Agency)	13.2	2.3	2.7	12.9
Total	104.5	27.7	15.8	116.5

Note: Re-lending to Danish Ship Finance is calculated without the hedge portfolio. The sum of transactions during the year does not equal the change in the portfolio due to changes in the exchange rate between dollars and kroner. The difference is reflected in a similar change in the value of the central government's hedge portfolio.



distribution of the companies' borrowing across the years enables interest risk diversification and strengthens the central government's risk management.

Virtually all on-lending in 2018 was granted on auction days, cf. Chart 14 (right).

Fewer government loan guarantees

In recent years, government-owned companies have used on-lending rather than government-guaranteed borrowing. This reflects that on-lending is usually the less expensive option as the loan is financed by issuing government bonds, which are typically more liquid than government-guaranteed issuances.

At the end of 2018, Danmarks Nationalbank administered government loan guarantees of kr. 20 billion, equivalent to 0.9 per cent of GDP, cf. Table 6. This represents a reduction of kr. 4 billion relative to 2017. The largest guarantees have been issued to Øresundsbro Konsortiet and the Great Belt Bridge. Guarantees to these two companies account for most of the loan guarantees. The Danish and Swedish governments have joint and several liability for the debt of Øresundsbro Konsortiet. The central government also issues guarantees not administered by Danmarks Nationalbank. These guarantees have primarily been given to international organisations and export credits. In 2017, the central government had issued guarantees amounting to kr. 293 billion, or 13 per cent of GDP.

Loan guarantees administered by Danmarks Nationalbank on behalf of the government Table 6

End-2018	Kr. million	Per cent of GDP
The Great Belt Bridge	3,955	0.2
Øresund Landworks	447	0.0
Femern Landworks	6	0.0
Øresundsbro Konsortiet I/S	13,189	0.6
DSB (Danish State Railways)	1,687	0.1
DR (Danish Broadcasting Corporation)	436	0.0
Total	19,720	0.9

Note: The figures include guaranteed swaps. Loans raised by Øresundsbro Konsortiet are guaranteed by the Danish and Swedish governments subject to joint and several liability.

Government funds

Danmarks Nationalbank manages the assets of three government funds

On behalf of the central government, Danmarks Nationalbank manages the Social Pension Fund, SPF, Innovation Fund Denmark and the Fund for Better Working Environment and Labour Retention, cf. Box 3. The assets of the funds are set off against the total central government debt and are managed on a

consolidated basis with other financial assets and liabilities of the central government in the area of government debt. The risk on the funds' assets is assessed separately, but included in the consolidated risk management of the central government debt.

At the end of December 2018, the Social Pension Fund, SPF, had assets totalling kr. 36 billion nominally, cf. Table 7. SPF's nominal bond portfolio has been gradually reduced since 1995.

Government funds

Box 3

The Social Pension Fund, SPF

SPF was established in 1970 by the Social Pension Fund Act, whereby a special pension contribution was introduced. The contribution – and thus payments into SPF – ceased in 1982. Since then, the assets of SPF and the interest accrued less pension yield tax have been used for financing pension improvement measures.

SPF is managed by a committee comprising representatives of the Ministry of Finance, the Danish Agency for Labour Market and Recruitment and Danmarks Nationalbank. Day-to-day management of the assets is undertaken by Danmarks Nationalbank. The framework for management is laid down in the Regulations governing the management of the Social Pension Fund. According to these regulations, the assets of SPF can be invested in Danish listed bonds.

Innovation Fund Denmark

In March 2014, the Folketing (parliament) entered into an agreement to establish Innovation Fund Denmark. Each year, the Fund allocates funding for new initiatives to promote growth and create jobs through knowledge. The assets of the Advanced Technology Foundation, the Danish Council for Strategic Research and the Danish Council for Technology and Innovation were concentrated in the new Fund.

Fund for Better Working Environment and Labour Retention

The Fund for Better Working Environment and Labour Retention was established in 2007 with a view to supporting measures to prevent physical and mental impairment, work-related accidents and occupational diseases. The central government transferred a total of kr. 3 billion to the Fund when it was established, and no further capital injections are planned.

The government funds' assets, end-2018

Table 7

Nominal value, kr. billion	SPF	Innovation Fund Denmark	Fund for Better Working Environment and Labour Retention	Share of outstanding, per cent ¹
4 per cent bullet loan 2019	13.6	3.9	0.7	29.0
3 per cent bullet loan 2021	7.4	3.0	-	14.0
1.5 per cent bullet loan 2023	8.3	2.7	-	19.0
7 per cent bullet loan 2024	5.1	1.9	-	59.8
1.75 per cent bullet loan 2025	-	2.1	-	3.1
Mortgage bonds maturing in 2020, nominal	1.7	-	-	-
Balance of account	0.1	0.2	0.0	-
Total	36.1	13.7	0.7	-

¹ Indicates the funds' ownership share of the total outstanding value in the issue.

In 2018, around kr. 13.3 billion was transferred from SPF to the Danish Agency for Labour Market and Recruitment, cf. Table 8. SPF's monthly transfers of just over kr. 1 billion were financed partly by interest payments, partly by selling government bonds maturing in 2019 and 2024. In addition, maturing mortgage bonds in SPF's portfolio amounted to kr. 5.6 billion. SPF did not buy bonds in 2018 and is not expected to do so in future when current transfers can be covered by interest payments and sales of assets. At the current level of transfers, SPF's funds are expected to be depleted around the end of 2021, when SPF is expected to cease operations.

SPF's market risk is managed using a band for the average Macaulay duration over the year. In 2018, the band was 3.0 years \pm 0.5 year. The duration ended at 3.1 years. In 2019, the band is set at 2.5 years \pm 0.5 year. The lower duration reflects the shorter expected remaining life of SPF.

At end-2018, the assets of Innovation Fund Denmark amounted to kr. 14 billion, stated at nominal value. The Advanced Technology Foundation's portfolio is almost evenly distributed – in accordance with the strategy – on short-, medium- and long-term Danish government bonds. In 2018, the Fund transferred kr. 400 million to the Ministry of Higher Education and Science.

At end-2018, the assets of the Fund for Better Working Environment and Labour Retention amounted to

The government funds' revenue and expenditure in 2018

Table 8

Kr. million	SPF	Innovation Fund Denmark	Fund for Better Working Environment and Labour Retention
Revenue			
Interest, etc. ¹	1,011	172	-2
Expenditure			
Transfer to relevant ministry	13,320	400	15
Pension yield tax ²	-	-	-
Net revenue	-12,309	-228	-16

1. Net statement of interest received, interest receivable, and distributed capital losses on buy-backs.
2. Pension yield tax is payable on the return for the preceding year.

kr. 0.7 billion. Under a statutory provision, the assets of the Fund may be invested in Danish government bonds only. The Fund's revenue from interest and redemptions is invested to ensure that, as far as possible, future transfers from the Fund are matched by its revenue from interest and redemptions. The Fund transferred kr. 14.5 million to the Danish Agency for Labour Market and Recruitment in 2018.

ABOUT REPORT



Reports are periodical reports and accounts describing the activities and tasks of Danmarks Nationalbank.

Reports include e.g. Danmarks Nationalbank's annual report and the semi-annual report on monetary and financial trends.

The report consists of a Danish and an English version. In case of doubt regarding the correctness of the translation the Danish version is considered to be binding.

DANMARKS NATIONALBANK
HAVNEGADE 5
DK-1093 COPENHAGEN K
WWW.NATIONALBANKEN.DK

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CONTACT

Jonas Staghøj
Senior Adviser

Jst@nationalbanken.dk
+45 3363 6146

BANKING AND MARKETS

Danish government borrowing and debt 2018

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THE GOVERNMENT FUNDS IN 2018

Central government debt, year-end 2008-18 (continues next page)

Table 1

Kr. million	2008	2009	2010	2011	2012
A. Loan					
<i>Domestic debt</i>					
- Fixed-rate bonds, nominal	451,394	505,973	556,900	606,627	620,695
- Inflation-linked bonds ¹	-	-	-	-	10,207
- Fisheries Bank bonds	-	995	887	786	684
- Lottery bonds	200	100	-	-	-
- Treasury bills	-	-	25,460	44,200	44,940
- Currency swaps from kroner to euro (net) ²	-11,662	-8,197	2,974	2,974	-1,490
- Currency swaps from kroner to dollar	-10,423	-10,956	-9,808	-8,660	-7,512
Domestic debt, total	429,509	487,915	576,413	645,927	667,524
<i>Foreign debt³</i>					
- in dollars	9,947	10,218	9,901	8,957	7,662
- in euro	123,126	129,351	104,811	102,861	82,338
- in other currencies and multi-currency	19	19	18	-	-
Foreign debt, total	133,092	139,588	114,731	111,818	90,000
Domestic and foreign debt, total	562,600	627,509	691,144	757,745	757,524
B. Collateral related to swaps⁴	-	-	-	-	-
C. Government deposits with Danmarks Nationalbank⁵	-258,131	-210,932	-177,282	-223,100	-161,991
D. The Social Pension Fund, The Fund for Better Working Environment and Labour Retention and The Danish National Innovation Fund					
- Government securities	-98,604	-77,720	-75,511	-69,351	-70,859
- Other securities	-9,643	-37,376	-52,075	-51,393	-37,902
The three funds, nominal value, total	-108,247	-115,096	-127,587	-120,744	-108,761
E. Bonds to finance social housing	-	-	-	-	-
Central-government debt, total (A+B+C+D+E)	196,222	301,481	386,275	413,901	486,771
Central-government debt, per cent of GDP	10.9	17.5	21.3	22.4	25.7

Note: A positive sign indicates a liability, a negative sign an asset.

1. Inflation-linked bonds are compiled as indexed value at end-year.

2. Currency swaps from kroner to euro less currency swaps from euro to kroner.

3. Foreign loans are compiled after end-exposure.

4. Cash-collateral for the market value of the swap portfolio. A positive number means the counterparties net have posted collateral. There is a corresponding counter item on the government's deposit with the central bank.

5. Deposits include deposits of the government funds and cash-collateral related to swaps. For 2018, government deposit are measured as in Danmarks Nationalbank's balance sheet.

Central government debt, year-end 2008-18 (continued)

Table 1

Kr. million	2013	2014	2015	2016	2017	2018
A. Loan						
<i>Domestic debt</i>						
- Fixed-rate bonds, nominal	615,907	637,617	584,356	572,020	570,222	543,732
- Inflation-linked bonds ¹	23,251	35,531	35,667	38,193	38,765	43,897
- Fisheries Bank bonds	594	507	424	343	272	200
- Lottery bonds	-	-	-	-	-	-
- Treasury bills	32,300	29,800	29,840	27,180	32,740	30,400
- Currency swaps from kroner to euro (net) ²	-1,490	-	-	-	-	-
- Currency swaps from kroner to dollar	-6,364	-5,215	-4,067	-2,942	-1,872	-1,022
Domestic debt, total	664,198	698,240	646,220	634,794	640,127	617,207
<i>Foreign debt³</i>						
- in dollars	6,219	5,778	5,047	3,795	2,152	1,244
- in euro	69,689	53,207	28,223	8,044	-	-
- in other currencies and multi-currency	-	-	-	-	-	-
Foreign debt, total	75,908	58,986	33,270	11,839	2,152	1,244
Domestic and foreign debt, total	740,106	757,225	679,490	646,633	642,279	618,450
B. Collateral related to swaps⁴	3,596	3,804	2,859	1,610	1,005	690
C. Government deposits with Danmarks Nationalbank⁵	-161,953	-213,099	-157,376	-110,928	-134,689	-111,674
D. The Social Pension Fund, The Fund for Better Working Environment and Labour Retention and The Danish National Innovation Fund						
- Government securities	-65,550	-64,825	-62,399	-63,233	-52,084	-48,454
- Other securities	-32,352	-25,259	-17,172	-8,834	-7,432	-1,675
The three funds, nominal value, total	-94,902	-90,084	-79,571	-72,067	-59,516	-50,129
E. Bonds to finance social housing	-	-	-	-	-	-30,298
Central-government debt, total (A+B+C+D+E)	486,848	457,846	445,402	465,249	449,079	427,039
Central-government debt, per cent of GDP	25.2	23.1	21.9	22.2	20.6	18.9

Note: A positive sign indicates a liability, a negative sign an asset.

1. Inflation-linked bonds are compiled as indexed value at end-year.

2. Currency swaps from kroner to euro less currency swaps from euro to kroner.

3. Foreign loans are compiled after end-exposure.

4. Cash-collateral for the market value of the swap portfolio. A positive number means the counterparties net have posted collateral. There is a corresponding counter item on the government's deposit with the central bank.

5. Deposits include deposits of the government funds and cash-collateral related to swaps. For 2018, government deposit are measured as in Danmarks Nationalbank's balance sheet.

Central government's financing requirement, 2016-18

Table 2

Kr. billion	2016	2017	2018
Current, investment and lending budget	-8.5	30.9	na.
On-lending of government loans	-11.4	-1.4	na.
Distributed capital losses on issue and due interest ¹	2.6	3.0	na.
Other capital items ²	-6.7	-12.6	na.
Net cash balance	-23.9	20.0	-7.2
Net financing requirement (= -Net cash balance)	23.9	-20.0	7.2
Redemption on long-term domestic government debt ³	78.7	84.5	95.9
Redemption on T-bills ⁴	29.8	27.2	32.7
Domestic financing requirement ⁵	132.4	91.7	135.8
Redemption on long-term foreign government debt ⁶	21.5	9.3	1
Redemption on Commercial Paper ⁴	0.0	0.0	0.0
Financing requirement	153.9	101.0	136.8

Source: Central Government Accounts. 2017 are based on Danmarks Nationalbank's end-year specification, which may differ from accounting figures.

1. Including capital losses on buy-backs.
2. Including e.g. movements in the central government's holdings, cf. Budget Outlook from the Ministry of Finance.
3. Including net purchases of bonds from the government funds and changes in collateral related to swaps.
4. Corresponds to the outstanding amount at the end of the year before.
5. Deviations from actual domestic financing requirement are possible due to inter alia foreign on-lending.
6. Including net payments on cross-currency swaps.

Interest payments on central-government debt, 2014-18

Table 3

Kr. billion	2014	2015	2016	2017	2018
Domestic debt	19.2	21.6	21.5	18.5	15.6
Foreign debt	-1.0	-0.2	0.1	0.0	-0.1
Central government's account at Danmarks Nationalbank	0.0	0.6	0.3	0.2	0.8
Government funds	-2.8	-3.2	-4.1	-1.5	-1.2
Bonds for financing social housing	-	-	-	-	0.0
Central-government debt	15.5	18.8	17.8	17.1	15.1
Central-government debt, per cent of GDP	0.8	0.9	0.9	0.8	0.7
On-lending	-2.5	-2.5	-2.1	-2.0	-1.5
Central-government debt, adjusted for on-lending	13.0	16.4	15.7	15.2	13.6
Central-government debt, adjusted for on-lending, per cent of GDP	0.7	0.8	0.8	0.7	0.6

Note: A positive sign denotes interest costs. A negative sign denotes interest income.

Source: Central Government Accounts. Figures for 2018 are provisional figures from the central government's accounting.

Issuance of domestic central-government securities in 2018

Table 4

ISIN code	Coupon per cent	Name	Opened	Redemption date	Issuance, kr. million, nominal	Issuance, kr. million, market value
Government bonds						
DK0009923641	0.25	Bullet loan 2020	17 May 2017	15 Nov 2020	19,870	20,221
DK0009923054	1.5	Bullet loan 2023	4 Sep 2012	15 Nov 2023	7,805	8,449
DK0009923567	0.5	Bullet loan 2027	25 Jan 2017	15 Nov 2027	38,890	39,070
DK0009922320	4.5	Bullet loan 2039	11 Nov 2008	15 Nov 2039	2,180	3,657
DK0009923724	0.1	DGBi 2030	7 Feb 2018	15 Nov 2030	10,910	11,828
Government bonds, total					79,655	83,225
T-bills						
DK0009816563	0	T-bill 2018 I	30 Aug 2017	1 Mar 2018	4,700	4,704
DK0009816647	0	T-bill 2018 II	29 Nov 2017	1 Jun 2018	19,960	19,996
DK0009816720	0	T-bill 2018 III	27 Feb 2018	1 Sep 2018	6,000	6,016
DK0009816803	0	T-bill 2018 IV	30 May 2018	1 Dec 2018	16,660	16,697
DK0009816993	0	T-bill 2019 I	30 Aug 2018	1 Mar 2019	29,420	29,491
DK0009817025	0	T-bill 2019 II	29 Nov 2018	1 Jun 2019	980	983
T-bills, total					77,720	77,887
Domestic issuance, total					157,375	161,112

Note: Issuances related to switch operations are included.

Central-government domestic debt as of end-2018

Table 5.1

Kr. million, nominal value	Outstanding amount end-2017	Issuance 2018	Redemptions 2018	Outstanding amount end-2018	Redemption date	ISIN code
Government bonds, fixed interest rate						
<i>Bullet loans</i>						
0.25 per cent bullet loan 2018	53,350	-	53,350	-	15 Nov 2018	DK0009923484
4 per cent bullet loan 2019	79,724	-	16,992	62,732	15 Nov 2019	DK0009922403
0.25 per cent bullet loan 2020	30,685	19,870	-	50,555	15 Nov 2020	DK0009923641
3 per cent bullet loan 2021	82,810	-	8,490	74,320	15 Nov 2021	DK0009922676
1.5 per cent bullet loan 2023	50,165	7,805	-	57,970	15 Nov 2023	DK0009923054
7 per cent bullet loan 2024	14,012	-	2,313	11,699	10 Nov 2024	DK0009918138
1.75 per cent bullet loan 2025	81,705	-	14,090	67,615	15 Nov 2025	DK0009923138
0.5 per cent bullet loan 2027	49,100	38,890	-	87,990	15 Nov 2027	DK0009923567
4.5 per cent bullet loan 2039	128,670	2,180	-	130,850	15 Nov 2039	DK0009922320
<i>Inflation-linked bonds¹</i>						
0.1 per cent inflation-linked 2023	38,765	-	6,167	32,886	15 Nov 2023	DK0009922916
0.1 per cent inflation-linked 2030	-	10,987	-	11,011	15 Nov 2030	DK0009923724
<i>Perpetual</i>						
5 per cent Dansk-Islandsk Fond 1918	1	-	-	1	Perpetual	-
Government bonds, fixed interest rate, total	608,987	79,732	101,402	587,628		
T-bills						
T-bill I 2018	27,660	4,700	32,360	-	1 Mar 2018	DK0009816563
T-bill II 2018	5,080	19,960	25,040	-	1 Jun 2018	DK0009816647
T-bill III 2018	-	6,000	6,000	-	1 Sep 2018	DK0009816720
T-bill IV 2018	-	16,660	16,660	-	1 Dec 2018	DK0009816803
T-bill I 2019	-	29,420	-	29,420	1 Mar 2019	DK0009816993
T-bill II 2019	-	980	-	980	1 Jun 2019	DK0009817025
T-bills, total	32,740	77,720	80,060	30,400		
Fisheries Bank of Denmark Bonds						
5 per cent 2019	100	-	50	50	1 Nov 2019	DK0009604621
5 per cent 2025	172	-	21	151	1 Nov 2025	DK0009604894
Fisheries Bank Bond, total	272	-	71	200		
Domestic government securities, total	641,999	157,452	181,534	618,229		
Swaps from kroner to dollar	-1,872	-	-850	-1,022		
Central-government domestic debt, total	640,127	157,452	180,684	617,207		

¹ Issuance in the inflation-linked bond includes the index revaluation. Outstanding amount in the inflation-linked bond is measured at indexed nominal value at year-end.

Central-government foreign debt as of end-2018

Table 5.2

ISIN code/loan no	Coupon, per cent	Name	Redemption date	Nominal value, kr. million ¹
Loan	-	-	-	-
Other foreign debt		Currency swap in dollar ²		1,244
Foreign debt, total				1,244

¹ The outstanding amount as of 31 December 2018 is calculated to kroner on the basis of the following exchange dollar rates as of 28 December 2018: 651.94.

² The government's currency swaps are all concluded to hedge on-lending in dollar to Danish Ship Finance.

Concluded interest-rate swaps in 2018

Table 6.1

Issued	Redemption date	Government pays	Currency	Principal amount, kr. million
15 Jan 2018	15 Jan 2028	Floating rate	Danish kroner	200
31 Jan 2018	31 Jan 2028	Floating rate	Danish kroner	200
20 Feb 2018	20 Feb 2028	Floating rate	Danish kroner	200

Note: On all concluded interest-rate swaps in 2018 the central government pays the T/N rate.

Central-government portfolio swaps as of end-2018

Table 6.2

Expiry year	Krone interest rate swaps		Euro interest rate swaps	
	Net exposure, kr. million	Net exposure, million euro	Net exposure, kr. million ¹	
2019	-	-	-	-
2020	-	-	-	-
2021	-	-	-	-
2022	-	-	-	-
2023	-	-	-	-
2024	-	-	-	-
2025	-	-150	-1.120	-
2026	-	-650	-4.854	-
2027	600	-	-	-
2028	600	-	-	-
Interest rate swaps, total	1,200	-800	-5,974	

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

¹ Converted to kroner on the basis of the following exchange rate as of 28 December 2018: euro = 746.73.

**On-lending and government guarantees administered
 by Danmarks Nationalbank, 2014-18**

Table 7

Kr. million	2014	2015	2016	2017	2018
On-lending					
DR (Danish Broadcasting Corporation)	3,241	3,140	3,140	3,002	3,044
Danish Ship Finance	6,748	5,902	4,534	2,775	1,751
EKF (Danish Export Credit Agency)	16,670	15,810	14,933	13,248	12,853
Energinet.dk	16,319	18,216	20,924	22,980	25,505
Femern Belt	1,550	1,950	2,350	2,550	6,200
Femern Landworks	500	725	1,325	1,425	2,600
The Financial Stability Company	5,328	800	-	-	-
Fjord Link Frederikssund			530	530	650
The Metro Company	7,090	10,140	15,035	17,585	21,990
The Danish North Sea Fund	-	-	-	-	-
SSI (Statens Serum Institut)	387	387	387	-	-
The Great Belt Bridge	15,711	16,143	15,696	15,110	17,040
Sund og Bælt Holding	400	400	500	500	300
CPH City & Port Development	11,775	15,500	14,800	14,450	13,850
Øresund Landworks	10,262	10,062	10,342	10,302	10,322
Greater Copenhagen Light Rail		100	100	-	350
Ireland	2,977	2,985	2,974	-	-
Total	98,959	102,260	107,569	104,457	116,456
Guarantees					
DR (Danish Broadcasting Corporation)	836	816	796	776	436
The Danish State Railways	5,404	4,632	3,117	3,526	1,687
Femern Belt	-	-	36	-	-
Femern Landworks	-	-	39	4	6
Fjord Link Frederikssund			-	-	-
The Great Belt Bridge	8,905	7,176	6,239	5,971	3,955
Sund og Bælt Holding	21	28	4	100	-
Øresund Landworks	515	456	517	495	447
The Øresund Bridge	15,905	15,011	14,202	13,009	13,189
Total	31,586	28,120	24,950	23,882	19,720

Note: Guarantees are inclusive of guaranteed swaps.

Buy-backs from the market by the government and the government funds in 2018

Table 8

Kr. million, market value	Government	Social Pension Fund	Fund for Better Working Environment and Labour Retention	Innovation Fund Denmark	Total buy-backs from the market	Hereof buy-backs in switch operations
4 per cent bullet loan 2019	18,082	-2,631	21	-152	15,320	1,768
3 per cent bullet loan 2021	9,438	-	-	-	9,438	3,386
7 per cent bullet loan 2024	3,340	-1,743	-	-	1,597	299
1.75 per cent bullet loan 2025	15,628	-	-	217	15,846	10,680
0.1 per cent DGBi 2023	6,572	-	-	-	6,572	5,683
Total	53,060	-4,374	21	66	48,773	21,816